

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-4858

INTERNATIONAL FLAVORS & FRAGRANCES INC.

(Exact name of registrant as specified in its charter)

New York

(State or other jurisdiction
of incorporation or organization)

13-1432060

(I.R.S. Employer Identification No.)

521 West 57th Street, New York, NY 10019-2960

200 Powder Mill Road, Wilmington, DE 19803-2907

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code (212) 765-5500

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, par value 12 1/2¢ per share	IFF	New York Stock Exchange
1.750% Senior Notes due 2024	IFF 24	New York Stock Exchange
1.800% Senior Notes due 2026	IFF 26	New York Stock Exchange

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by checkmark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the voting stock held by non-affiliates of the Registrant was \$30,369,016,357 as of June 30, 2022.

As of February 21, 2023, there were 255,061,711 shares of the registrant's common stock, par value 12 1/2¢ per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's proxy statement for the 2023 Annual Meeting of Shareholders (the "IFF 2023 Proxy Statement") are incorporated by reference in Part III of this Form 10-K.

INTERNATIONAL FLAVORS & FRAGRANCES INC.

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PART I

In this report, we use the terms “IFF,” “the Company,” “we,” “us” and “our” to refer to International Flavors & Fragrances Inc. and its subsidiaries.

ITEM 1. BUSINESS.

We are a leading creator and manufacturer of food, beverage, health & biosciences, scent and pharma solutions and complementary adjacent products, including cosmetic active and natural health ingredients, which are used in a wide variety of consumer products. Our products are sold principally to manufacturers of dairy, meat, beverages, snacks, savory, sweet, baked goods and other foods, personal care products, soaps and detergents, cleaning products, perfumes and cosmetics, dietary supplements, food protection, infant and elderly nutrition, functional food, pharmaceutical and oral care products. As a result, we hold global leadership positions in the Food & Beverage, Home & Personal Care and Health & Wellness markets, and across key Tastes, Textures, Scents, Nutrition, Enzymes, Cultures, Soy Proteins, Pharmaceutical Excipients and Probiotics categories.

Sales in 2022 were approximately \$12.440 billion. Based on 2022 sales, approximately 42% of sales were to global consumer products companies and approximately 58% of sales were to small and mid-sized companies. During 2022, our 25 largest customers accounted for 28% of sales. In 2022, no customer accounted for more than 10% of sales.

Our business is geographically diverse, with sales in the U.S. representing approximately 29% of sales in 2022. No other country represented more than 6% of sales.

Our Product Offerings

Our business currently consists of four segments: Nourish, Health & Biosciences, Scent and Pharma Solutions. As part of our ongoing transformation and business initiatives, we intend to reorganize our segments around end markets: Food & Beverage, Household & Personal Care and Health.

Nourish

As a leading creator of ingredients and solutions, we help our customers deliver on the promise of healthy and delicious foods and drinks that appeal to consumers. We create products in our regional creative centers which allows us to satisfy local customer preferences, while also helping to ensure regulatory compliance and production standards. We develop thousands of different Nourish offerings, most of which are tailor-made, and we continually develop new ingredients and solutions to meet changing consumer preferences and customer needs.

Our Nourish segment consists of an innovative and broad portfolio of natural-based ingredients to enhance nutritional value, texture and functionality in a wide range of beverage, dairy, bakery, confectionery and culinary applications and consists of three business units: Ingredients, Flavors and Food Designs.

Ingredients include a diversified portfolio across natural and plant-based specialty food ingredients derived from herbs and plants that provide texturizing solutions used in the food industry, food protection solutions used in food and beverage products, as well as specialty soy and pea protein with value-added formulations, emulsifiers and sweeteners. Natural food protection ingredients consist of natural antioxidants and anti-microbials used for natural food preservation and shelf-life extension for beverages, cosmetic and healthcare products, pet food and feed additives.

Flavors include a range of flavor compounds and natural taste solutions that are ultimately used by our customers in savory products (soups, sauces, meat, fish, poultry, snacks, etc.), beverages (juice drinks, carbonated or flavored beverages, spirits, etc.), sweets (bakery products, candy, cereal, chewing gum, etc.), and dairy products (yogurt, ice cream, cheese, etc.). Flavors also include value-added spices and seasoning ingredients for meat, food service, convenience, alternative protein and culinary products.

Food Designs include savory solution products such as spices, sauces, marinades and mixtures. During the fourth quarter of 2022, we announced our entry into an agreement to sell the Savory Solutions Group. We expect that the transaction will close in the second quarter of 2023, subject to customary closing conditions. Additionally, Food Designs provide inclusion products that help with taste and texture by, among other things, combining flavorings with fruit, vegetables and other natural ingredients for a wide range of food products, such as health snacks, baked goods, cereals, pastries, ice cream and other dairy products.

Health & Biosciences

Our Health & Biosciences segment consists of the development and production of an advanced biotechnology-derived portfolio of enzymes, food cultures, probiotics and specialty ingredients for food and non-food applications. Among many other applications, this biotechnology-driven portfolio includes cultures for use in fermented foods such as yogurt, cheese and fermented beverages, probiotic strains, many with documented clinical health claims for use as dietary supplements and through industrial fermentation the production of enzymes and microorganisms that provide product and process performance benefits to household detergents, animal feed, ethanol production and brewing. Health & Biosciences is comprised of five business units: Health, Cultures & Food Enzymes, Home & Personal Care, Animal Nutrition and Grain Processing. On July 1, 2022, we completed the divestiture of our Microbial Control business unit (formerly a part of the Health & Biosciences segment).

Health provides ingredients for dietary supplements, functional food and beverage, specialized nutrition and pharma.

Cultures & Food Enzymes provides products that aim to serve the global demand for healthy, natural, clean label and fermented food for fresh dairy, cheese, bakery and brewing products. Such products contribute to extended shelf life, stability, taste and texture, helping our customers to improve their product offerings. The business's enzyme solutions also allow our customers to provide low sugar, high fiber and lactose-free dairy products.

Home & Personal Care produces enzymes for laundry and dishwashing detergents, cleaning and textiles to help enhance the product and process performance of products in the fabric and home care, textiles and industrials and personal care markets.

Animal Nutrition produces feed enzymes and animal health solutions that help to improve welfare, performance and sustainability of livestock animal farming.

Grain Processing produces yeasts and enzymes for biofuel production and carbohydrate processing.

Scent

Our Scent segment creates fragrance compounds, fragrance ingredients and cosmetic ingredients that are integral elements in the world's finest perfumes and best-known household and personal care products. Consumer insights science and creativity are at the heart of our Scent business, and, along with our unique portfolio of natural and synthetic ingredients, global footprint, innovative technologies and know-how, and customer intimacy, we believe make us a market leader in scent products. The Scent segment is comprised of three business units: Fragrance Compounds, Fragrance Ingredients and Cosmetic Actives.

Fragrance Compounds are unique and proprietary combinations of multiple fragrance ingredients that are ultimately used by our customers in their consumer goods. Our creative and commercial teams within fragrance compounds are organized into two broad categories: fine fragrances and consumer fragrances.

Our perfumers harness creativity and leverage our innovative captive molecules, sustainable natural ingredients obtained with innovative processes, biotech ingredients, data science, and consumer insights to create unique and inspiring fragrances driving consumer preferences.

Our fine fragrances focus on perfumes and colognes, creating global and local namesake brands, from high luxury to mass market, from market leading to ultra-niche products.

Our consumer fragrances include three end-use categories of products:

- Fabric Care, including laundry detergents, fabric softeners and specialty laundry products;
- Home Care, including household cleaners, dishwashing detergents and air fresheners; and
- Body Care, including personal wash, hair care and toiletries products.

Fragrance Ingredients are natural and synthetic, and active and functional ingredients that are used internally and sold to third parties, including competitors, for use in the preparation of compounds. While the principal role of our fragrance ingredients facilities is to support our fragrance compounds business, we utilize excess manufacturing capacity to manufacture and sell certain fragrance ingredients to third parties, enabling us to leverage our fixed costs while maintaining the security of our supply for our perfumers and ultimately our customers. Flavor ingredients include natural flavor extracts, specialty botanical extracts, distillates, essential oils, citrus products, aroma chemicals and natural gums and resins. Such ingredients are used for food, beverage and flavors, and are often sold directly to food and beverage manufacturers who use them in producing consumer products.

Cosmetic Actives designs, develops, manufactures and markets innovative ingredients for the cosmetics and personal care industry, while offering active ingredients, functional ingredients, and delivery systems.

Pharma Solutions

Our Pharma Solutions segment produces, among other things, a vast portfolio of cellulose and seaweed-based pharmaceutical excipients, used to improve the functionality and delivery of active pharmaceutical ingredients, including controlled or modified drug release formulations, and enabling the development of more effective pharmaceutical finished dosage formulations. Our excipients are used in prescription and over-the-counter pharmaceuticals and dietary supplements. Our Pharma Solutions products also serve a variety of other specialty and industrial end-uses including coatings, inks, electronics, agriculture, and consumer products.

Consumer Insights, Research and Product Development Process

The markets in which we compete require constant innovation to remain competitive. Consumer preferences tend to drive change in our markets, and as science evolves and sustainability continues to be a key factor to customers and consumers, we must continue to strengthen our research and development platforms and adapt our capabilities to provide differentiated products.

Consumer Insights

We believe that the first step to creating an innovative and unique product experience begins with gaining insight into the consumer and emerging industry trends. By developing a deep understanding of what consumers value and prefer through our consumer insight programs, we are better able to focus our research and development and creative efforts.

Our consumer science, insight and marketing teams interpret trends, monitor product launches, analyze quantitative market data and conduct numerous consumer interviews annually.

Based on this information, we develop innovative and proprietary programs to evaluate potential products that enable us to understand the emotional connections between a prospective product and the consumer. We believe this ability to pinpoint the likelihood of a product's success translates into stronger brand equity, resulting in increased returns and greater market share gains for our customers as well as for IFF.

Research and Development

We consider our research and development infrastructure to be one of our key competencies and critical to our ability to provide differentiated products to our customers. We have strong product and application development pipelines built upon a global network that includes research and development, as well as regulatory and product stewardship capabilities.

We focus and invest substantial resources in the research and development of new and innovative molecules, compounds, formulations and technologies and the application of these to our customers' products. Using the knowledge gained from our consumer insights programs and business unit needs, we strategically focus our resources around key research and development platforms that address or anticipate consumer needs or preferences. Our innovation-based platforms are aligned with key consumer insight-led growth themes: improving home and personal care, empowering wellbeing and healthy lives, transforming food systems and accelerating climate solutions. By aligning our capabilities and resources to these platforms, we ensure the proper support and focus for each program so that our products can be further developed and eventually accepted for commercial application.

As of December 31, 2022, we have 940 granted U.S. patents, and 546 pending U.S. patent applications, as well as numerous other granted patents and pending patent applications around the world. We have developed many unique molecules and delivery systems for our customers that are used as the foundations of successful products around the world.

Our principal basic research and development activities are located in Union Beach, New Jersey; Wilmington, Delaware; Palo Alto, California; Brabrand, Denmark; and Leiden, The Netherlands. At those locations, our scientists and application engineers, while collaborating with our other research and development centers around the world, support the:

- discovery of new materials;
- development of new technologies, such as delivery systems;
- creation of new compounds; and
- enhancement of existing ingredients and compounds.

As of December 31, 2022, we employed approximately 3,200 people globally in research and development activities.

Creative Application

Through our global network of creative centers and application laboratories, we create or adapt the basic Nourish, Health & Biosciences, Scent and Pharma Solutions products that we have developed in the research and development process to commercialize for use in our customers' consumer products. Our global creative teams consist of marketing, consumer science, consumer insights and technical application experts, from a wide range of cultures and nationalities. In close partnership with our customers' product development groups, our creative teams create the experiences that our customers are seeking in order to satisfy consumer demands in each of their respective markets.

New product development is driven by a variety of sources including requests from our customers, who are in need of specific products for use in a new or modified consumer product, or as a result of internal initiatives stemming from our consumer insights program. Our product development team works in partnership with our scientists and researchers to optimize the consumer appeal and relevance of our offerings. We use a collaborative process between our researchers, our product development team and our customers to perfect our offerings so they are ready to be included in the final consumer product.

In addition to creating new products, our researchers and product development teams advise customers on ways to improve their existing products by moderating or substituting current ingredients with more readily accessible or less expensive materials enhancing their yield. This often results in creating a better value proposition for our customers.

Most of our formulas are treated as trade secrets and remain our proprietary assets. Our business is not materially dependent upon any individual patent, trademark or license.

Center for Commercial Excellence

Our recently established Center for Commercial Excellence utilizes a holistic and centralized approach towards commercial execution by, among other things:

- Unlocking value through improved customer experience based on market, customer and pricing insights, digital and advanced analytics, sales enablement, and marketing excellence;
- Building further sales force capability to deliver growth targets, own the end-to-end process, and deliver sales synergies using CRM systems, pricing tools, segmentation models, commercial opportunity management, account plan development, training, and incentive plans;
- Evaluating and driving new business development opportunities, including analyzing potential markets, assessing client needs, and identifying competitor response strategies; and
- Strengthening collaboration across divisions by collecting and disseminating best practices and anchoring business decisions in data-driven insights.

Supply Chain

We strive to provide our customers with consistent and quality products on a timely and cost-effective basis by managing all aspects of the supply chain, from raw material sourcing through manufacturing, quality assurance, regulatory compliance and distribution.

Procurement

In connection with the manufacture of our products, we use natural and synthetic ingredients. As of December 31, 2022, we purchased approximately 30,000 different raw materials sourced from an extensive network of domestic and international suppliers and distributors.

Natural ingredients are derived from flowers, fruits and other botanical products, as well as from animal and marine products, and commodity crops like wheat, corn and soy. They contain varying numbers of organic chemicals that are responsible for the fragrance, flavor, antioxidant properties and nutrition of the natural products. Natural products are purchased directly from farms or in processed and semi-processed forms. Some natural products are used in compounds in the state in which they are obtained and others are used after further processing. Natural products, together with various chemicals, are also used as raw materials for the manufacture of synthetic ingredients by chemical processes.

In order to ensure our supply of raw materials, achieve favorable pricing and provide timely transparency regarding inflationary trends to our customers, we continue to focus on:

- purchasing under contract with fixed or formula-based pricing for set time periods;
- entering into hedging for raw materials we purchase that can be hedged against liquid commodity assets;
- entering into supplier relationships to gain access to supplies we would not otherwise have;
- implementing indexed pricing;
- reducing the complexity of our formulations;

- evaluating the profitability of whether to buy or make an ingredient; and
- sourcing from local countries with our own procurement professionals.

Manufacturing and Distribution

As of December 31, 2022, we had approximately 220 manufacturing facilities, creative centers and application laboratories located in approximately 45 different countries. Our major manufacturing facilities are located in the United States, The Netherlands, Spain, Germany, Indonesia, Turkey, Brazil, Mexico, Slovenia, China, India, Ireland, Finland, Denmark, Belgium and Singapore.

During the last few years, we undertook an initiative to optimize our global operations footprint to efficiently and cost-effectively deliver value to our global customers. Since inception of the initiative, we completed the closure of 22 sites. By the completion of this initiative, targeted to occur by the end of 2023, we expect to close approximately 30 manufacturing sites.

Our supply chain initiatives are focused on increasing capacity and investing in key technologies. Within our more mature markets, we tend to focus on consolidation and cost optimization as well as the implementation of new technologies. In addition to our own manufacturing facilities, we develop relationships with third parties, including contract manufacturing organizations, that expand our access to the technologies, capabilities and capacity that we need to better serve our customers.

For more detailed information about risks related to our supply chain, please refer to Item 1A, “Risk Factors” – *Supply chain disruptions, geopolitical developments, including the Russia-Ukraine conflict, or climate change events (including severe weather events) may adversely affect our suppliers or our procurement of raw materials, and thus may impact our business and financial results.*

Environmental, Social, and Governance

Following the integration with Nutrition and Biosciences, Inc. (“N&B”), we launched a refreshed and comprehensive Environmental, Social, and Governance (“ESG”) roadmap, the ‘Do More Good Plan’ (“the Plan”), which aligns with IFF’s purpose of applying science and creativity for a better world. The Plan includes ambitious 2030 goals across four key areas: Environmental, Social, Governance and Sustainable Solutions.

Environmental: Climate & Planetary Health

Supporting environmental stewardship across our operations, including commitments to climate action, zero waste to landfill, water stewardship solutions and an acceleration of our responsible sourcing practices by promoting regenerative ecosystems and achieving zero deforestation for strategic raw material supply chains.

Social: Equity & Wellbeing

Advancing our commitment to people and communities by strengthening diversity, equity & inclusion within our workforce, while continuously improving our safety program by striving for an injury-free workplace, and achieving world-class safety performance. Within our responsible sourcing program, the Company will continue to promote human rights and animal welfare, while supporting farmers’ livelihoods and ensuring prosperous and equitable value chains.

Governance: Transparency & Accountability

Continuing our commitment to good governance which starts with our Board and Executive Committee and is supported by a strong governance framework, including having a robust program to ensure compliance with our Codes of Conduct and adherence to the highest standards of ethics, integrity, honesty and respect in our dealings internally and with our business partners. To enhance accountability in line with evolving stakeholder expectations, the Company has launched ESG metrics tied to executive compensation, while expanding oversight for ESG at the Board of Directors level.

Sustainable Solutions

Focusing on the sustainability value proposition and growth for all new innovations as we assist customers in achieving their own ESG goals by delivering an expanded suite of sustainable solutions for the market.

In 2022, our Company continued to achieve notable recognitions in these areas. We qualified as a constituent of the Dow Jones Sustainability Indices for the third consecutive year, a family of best-in-class benchmarks for investors who recognize that sustainable business practices are critical to generating long-term shareholder value. Once again named to both the 2022 World Index and the North America Index, this distinction validates IFF's leadership position in sustainability performance and underscores our commitment to executing on key ESG priorities. IFF was also recognized by the Human Rights Campaign as a 2022 Best Place to Work for LBGQTQ Equality and named among the 2022 Best Places to Work for Disability Inclusion by Disability:IN, for the fourth and third consecutive years, respectively. In 2022, we were named to the CDP "A List" for corporate transparency and action on climate change for the eighth consecutive year, and we also maintained a leadership position on CDP's lists for water security and forests. We were also awarded the 2022 EcoVadis Platinum sustainability rating for the second time, placing IFF among the top 1% of companies assessed. IFF continues to be listed in the FTSE4Good Index series as well as in the Euronext Vigeo World 120 Index for ESG performance.

In addition, in 2022 IFF further aligned with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) by initiating the first phase of a climate scenario analysis to understand and quantify the potential risks and opportunities related to climate change. For more detailed information about our ESG programs and performance, please refer to our annual ESG report.

Governmental Regulation

We develop, produce and market our products in a number of jurisdictions around the world and are subject to federal, regional and local legislation and regulations in various countries. Our products, which among other industries, are intended for use in food, beverage, pharmaceutical and dietary supplements, home and personal care, feed, cosmetics industries, are subject to strict quality and regulatory standards and environmental laws and regulations. We in turn are required to meet strict standards which, in recent years, have become increasingly stringent and affect both existing as well as new products. While the cost of compliance with such laws and regulations leads to higher overall capital expenditure, which can be significant in certain periods, we do not currently anticipate any material capital expenditures necessary to comply with such laws and regulations. We continue to monitor existing and pending laws and regulations and while the impact of regulatory changes cannot be predicted with certainty, compliance has not had, and is not expected to have a material adverse effect on capital expenditure, earnings or competitive position.

Our products and operations are subject to regulation by governmental agencies in each of the markets in which we operate. These agencies include (1) the Food and Drug Administration and equivalent international agencies that regulate flavors, pharmaceutical excipients and other ingredients in consumer products, (2) the Environmental Protection Agency and equivalent international agencies that regulate our manufacturing facilities, as well as fragrance products (including encapsulation systems), (3) the Occupational Safety and Health Administration and equivalent international agencies that regulate the working conditions in our manufacturing, research laboratories and creative centers, (4) local and international agencies that regulate trade and customs, (5) the Drug Enforcement Administration and other local or international agencies that regulate controlled chemicals that we use in our operations, (6) the Chemical Registration/Notification authorities that regulate chemicals that we use in, or transport to, the various countries in which we manufacture and/or market our products, and (7) the U.S. Department of Agriculture and equivalent international authorities with respect to, among other things, labeling of consumer products. We have seen an increase in registration and reporting requirements concerning the use of certain chemicals in a number of countries, such as Registration, Evaluation, Authorization and Restriction of Chemicals ("REACH") regulations in the European Union, as well as similar regulations in other countries.

In addition, we are subject to various rules relating to health, work safety and the environment at the local and international levels in the various countries in which we operate. Our manufacturing facilities throughout the world are subject to environmental standards relating to air emissions, sewage discharges, the use of hazardous materials, waste disposal practices and clean-up of existing environmental contamination. In recent years, there has been an increase in the stringency of environmental regulation and enforcement of environmental standards, and the costs of compliance have risen significantly, a trend we expect will continue in the future.

For more detailed information about risks related to governmental regulation applicable to the Company, please refer to Item 1A, "Risk Factors" – *If we are unable to comply with regulatory requirements and industry standards, including those regarding product safety, quality, efficacy and environmental impact, we could incur significant costs and suffer reputational harm which could adversely affect results of operations.*

Competition

The markets for our products are part of a larger market that supplies a wide variety of ingredients and compounds used in consumer products. The broader market includes functional foods and food additives, including seasonings, texturizers, spices, cultures, enzymes, probiotics, certain food-related commodities, and fortified products, as well as natural ingredients, nutritional ingredients, supplements and active cosmetic ingredients. Our acquisitions have also expanded our reach in products within the functional food ingredient market, including ingredients focused on improving the health and wellness characteristics of a consumer good, the dietary supplement, pharmaceutical ingredient, infant nutrition markets and the cosmetic actives market.

The global market for our products has expanded, primarily as a result of an increase in demand for, and an increase in the variety of, consumer products.

The market for our products is highly competitive. Our main competitors consist of (1) other large global companies, such as Givaudan, Firmenich, Symrise, DSM, Kerry, ADM, Novozymes, Chr. Hansen, (2) mid-sized companies, (3) numerous regional and local manufacturers and (4) consumer product companies who may develop their own competing products.

We believe that our ability to create products with the sustainability related attributes customers expect and compete successfully in the various sub-market is based on:

- our in-depth understanding of consumers,
- vertical integration,
- innovation and technological advances from our research and development activities and, as applicable, our scientists,
- our ability to tailor products to customers' needs,
- our ability to manufacture products on a global scale, and
- broad-based regulatory capabilities.

In certain industries, large multi-national customers and, increasingly, mid-sized customers, may limit the number of their suppliers by placing some on "core lists," giving them priority for development and production of their new or modified products. To compete more successfully, we must make continued investments in customer relationships and tailor our research and development efforts to anticipate customers' needs, provide effective service and secure and maintain inclusion on these "core lists."

Private label manufacturers, mostly medium-sized, local or small food manufacturers, constitute a growing segment in certain markets where we are active. Over the last decade, with the strengthening of supermarket chains, online platforms and growing consumer price consciousness, consumption of private label products has grown at a faster rate than the brand food industry rate. We believe that new business opportunities will continue to arise from these clients as they are increasing their demand for products that are similar to existing products in the market, distinctive premium products, as well as more innovative products.

Our People

The success of our business is built on our talented employees. At December 31, 2022, we had approximately 24,600 employees worldwide, of whom approximately 5,500 are employed in the United States. Our workforce plans and talent management programs support our employees to best deliver the business strategy and ensure their development and engagement.

Culture and Values

Our culture is based on our five corporate values of empowerment, expertise, innovation, integrity and responsibility, and the expression of these values can be seen and felt throughout our history. Our employees appreciate that they contribute to products that touch and enhance the lives of millions of people around the world. Our robust culture ambassador programs continue to engage a broad portion of the IFF community in building common identity and shared purpose and strengthen engagement and motivation by providing programming on IFF values and providing recognition of individuals who exemplify them.

Leadership and Development

Our leadership development efforts empower employees to become forward-looking, inspiring and capable decision-makers, agents of change and great leaders. A full portfolio of proprietary leadership development programs and an overarching talent management system is in place to support growth of leaders and at all levels. To cultivate our employees' talent and build sustainable long-lasting careers at IFF, we provide tools that enable our employees to envision their career journeys in the form of articulated career "ladders" and "frameworks". We offer corresponding development opportunities to include specialized courses for employees globally by partnering with leading institutions and universities to help provide the latest training and development offerings at all levels. We also offer to our employees an extensive library of on-demand courses and materials on leadership, management and professional skills development. Those learning resources are integrated into our human capital platform, allowing managers and employees to establish digitalized learning plans that are ultimately captured as a part of their employee profile. Further, those offerings complement our talent acquisition strategy and organized and personalized feedback process, supported by industry-leading assessment tools.

Diversity, Equity, & Inclusion (DE&I)

Our DE&I vision: "*Your Uniqueness Unleashes Our Potential.*" sets the tone for our colleagues to be empowered to bring their whole authentic selves to work. To this end, we are dedicated to nurturing a truly inclusive and equitable culture through the three pillars of our DE&I mission:

- Our People embody the mosaic of the markets we serve and are empowered to transform the future;
- Our Spirit nurtures an inclusive and fair culture where every voice is valued and heard; and
- Our World embraces diversity of thought and strives to do more good, creating a better future for all.

In 2022, the IFF DE&I program continued to grow in reach and impact. We continued our commitment of gender equality using the Economic Dividends for Gender Equity Methodological Framework, a leading global gender equity benchmark and certification. IFF was the first company ever to retain a global "Move" rating from the Edge Certified Foundation, this time across the harmonized company and 27 countries up from 22 countries. IFF also achieved an Edge Plus rating for intersectionality inclusion. IFF was also named for the first time to the 2022 Bloomberg Gender Equality Index recognizing, among other things, our commitment to transparency. IFF was also listed as a "Best Place to Work for Disability Inclusion" for the second consecutive year with a 100% score. The AccessAbilities colleague community continued to push forward awareness and inclusive behaviors for persons with disabilities. Moreover, IFF maintained our "Best Place to Work for LGBTIQ+ Equality" with 100% scores in Human Rights Campaign Corporate Equality Index and the HRC Equidad Mexico and also achieved a Bronze Level recognition from the India Workplace Equality Index. Throughout 2022, our employee resource groups known as "colleague communities" continued to thrive and mature. Our communities; Women@IFF, Prisma, Black Excellence, IFF Unidos, ACE, AccessAbilities, NextGen@IFF and SERVE (which supports veteran and first responder issues), hosted several events throughout the year and continued to expand their footprint around the globe through chapter development & new members. In 2022, our second annual Global Inclusion Week delivered over 5,000 hours of training further advancing our journey towards inclusion.

Occupational Health & Safety

Employee safety is one of the cornerstones of our business. Our occupational health and safety management system requires and encourages employees and supervised contractors at sites globally to uphold IFF's protocols, report any incidents and suggest improvements that improve the safety of work sites. Our safety management system is based on U.S. Occupational Safety and Health Administration ("OSHA") standards which apply to all of our sites in conjunction with any local regulations. To work toward a safer workplace, we have put in place a set of protocols and programs related to three areas of focus: (a) safety governance (setting and updating comprehensive safety policies and procedures), (b) safety training of employees based on IFF policies and local requirements, and (c) safety culture characterized by awareness and communication. In response to the novel coronavirus ("COVID-19") pandemic, and while following the requirements of local authorities, we have developed protocols and mandatory site guidelines to continue to protect the health and safety of employees at each location.

Availability of Reports

We make available free of charge on or through the "Investors" link on our website, www.iff.com, all materials that we file electronically with the Securities and Exchange Commission ("SEC"), including our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after electronically filing such materials with, or furnishing them to, the SEC. During the period covered by this Form 10-K, we made all such materials available through our website as soon as reasonably practicable after filing such materials with the SEC.

The SEC maintains an Internet website, www.sec.gov, that contains reports, proxy and information statements and other information that we file electronically with the SEC.

A copy of our By-Laws, Corporate Governance Guidelines, Codes of Conduct, and the charters of the Audit Committee, Human Capital & Compensation Committee, Governance & Corporate Responsibility Committee and Innovation Committee of the Board of Directors are posted on the “Investors” section of our website, www.iff.com.

Our principal executive offices are located at 521 West 57th Street, New York, New York 10019 and 200 Powder Mill Road, Wilmington, Delaware 19803.

Executive Officers of Registrant

The current executive officers of the Company, as of February 27, 2023, are listed below.

Name	Age	Position
Frank Clyburn	58	Chief Executive Officer and member of our Board of Directors
Deborah Borg	46	Executive Vice President, Chief Human Resources, Diversity & Inclusion and Communications Officer
Michael DeVeau	42	Senior Vice President, Corporate Finance and Investor Relations
Ralf Finzel	59	Executive Vice President, Global Operations Officer
Simon Herriott	59	President, Health & Biosciences
Jennifer Johnson	48	Executive Vice President, General Counsel and Corporate Secretary
Ana Paula Mendonça	54	Senior Vice President, Commercial Excellence
Glenn Richter	61	Executive Vice President and Chief Financial & Business Transformation Officer
Angela Strzelecki	56	President, Pharma Solutions
Vic Verma	54	Executive Vice President, Chief Information Officer
Christophe Fauchon de Villeplee	58	President, Scent
Gregory Yep	57	Executive Vice President, Chief Research & Development, Global Integrated Solutions & Sustainability Officer

Frank Clyburn has served as our Chief Executive Officer and a member of our Board of Directors since February 14, 2022. Mr. Clyburn joined us from Merck, where he served as Executive Vice President and President of Human Health. While at Merck since 2008, Mr. Clyburn held a number of positions, including Chief Commercial Officer, inaugural president of the company’s Global Oncology business, and President of the Primary Care and Women’s Health businesses. Before joining Merck, Mr. Clyburn was Vice President of the Oncology and Internal Medicine business units at Sanofi Aventis and held a wide range of leadership roles with that company.

Deborah Borg has served as our Executive Vice President, Chief Human Resources, Diversity & Inclusion and Communications Officer since August 29, 2022. Ms. Borg joined IFF from Bunge Limited, where she served as Chief Human Resources and Communications Officer since 2016. Prior to joining Bunge, she served in a variety of business leadership and Human Resources roles in Australia, Switzerland and the U.S. for Dow Chemical between 2000 and 2015. She began her career at General Motors Australia.

Michael DeVeau has served as our Senior Vice President, Corporate Finance and Investor Relations since December 2022 and had previously served as Senior Vice President, Chief Investor Relations & Communications Officer from February 2021 to December 2022, Vice President, Investor Relations, Communications, and Chief of Staff from September 2014 to February 2021, as well as divisional Chief Financial Officer, Scent from 2018 to 2020 and head of Corporate Strategy from 2016 to 2018. Since joining the Company in 2009 as head of investor relations, Mr. DeVeau has held various roles of increasing scope and responsibility in communications, finance and strategy. Prior to joining the Company, he served in leadership positions in investor relations, finance and corporate development at PepsiCo. Mr. DeVeau began his career as an Equity Research Analyst at Citigroup Investment Research.

Ralf Finzel has served as our Executive Vice President, Global Operations Officer since November 1, 2022. Previously, Mr. Finzel served as Vice President of Integrated Supply Chain for Honeywell International Performance Materials and Technologies Business Group in Houston since 2020. Prior to that, he served as Vice President of Integrated Supply Chain for Honeywell International Building Technologies Business Group from July 2017 to March 2020. He first joined Honeywell in Germany as an operations manager in 1999, and held various roles of increasing responsibility and scope in Europe and the U.S. Prior to joining Honeywell, he worked in research and plant management roles for Hoechst AG.

Simon Herriott has served as our President, Health & Biosciences since February 2021. From 2019 to February 2021, Mr. Herriott was Vice President and Global Business Director, Health & Biosciences for the N&B Business and from 2016 to 2019, he served as Global Business Director, Bioactives, Industrial Biosciences and Vice President, Danisco Inc. Mr. Herriott was employed by DuPont's predecessor or formerly affiliated companies for 15 years and held a variety of roles, including Global Business Director, Biomaterials, Industrial Biosciences.

Jennifer Johnson has served as our Executive Vice President, General Counsel and Corporate Secretary since February 2021. From 2019 to February 2021, Dr. Johnson served as Associate General Counsel for the N&B Business. Dr. Johnson joined DuPont's predecessor or formerly affiliated companies in 2013, where she led the legal team for DuPont's former Industrial Biosciences business as Associate General Counsel and subsequently served as Assistant Chief Intellectual Property Counsel for Industrial Biosciences. Prior to joining DuPont, Dr. Johnson was a Partner at the law firm of Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

Ana Paula Mendonça has served as our Senior Vice President, Commercial Excellence since December 2022. Prior to that, she served as Vice President, President Global Ingredients & Regional General Manager, North America, Consumer Fragrances since February 2022, and, before that, as Vice President, Regional General Manager, North America, Consumer Fragrances since January 2016. Ms. Mendonça joined IFF more than 30 years ago, and her broad experience expands across Category Management (Fine Fragrance, Home, Fabric, and Beauty), Global Marketing, and Product Innovation.

Glenn Richter has served as our Executive Vice President, Chief Financial & Business Transformation Officer since February 2023. Mr. Richter served as our Executive Vice President, Chief Financial Officer from September 2021 to February 2023. Prior to joining IFF, Mr. Richter was Chief Financial Officer of TIAA, having worked at the company in various leadership roles from April 2015 to July 2021. Previously, Mr. Richter worked for Nuveen Investments as Chief Operating Officer and Chief Administrative Officer and before joining Nuveen Investments in 2006, he served as Executive Vice President, Chief Financial Officer for RR Donnelley & Sons, and prior to that he was Executive Vice President & CFO of Sears, Roebuck and Co. and Chairman of Sears Canada, a publicly-traded affiliate.

Angela Strzelecki has served as our President, Pharma Solutions since February 2021. From 2019 to February 2021, Dr. Strzelecki was Platform Leader, Pharma Solutions for the N&B Business. From 2013 to 2019, Dr. Strzelecki held a variety of leadership positions at DuPont or its formerly affiliated companies, including Platform Leader, Pharma Solutions for the Nutrition and Health business, Planning Director - Corporate Planning and M&A, Global Business Director - Electronics & Communications, and the North America Business Director - Building Innovations.

Vic Verma has served as our Executive Vice President, Chief Information Officer since February 2021 and had previously served as our Senior Vice President, Chief Information Officer from 2016 to February 2021. Before joining the Company, Mr. Verma served as Vice President of Global Infrastructure Operations at American Express, a multinational financial services company. Prior to that, Mr. Verma held several other leadership positions at American Express as well as Vice President, Division CIO and management consulting roles with GlaxoSmithKline, Bristol Myers Squibb and PricewaterhouseCoopers.

Christophe Fauchon de Villeplee has served as our President, Scent since September 2021. Mr. de Villeplee previously served as President, Global Consumer Fragrances. He originally joined our Company in 1999 and has previously held positions of increasing responsibility, including sales, group country management, regional general management of fragrances, North America, and vice-president of Global Fine Fragrances and Beauty Care.

Gregory Yep has served as our Executive Vice President, Chief Research & Development, Global Integrated Solutions & Sustainability Officer since February 2021. From June 2016 to February 2021, he served as our Executive Vice President, Chief Research & Development and Sustainability Officer. From January 2015 to June 2016, Dr. Yep was Senior Vice President of Research, Development & Applications with The Kerry Group, a taste and nutrition company. Prior to The Kerry Group, Dr. Yep was Senior Vice President of R&D at PepsiCo, a multinational food, snack and beverage corporation, and was Global Vice President, Application Technologies at Givaudan Flavors and Fragrances, a multinational manufacturer of flavors, fragrances and active cosmetic ingredients. Earlier in his career, Dr. Yep was at McCormick & Company, a flavor, seasonings and spices company, where he held executive roles of increasing responsibility in food science.

ITEM 1A. RISK FACTORS.

Risk Factor Summary

The following summary highlights some of the principal risks that could adversely affect our business, financial condition or results of operations. This summary is not complete and the risks summarized below are not the only risks we face. These risks are discussed more fully further below in this section entitled "Risk Factors" in Item 1A. of this report. These risks include, but are not limited to, the following:

- Inflationary trends, including in the price of our input costs, such as raw materials, transportation and energy, could adversely affect our business and financial results in the short term and result in uncertainties in the long term.
- Supply chain disruptions, geopolitical developments, including the Russia-Ukraine conflict, or climate change events (including severe weather events) may adversely affect our suppliers or our procurement of raw materials, and thus may impact our business and financial results.
- If we are unable to successfully execute the next phase of our strategic transformation, it may have a material adverse effect on our business, results of operations and financial condition.
- The integration of the N&B Business may continue to present significant challenges, and we may not realize anticipated synergies and other benefits of the N&B Transaction.
- We have a substantial amount of indebtedness that could materially adversely affect our financial condition and our degree of leverage could adversely affect our credit ratings.
- If we fail to successfully enter into or close strategic transactions or divestments, or successfully manage acquisitions, collaborations, joint ventures or partnerships, it could adversely affect our business and growth opportunities.
- If we are unable to successfully market to our expanded and diverse customer base, our operating results and future growth may be adversely affected.
- Our business is highly competitive, and if we are unable to compete effectively, our sales and results of operations will suffer.
- Our success depends on attracting and retaining talented people within our business. Significant shortfalls in recruitment or retention could adversely affect our ability to compete and achieve our strategic goals.
- A significant portion of our sales is generated from a limited number of large multi-national customers, which are currently under competitive pressures that may affect the demand for our products and profitability.
- We may not successfully develop and introduce new products that meet our customers' needs, which may adversely affect our results of operations.
- Global health crises, such as the COVID-19 pandemic, have had an impact on our supply chain and could have a material impact on global operations, our customers and our suppliers, which could adversely impact our business and results of operations.
- Natural disasters, public health crises (such as the COVID-19 pandemic), international conflicts (such as the Russia-Ukraine conflict), geopolitical events, terrorist acts, labor strikes, political or economic crises (such as the uncertainty related to protracted U.S. federal debt ceiling negotiations), accidents and other events could adversely affect our business and financial results by disrupting development, manufacturing, distribution or sale of our products.
- A significant data breach or other disruption to our information technology systems could disrupt our operations, result in the loss of confidential information or personal data, and adversely impact our reputation, business or results of operations.
- We have made investments in and continue to expand our business into emerging markets, which exposes us to certain risks.
- The impact of currency fluctuation or devaluation in the international markets in which we operate may negatively affect our results of operations.
- International economic, political, legal, compliance and business factors could negatively affect our financial statements, operations and growth.
- Economic uncertainty, including increased inflation, may adversely affect demand for our products which may have a negative impact on our operating results and future growth.
- If we are unable to react in a timely and cost-effective manner to changes in consumer trends, such as increasing awareness of health and wellness, our results of operations and future growth may be adversely affected.
- We are subject to increasing customer, consumer, shareholder and regulatory focus on sustainability, which may result in additional costs in order to meet new requirements or integrate the N&B Business and Frutarom with our sustainability practices.
- Our performance may be adversely impacted if we are not successful in managing our inventory and/or working capital balances.
- Any impairment of our tangible or intangible long-lived assets, including goodwill, may adversely impact our profitability.
- Our funding obligations for our pension and postretirement plans could adversely affect our earnings and cash flows.
- The phase out of the London Interbank Offered Rate ("LIBOR") may impact the interest rates paid on our variable rate indebtedness and could cause our interest expense to increase.

- Our business may be negatively impacted as a result of the United Kingdom's departure from the European Union.
- If we are unable to comply with regulatory requirements and industry standards, including those regarding product safety, quality, efficacy and environmental impact, we could incur significant costs and suffer reputational harm which could adversely affect results of operations.
- Defects, quality issues (including product recalls), inadequate disclosure or misuse with respect to the products and capabilities could adversely affect our business, reputation and results of operations.
- Our results of operations may be negatively impacted by the outcome of uncertainties related to litigation.
- Failure to comply with environmental protection laws may cause us to close, relocate or operate one or more of our plants at reduced production levels, and expose us to civil or criminal liability, which could adversely affect our operating results and future growth.
- We could be adversely affected by violations, by us or our counterparties, of the U.S. Foreign Corrupt Practices Act, similar U.S. or foreign anti-bribery and anti-corruption laws and regulations, applicable sanctions laws and regulations in the jurisdictions in which we operate or ethical business practices and related laws and regulations.
- Our ability to compete effectively depends on our ability to protect our intellectual property rights.
- Changes in our tax rates, the adoption of new U.S. or international tax legislation, or changes in existing tax laws could expose us to additional tax liabilities that may affect our future results.
- The N&B Transaction could result in significant tax liability, and we may be obligated to indemnify DuPont for any such tax liability imposed on DuPont.
- If we fail to comply with data protection laws in the U.S. and abroad, we may be subject to fines, penalties and other costs.

Risk Factors

We routinely encounter and address risks in conducting our business. Some of these risks may cause our future results to be different - sometimes materially different - than we presently anticipate. Below are material risks we have identified that could adversely affect our business. How we react to material future developments, as well as how our competitors and customers react to those developments, could also affect our future results.

Risks Related to Our Business and Industry

Inflationary trends, including in the price of our input costs, such as raw materials, transportation and energy, could adversely affect our business and financial results in the short term and result in uncertainties in the long term.

The global economy experienced high rates of inflation in 2022, and such inflationary pressure is expected to generally continue in 2023 despite price decreases for certain materials and services that hit historical highs in 2022. As a result of the broader inflationary environment and supply chain disruptions we have experienced, and may continue to experience, volatility and increases in the price of input costs, such as certain raw materials, transportation and energy costs. We might also suffer from supply disruptions from supplier exits as higher costs may become unaffordable for certain suppliers. The significant spike in energy prices over the course of 2022, especially in Europe, has created cost pressures for us and may continue to impact our financial performance. In addition, central banks may continue to increase interest rates or conduct other monetary policies to counter inflation, which could negatively affect our borrowing costs and those of our customers and suppliers, as well as exchange rates and other macroeconomic factors.

If we are unable to increase the prices of our products to our customers to offset inflationary cost trends, or if we are unable to achieve cost savings to offset such cost increases, we could fail to meet our cost expectations, and our profits and operating results could be adversely affected. Our ability to price our products competitively to timely reflect higher input costs is critical to maintain and grow our sales. Increases in prices of our products to customers or the impact of the broader inflationary environment on our customers may lead to declines in demand and sales volumes. Further, we may not be able to accurately predict the volume impact of price increases, especially if our competitors are able to more successfully adjust to such input cost volatility. Increasing our prices to our customers could result in long-term sales declines or loss of market share if our customers find alternative suppliers or choose to reformulate their consumer products to rely less on our products, which could have an adverse long-term impact on our results of operations. Increased cost volatility trends may also impact the business and financial situation of our customer or suppliers, which could in turn affect the demand or supply, respectively, by such parties. Future inflationary and deflationary trends are beyond our control, and we may not be able to sufficiently mitigate any impact on our business and financial situation.

Supply chain disruptions, geopolitical developments, including the Russia-Ukraine conflict, or climate-change events (including severe weather events) may adversely affect our suppliers or our procurement of raw materials, and thus may impact our business and financial results.

In connection with our manufacturing of our products, we often rely on third party suppliers for raw materials. We use many different raw materials for our business, such as essential oils, extracts and concentrates derived from fruits, vegetables, flowers, woods and other botanicals, animal products, raw fruits, organic chemicals and petroleum-based chemicals, as well as, gelatin, glycols, cellulose processed grains, guar, locust bean gum, organic vegetable oils, peels, saccharides, seaweed, soybeans, and sugars and yeasts.

Supply chain disruptions, such as the ones related to the COVID-19 pandemic, may impair or delay our ability to obtain sufficient quantities of certain raw materials through our ordinary supply channels and cause us to incur higher costs by procuring raw materials from other sources in order to compensate for such delays or lack of availability.

In addition, our suppliers, similar to us, are subject to risks, inherent in agriculture, manufacturing and distribution on a global scale, including industrial accidents, environmental events, climate change, strikes and other labor disputes, disruptions in supply chain or information systems, disruption or loss of key research or manufacturing sites, product quality control, safety and environmental compliance issues, licensing requirements and other regulatory issues, as well as natural disasters, global or local health crises, international conflicts, terrorist acts, geopolitical developments, trade wars, and other external factors over which neither they nor we have control. These suppliers could also become insolvent or experience other financial distress.

If our suppliers are unable to supply us with sufficient quantities of ingredients and raw materials to meet our needs, we would need to seek alternative sources of such materials (which may result in higher transportation or procurement costs) or pursue our own production of such ingredients or direct acquisition of such raw materials. However, for certain of our ingredients and raw materials, we rely on a limited number of suppliers where there are not readily available alternatives. If we are unable to obtain or manufacture alternative sources of such ingredients or raw materials at a similar cost, we may seek to (i) reformulate our products and/or (ii) increase pricing to reflect the higher supply cost. To mitigate our sourcing risk, we maintain strategic stock levels for critical items. However, if we do not accurately estimate the amount of raw materials that will be used for the geographic region in which we will need these materials or competitively price our products, our margins could be adversely affected.

Geopolitical developments, such as the Russia-Ukraine conflict, could adversely impact, among other things, our raw material, energy and transportation costs, as well as certain of our suppliers and local markets, global and local macroeconomic conditions, and cause further supply chain disruptions. As the Russia-Ukraine conflict has prolonged, it continues to impact our sourcing of certain raw materials for future years, and we continue to look for alternative suppliers or adjust the types of raw materials used in our products.

At the same time, climate-change related disruptions, like the February 2021 winter storm in Texas, may affect the availability, quality and pricing of raw materials. There is growing evidence that carbon dioxide and other greenhouse gases in the atmosphere may have an adverse impact on global temperatures, weather and precipitation patterns, growing and harvesting conditions (both on land and in the sea), and the frequency and severity of extreme weather and natural disasters, such as floods, wildfires, droughts and water scarcity. To the extent such climate change effects have a negative impact on crop size and quality, supply chain, energy or transportation costs, it could impact the availability, quality and pricing of affected raw materials. Climate related policies and energy production restrictions and pricing may exacerbate such negative impacts.

More generally, as we source many of our raw materials globally to help ensure quality control or to mitigate supply chain disruptions, we are subject to additional risks related to the increases in energy or transportation costs. Energy prices are in turn subject to significant volatility caused by, among other things, market fluctuations, supply and demand changes, currency fluctuations, production and transportation disruptions, and other world events, as well as geopolitical developments and climate change related conditions discussed above.

If we are not able to successfully mitigate such supply chain and climate-change related risks, we could experience disruptions in production or increased costs, which may result in decrease in our gross margin or reduced sales, and have a material adverse effect on our business, results of operations and financial condition.

If we are unable to successfully execute the next phase of our strategic transformation, it may have a material adverse effect on our business, results of operations and financial condition.

In December 2022, we announced our new strategic and financial vision previewing a refreshed strategic plan and new operating model, which among other things, consists of a renewed growth-focus strategy, enhanced cost & productivity initiatives, a redesigned operating model, a reaffirmation of our commitment to our portfolio optimization initiatives and a plan to evolve our Board in line with best-in-class governance standards, as well as certain changes to our Executive Leadership Team. Implementing such changes can be complex, costly and time-consuming and may also result in unanticipated issues, such as additional expenses, competitive responses, employee turnover or impact on our commercial relationships. Even if such initiatives are implemented successfully, the full benefits may not be realized or may not be realized within the desired timeframe. The failure to meet the challenges involved in implementing our strategic transformation could result in a material adverse impact on our business, results of operations and financial condition.

The integration of the N&B Business may continue to present significant challenges, and we may not realize anticipated synergies and other benefits of the N&B Transaction.

The combination of large, diverse and independent businesses is complex, costly and time-consuming. The combination with the N&B Business may also result in material unanticipated problems, expenses, liabilities, competitive responses, employee turnover and loss of customer and other business relationships. In addition, even if the operations of the N&B Business are integrated successfully, the full benefits of the transaction may not be realized, including, among others, the synergies, cost savings or revenue growth that are expected. These benefits may not be achieved within the anticipated time frame or at all.

The difficulties of integration or realizing the full benefits of the N&B Transaction include, among others:

- the diversion of management's attention to integration matters;
- integrating operations and systems, including communications systems, administrative and information technology infrastructure and financial reporting and internal control systems, some of which may prove to be incompatible;
- conforming standards, controls, procedures and accounting and other policies, business cultures and compensation structures between the businesses;
- integrating employees and attracting and retaining key personnel, including talent;
- retaining relationships with existing or new customers and suppliers;
- integrating and managing the expanded operations of a significantly larger and more complex company;
- liabilities that are larger than expected or potential unknown liabilities, adverse consequences and unforeseen increased expenses associated with the transaction;
- restrictions until February 2023 that may limit our ability to pursue certain strategic transactions, including issuing IFF common stock for acquisitions and equity capital market transactions, or disposing of certain businesses that would otherwise increase the value of our business, if such transaction(s) could cause certain aspects of the N&B Transaction and certain DuPont historic transactions to fail to qualify as tax-free transactions;
- successfully exiting transitional services agreement entered into with DuPont in connection with the N&B Transaction without impacting the continuity or quality of such services or incurring materially increased costs; and
- our ability to negotiate terms that are as favorable as those DuPont had received, as we replace or renew contracts following the N&B Transaction and the loss of the DuPont brand recognition for the N&B Business.

The failure to meet the challenges involved in integrating the businesses and to realize the anticipated benefits of the transaction could result in a material adverse impact on our business and results of operations.

We have a substantial amount of indebtedness that could materially adversely affect our financial condition and our degree of leverage could adversely affect our credit ratings.

As of December 31, 2022, our total debt was \$10.970 billion. Despite our level of indebtedness, we expect to continue to have the ability to borrow additional debt. There may be circumstances in which required payments of principal and/or interest on our debt could adversely affect our cash flows, our operating results or our ability to return capital to our shareholders.

Furthermore, our degree of leverage could adversely affect our future credit ratings. If we are unable to maintain or improve our current investment grade rating or improve our leverage, it could adversely affect our future cost of funding, liquidity and access to capital markets. On October 13, 2022, S&P Global Ratings downgraded our Local Currency LT credit rating from “BBB” to “BBB-”. The Company does not have any rating downgrade triggers that would accelerate the maturity dates of its senior unsecured debt. However, any downgrade in our credit rating may, depending on the extent of such downgrade, negatively impact our ability to raise additional debt capital, our liquidity and capital position, and may increase our cost of borrowing for new capital raises. In addition, our existing Amended Revolving Credit Facility and Term Loans have pricing grids that are based on credit rating, such that our cost of borrowing may increase as our credit rating decreases. In addition, our current level of leverage could increase our vulnerability to sustained, adverse macroeconomic weakness, limit our ability to obtain further financing, decrease our flexibility in responding to or preparing for changes in the industry in which we operate and our ability to pursue certain operational and strategic opportunities, including large acquisitions. Our level of indebtedness, as well as our failure to comply with covenants under our debt instruments, could adversely affect our business, results of operation and financial condition or our ability to return capital to our shareholders and additional debt instruments may subject us to additional covenants.

If we fail to successfully enter into or close strategic transactions or divestments, or successfully manage acquisitions, collaborations, joint ventures or partnerships, it could adversely affect our business and growth opportunities.

From time to time, including as a part of our ongoing strategic transformation and our portfolio optimization strategy as discussed above, we may enter into strategic transactions or we may divest certain non-core assets. For instance, during the third quarter of 2022, we completed the divestiture of our Microbial Control business and during the fourth quarter of 2022, we announced that we entered into an agreement for the sale our Savory Solutions business, which is expected to close in the second quarter of 2023, subject to customary closing conditions. Any failure to complete or potential delays in closing any such transaction could adversely affect the development of our portfolio optimization strategy as well as our financial condition.

We also evaluate and enter into collaborations, joint ventures or partnerships from time to time to enhance our research and development efforts or expand our product portfolios and technology. The process of establishing and maintaining collaborative relationships is difficult and time-consuming to negotiate, document and implement. We may not be able to successfully negotiate such arrangements or the terms of the arrangements may not be as favorable as anticipated. Furthermore, our ability to generate revenues from such collaborations will depend on our partners’ abilities and efforts to successfully perform the functions assigned to them in these arrangements and these collaborations may not lead to development or commercialization of products in the most efficient manner, or at all. In addition, from time to time, we have acquired, and we may acquire, only a majority interest in companies and provided or may provide earnouts for the former owners along with the ability, at our option, or obligation, at the former owners’ option, to purchase the minority interests at a future date at an established price. These investments may have additional risks and may not be as efficient as other operations as we may have fiduciary or contractual obligations to the minority investors and may rely on former owners for the continuing operation of the acquired business. If we are unable to successfully establish and manage these collaborative relationships and majority investments it could adversely affect our future growth.

In addition, from time to time, we evaluate acquisition candidates that may strategically fit our business and/or growth objectives. If we are unable to successfully integrate and develop acquired businesses, we could fail to achieve anticipated synergies and cost savings, including any expected increase in revenues and operating results, which could have a material adverse effect on our financial results. Furthermore, even if successfully integrated, the acquisition target may fail to further the Company’s business strategy as anticipated, expose the Company to increased competition or other challenges with respect to the Company’s products or geographic markets, and expose the Company to additional liabilities associated with the acquired business, technology or other asset or arrangement. We may also incur asset impairment charges related to acquisitions if we fail to maintain and integrate the acquired businesses and such impairments charges would reduce our earnings.

If we are unable to successfully market to our expanded and diverse customer base, our operating results and future growth may be adversely affected.

As a result of our acquisition of Frutarom and the N&B Transaction, the number of our customers significantly increased and became more diverse. Our historical customer base was primarily comprised of large and medium-sized food, beverage and consumer products companies. With the completion of the N&B Transaction, our customer base has further increased significantly and, based on 2022 sales, we had approximately 40,000 customers, approximately 58% of which are small and mid-sized companies. This substantial increase in and diversity of our customer base has required us and may continue to require us to adjust, among other things, our product development, manufacturing, distribution, marketing, customer relationship and sales strategy as well as adapt corporate, information technology, finance and administrative infrastructures to support different go-to-market models. We may experience difficulty managing the growth of a portfolio of customers that is more diverse in terms of its geographical presence as well as with respect to the types of services they require and the infrastructure required to deliver our products. If we are unable to successfully gain market share or maintain our relationships with these customers, our future growth could be adversely affected.

Our business is highly competitive, and if we are unable to compete effectively our sales and results of operations will suffer.

The markets in which we compete are highly competitive. We face vigorous competition from companies throughout the world, including multi-national and specialized companies active in flavors, fragrances, enzymes, pharmaceutical excipients, nutrition and specialty ingredients, as well as consumer product companies which may develop their own competing products. For instance, in the flavors industry, we face increasing competition from ingredient suppliers that have expanded their portfolios to include flavor offerings. Some of our competitors specialize in one or more of our product sub-segments, while others participate in many of our product sub-segments. In addition, some of our global competitors may have more resources than we do or may have proprietary products that could permit them to respond to changing business and economic conditions more effectively than we can. Moreover, there has been increased consolidation among our competitors, and such consolidation or partnerships among our competitors may exacerbate these risks.

As we continue to enter into adjacent markets, such as cosmetic ingredients, functional foods, specialty fine ingredients and nutrition products, we may face greater competition-related risks in these markets than with our other businesses. For example, the specialty fine ingredients market is more price sensitive than the flavors market and is characterized by relatively lower profit margins. Some fine ingredients products are less unique and more replaceable than competitors' products. There is no assurance that operating margins will remain at current levels, which could substantially impact our business, operating results and financial condition.

Competition in our business is based, among other things, on innovation, product quality, regulatory compliance, pricing, quality of customer service, the support provided by marketing and application groups, and understanding of consumers. It is difficult for us to predict the timing, scale and success of our competitors' actions in these areas. In particular, the discovery and development of new products, protection of our intellectual property and development and retention of key employees are critical to our ability to effectively compete in our business. Advancement in technologies have also enhanced the ability of our competitors to develop substitutable products. Increased competition by existing or future competitors, including aggressive price competition, could result in the loss of sales, reduced pricing and margin pressure and could adversely impact our sales and profitability.

Failing to identify and make capital expenditures to achieve growth opportunities, being unable to make new concepts scalable, or failing to effectively and timely reinvest in our business operations, could result in the loss of competitive position and adversely affect our financial condition or results of operations.

Our success depends on attracting and retaining talented people within our business. Significant shortfalls in recruitment or retention could adversely affect our ability to compete and achieve our strategic goals.

Attracting, developing, and retaining talented employees is essential to the successful delivery of our products and has become more difficult and costly in the current labor market. Furthermore, as we continue to focus on innovation, our need for scientists and other professionals will increase and may result in increased labor costs. The ability to attract and retain talented employees is critical in the development of new products and technologies which is an integral component of our growth strategy.

Competition for employees can be intense and if we are unable to successfully integrate, motivate and reward our employees, we may not be able to retain them. If we are unable to retain our employees or attract new employees in the future, our ability to effectively compete with our competitors and to grow our business could be adversely affected.

In addition, we have announced, as part of our strategic transformation initiatives, certain headcount reductions to re-align our workforce to match strategic and financial objectives and optimize resources for long-term growth. Such reductions could lead to increased uncertainty, attrition or lower morale amongst those employees who are not directly affected by the headcount reductions as those reductions are being implemented, which may result in decreased productivity or could otherwise impact our results of operation.

A significant portion of our sales is generated from a limited number of large multi-national customers, which are currently under competitive pressures that may affect the demand for our products and profitability.

During 2022, our 25 largest customers, a majority of which were multi-national consumer products companies, collectively accounted for 28% of our sales in the aggregate. Large multi-national customers' market share, especially in the consumer product industry, continues to be pressured by new smaller companies and specialty players that cater to or are more adept at adjusting to the latest consumer trends, including towards natural products and clean labels, changes in the retail landscape (including e-commerce and consolidation), and increased competition from private labels, which have resulted and may continue to result in decreased demand for our products by such multi-national customers and volume erosion, especially in our Nourish business. Furthermore, consolidations amongst our customers have resulted in larger and more sophisticated customers with greater buying power and additional negotiating strength. If such trends continue, our sales could be adversely impacted if we are not able to replace these sales.

In addition, large multi-national customers and, increasingly middle market customers, continue to utilize "core lists" of suppliers to improve margins and profitability in the flavors and fragrance segments. Typically, these "core list" suppliers are then given priority for new or modified products. Recently, these customers are making inclusion on their "core lists" contingent upon a supplier providing more favorable terms, including rebates, which could adversely affect our margins. We must either offer competitive cost-in-use solutions to secure and maintain inclusion on these "core lists" or seek to manage the relationship without being on the "core-list." If we choose not to pursue "core-list" status due to profitability concerns or if we are unable to obtain "core-list" status, our ability to maintain our share of these customers' future purchases could be adversely affected and therefore our future results of operations.

We may not successfully develop and introduce new products that meet our customers' needs, which may adversely affect our results of operations.

Our ability to differentiate ourselves and deliver growth largely depends on our ability to successfully develop and introduce new products and product improvements that meet our customers' needs, and ultimately appeal to consumers. Innovation is a key element of our ability to develop and introduce new products. We cannot be certain that we will be successful in achieving our innovation goals, such as the development of new molecules, new and expanded delivery systems and other technologies. In 2022, we spent approximately 5% of our sales on research and development, and as part of our new strategic vision announced in December 2022, we expect to continue investment in research and development and innovation initiatives. This investment level may vary in the future if available resources to invest in research and development are limited due to our ongoing integration and restructuring efforts or from adverse macroeconomic or supply chain factors. We also may need to devote more resources to enhancing our existing product portfolios. Our research and development investments may only generate future revenues to the extent that we are able to develop products that meet our customers' specifications, are at an acceptable cost and achieve acceptance by the targeted consumer market. Furthermore, there may be significant lag times from the time we incur research and development costs to the time that these research and development costs may result in increased revenue.

Consequently, even when we "win" a project, our ability to generate revenues as a result of these investments is subject to numerous customer, economic and other risks that are outside of our control, including delays by our customers in the launch of a new product, the level of promotional support for the launch, poor performance of our third-party vendors, anticipated sales by our customers not being realized or changes in market preferences or demands, or disruptive innovations by competitors.

Global health crises, such as the COVID-19 pandemic, have had an impact on our supply chain and could have a material impact on global operations, our customers and our suppliers, which could adversely impact our business and results of operations.

The continued evolution of COVID-19 and its variants, as well as periodic spikes in infection rates, local outbreaks at our facilities, or supplier, customer or vendor facilities, in spite of safety measures or vaccinations, could cause disruptions to our operations or those of our suppliers, customers or vendors. As a result of the pandemic's impact on the global supply chain, we have experienced, and may continue to experience, increased costs, delays or limited availability related to raw materials, strain on shipping and transportation resources, and higher energy prices, which have negatively impacted and may continue to negatively impact, our margins and operating results. We have also experienced and may experience in the future, changes in the demand and volume for certain of our products, including due to consumption or stocking behavior changes related to the COVID-19 pandemic. Additionally, as new variants of the virus appear, especially variants that are more easily spread, cause more serious outcomes, or are resistant to existing vaccines, new health orders and safety protocols could further impact our on-site operations and our ability to manufacture, ship or deliver products and solutions to customers.

Although we do not currently anticipate any impairment charges related to COVID-19, the continuing effects of a prolonged pandemic could result in increased risks to us of asset write-downs and impairments, including, but not limited to, property, plant and equipment, goodwill and other intangibles, and equity investments.

Any of these events or factors could potentially result in a material adverse impact on our business and results of operations.

Natural disasters, public health crises (such as the COVID-19 pandemic), international conflicts (such as the Russia-Ukraine conflict), geopolitical events, terrorist acts, labor strikes, political or economic crises (such as the uncertainty related to protracted U.S. federal debt ceiling negotiations), accidents and other events could adversely affect our business and financial results, including by disrupting development, manufacturing, distribution or sale of our products.

As a company engaged in the global development, manufacture and distribution of products, we are subject to the risks inherent in such activities, including industrial accidents, environmental events, strikes and other labor disputes, product quality control issues, safety, licensing requirements and other regulatory issues, as well as natural disasters, public health crises, such as pandemics or epidemics, international conflicts, geopolitical events, terrorist acts, political or economic crises (such as the uncertainty related to protracted U.S. federal debt ceiling negotiations) and other external factors over which we have no control. For instance, the Russia-Ukraine conflict has adversely impacted and could continue to impact, among other things, certain of our local markets and suppliers, global and local macroeconomic conditions, foreign exchange rates and financial markets, raw material, energy and transportation costs, and cause further supply chain disruptions. We maintain operations in both Russia and Ukraine and export products to customers in Russia and Ukraine from operations outside the region. In response to the events in Ukraine, the Company has limited the production and supply of ingredients in and to Russia to only those that meet the essential needs of people, including food, hygiene and medicine. As a result of changes and uncertainties arising out of the Russia-Ukraine conflict, our operating performance in Russia has declined in 2022 and may not reverse in the near future.

While we operate research and development, manufacturing and distribution facilities throughout the world, many of these facilities are extremely specialized and certain of our research and development or creative laboratories facilities are uniquely situated to support our research and development efforts while certain of our manufacturing facilities are the sole location where a specific ingredient or product is produced. If our research and development activities or the manufacturing of ingredients or products were disrupted, the cost of relocating or replacing these activities or reformulating these ingredients or products may be substantial, which could result in production or development delays or otherwise have an adverse effect on our margins, operating results and future growth.

A significant data breach or other disruption to our information technology systems could disrupt our operations, result in the loss of confidential information or personal data, and adversely impact our reputation, business or results of operations.

We rely on information technology systems, including some managed by third-party providers, to conduct business and to support our business processes, including those relating to product formulas, product development, manufacturing, sales, order and invoice processing, production, distribution, internal communications and communications with third parties throughout the world, processing transactions, summarizing and reporting results of operations, complying with regulatory, tax or legal requirements, and collecting and storing customer, supplier, employee and other stakeholder information.

To address the risks to our information technology systems and the associated costs, we maintain an information security program that includes updating technology and information security policies and controls, cybersecurity insurance, cybersecurity governance and compliance, employee/consultant awareness training, table-top exercises, logging and monitoring and routine testing of our information technology systems. We believe that these preventative actions provide adequate measures of protection against information security breaches/incidents and generally reduce our cybersecurity risks, however, cybersecurity incidents, data breaches and operational disruptions are constantly evolving, becoming more sophisticated and conducted by groups and individuals with a wide range of expertise and motives, including foreign governments, cyber terrorists, cyber criminals, malicious employees and other insiders and outsiders. Additionally, continued geopolitical turmoil, including the ongoing conflict between Russia and Ukraine, heightened the risk of cyber incidents. We and our third-party providers are subject to the risks posed by such incidents, which can take many forms, including code anomalies, “Acts of God,” data leakage, hardware or software failures, human errors, cyber extortion, password theft or introduction of viruses, malware and ransomware, including through phishing emails.

A disruption to our information technology systems could result in the loss of confidential business, customer, supplier or employee information, litigation or fines, and may require substantial investigations, repairs or replacements or impact our ability to summarize and report financial results in a timely manner, resulting in significant financial, legal and relational costs and potentially harming our reputation and adversely impacting our operations, customer service and results of operations. As we complete integration of N&B’s and Frutarom’s systems with IFF’s systems and prepare for the announced divestitures, we reduce our risk profile. Additionally, an information security or data breach could require us to devote significant management and financial resources to address the problems created, and, as a result of the private rights of action provided for under the EU’s General Data Protection Regulation (the “GDPR”), the California Consumer Privacy Act (the “CCPA”) and other laws relating to data protection and privacy in other jurisdictions, in the event of such breaches, additional private litigation against us may result. These types of adverse impacts could also occur in the event the confidentiality, integrity or availability of company, customer, supplier or employee information are compromised due to a data loss by us or a trusted third party. We or the third parties with which we share information may not discover any such incidents and/or loss of information for a significant period of time after the incident occurs. In addition, our hybrid and remote work arrangements could introduce operational risk, including cybersecurity and IT systems management risks.

We have experienced threats to our data and our systems and although we have not experienced a material incident to date, there can be no assurance that these measures will prevent or limit the impact of a future incident. Additionally, while we have insurance coverage designed to address certain aspects of cyber risks in place, such insurance coverage may be insufficient to cover all losses or all types of claims that may arise.

We have made investments in and continue to expand our business into emerging markets, which exposes us to certain risks.

As part of our growth strategy, we have increased our presence in emerging markets by expanding our manufacturing presence, sales organization and product offerings in these markets, and we expect to continue to expand our business in these markets as part of our new strategic vision announced in December 2022. With our acquisition of Frutarom in 2018 and the N&B Transaction, each of which also had a significant presence in emerging markets, our business in these markets has meaningfully grown. In addition to the currency and international risks described below, our operations in these markets may be subject to a variety of other risks. Emerging markets typically have a consumer base with limited or fluctuating disposable income and customer demand in these markets may fluctuate accordingly. As a result, a decrease in customer demand in emerging markets may have an adverse effect on our ability to execute our growth strategy.

Further, there is no assurance that our existing products, variants of our existing products or new products that we make, manufacture, distribute or sell will be accepted or be successful in any particular developing or emerging market, due to local or global competition, product price, cultural differences, consumer preferences or otherwise. In addition, emerging markets may have weak legal systems which may affect our ability to enforce our intellectual property and contractual rights, exchange controls, unstable governments and privatization or other government actions that may affect taxes, subsidies and incentive programs and the flow of goods and currency. In conducting our business, we move products from one country to another and may provide services in one country from a subsidiary located in another country. Accordingly, we are vulnerable to abrupt changes in trade, customs and tax regimes in these markets. If we are unable to expand our business in developing and emerging markets, effectively operate, or manage the risks associated with operating in these markets, or achieve the return on capital we expect from our investments in these markets, our operating results and future growth could be adversely affected.

The impact of currency fluctuation or devaluation in the international markets in which we operate may negatively affect our results of operations.

We have significant operations outside the U.S., the results of which are reported in the local currency and then translated into U.S. dollars at applicable exchange rates for inclusion in our consolidated financial statements. The exchange rates between these currencies and the U.S. dollar have fluctuated and will continue to do so in the future, with the fluctuations being particularly pronounced in certain emerging markets. Changes in exchange rates between these local currencies and the U.S. dollar will affect the recorded levels of sales, profitability, assets and/or liabilities. Along with other macroeconomic uncertainty we are experiencing such as a highly inflationary global environment and supply chain disruptions discussed elsewhere in these risk factors, we have experienced and continue to expect volatility in global foreign currency exchange rates. The expected continuing increase of interest rates by the Federal Reserve Bank to counter inflationary trends may further impact such exchange rates. Further volatility or unfavorable movements in currency exchange rates may adversely impact our financial condition, cash flows or liquidity. Although we employ a variety of techniques to mitigate the impact of exchange rate fluctuations, including sourcing strategies and a limited number of foreign currency hedging activities, we cannot guarantee that such hedging and risk management strategies will be effective, and our results of operations could be adversely affected.

International economic, political, legal, compliance and business factors could negatively affect our financial statements, operations and growth.

We operate on a global basis, with manufacturing and sales facilities in or supply arrangements with companies based in the U.S., Europe, Africa, the Middle East, Latin America, and Greater Asia. During 2022, approximately 71% of our combined net sales were to customers outside the U.S. and we intend to continue expansion of our international operations. As a result, our business is increasingly exposed to risks inherent in international operations. These risks, which can vary substantially by location, include the following:

- governmental laws, regulations and policies adopted to manage national economic and macroeconomic conditions, such as increases in taxes, austerity measures that may impact consumer spending, monetary policies that may impact inflation rates, employment regulations, currency fluctuations or controls and sustainability of resources;
- changes in environmental, health and safety permits or regulations, such as regulations related to biodiversity or the continued implementation and evolution of the European Union's REACH regulations and similar regulations that are being evaluated and adopted in other markets, or the ban on microplastics proposed by European Commission and the burdens and costs of our compliance with such regulations which may differ significantly across jurisdictions;
- increased product labeling and ingredient prohibitions in specific markets that may impact consumer preferences, products costs and/or customer acceptance;
- the imposition of or changes in customs, tariffs, quotas, trade barriers, other trade protection measures, import or export licensing requirements, and sanctions on trade with certain countries, imposed by the U.S. or other countries, which could adversely affect our cost or ability to import raw materials or export our products to surrounding markets;
- risks and costs arising from our ability to cater to local demand and customer preferences, language and cultural differences;
- changes in the laws and policies that govern foreign investment in the countries in which we operate, including the risk of expropriation or nationalization, the costs and ability to repatriate the profit that we generate in these countries;
- risks and costs associated with complying with anti-money laundering and counter-terrorism financing laws;
- risks and costs associated with complying with the U.S. Foreign Corrupt Practices Act, similar U.S. or foreign anti-bribery and anti-corruption laws and regulations, applicable sanctions laws and regulations in the jurisdictions in which we operate or ethical business practices and related laws and regulations;
- risks and costs associated with political and economic instability, bribery and corruption, anti-American sentiment, and social and ethnic unrest in the countries in which we operate;
- difficulty in recruiting and retaining trained local personnel;
- natural disasters, global or local health crisis, pandemics (such as the COVID-19 pandemic), epidemics or international conflicts (such as the Russia-Ukraine conflict) or geopolitical tension (such as deteriorating U.S.-China relations), including terrorist acts, political crisis, national and regional labor strikes in the countries in which we operate, which could endanger our personnel, interrupt our operations or adversely affect the demand for our products, the results of certain regions or our global supply chain; or
- the risks of operating in developing or emerging markets in which there are significant uncertainties regarding the interpretation, application and enforceability of laws and regulations and the enforceability of contract rights and intellectual property rights.

The occurrence of any one or more of these factors could increase our costs and adversely affect our results of operations.

Economic uncertainty, including increased inflation, may adversely affect demand for our products which may have a negative impact on our operating results and future growth.

Many of our products are ingredients in a wide assortment of global consumer products throughout the world. Historically, demand for consumer products using our products, was stimulated and broadened by changing social habits and consumer needs, population growth, an expanding global middle-class and general economic growth, especially in emerging markets.

Changes in the global, regional or local economic conditions have, and may in the near future, adversely impact demand for consumer products at a regional or global level. Such parameters include, but are not limited to, increased inflation, unemployment and underemployment, salaries and wage rates stagnation, low growth rates, and ongoing impacts of the COVID-19 pandemic. Reduced consumer spending may cause changes in our customer orders including reduced demand for our products or order cancellations. The timing of placing of orders and the amounts of these orders are generally at our customers' discretion. Customers may cancel, reduce or postpone orders with us on relatively short notice. Significant cancellations, reductions or delays in orders by customers could affect our results of operation.

If we are unable to react in a timely and cost-effective manner to changes in consumer trends, such as increasing awareness of health and wellness our results of operations and future growth may be adversely affected.

We must continually anticipate and react, in a timely and cost-effective manner, to changes in consumer preferences and demands, including changes in demand driven by increasing awareness of health and wellness, demands for transparency or cleaner labels with respect to product ingredients by consumers and regulators, and attitudes towards the impact of biotechnology advances such as gene editing and mapping. Consumers, especially in developed economies such as the U.S. and Western Europe, are rapidly shifting away from products containing artificial ingredients to all-natural, healthier alternatives. In addition, there has been a growing demand by consumers, non-governmental organizations and, to a lesser extent, governmental agencies to provide more transparency in product labeling and our customers have been taking steps to address this demand, including by voluntarily providing product-specific ingredients disclosure. These two trends could affect the types and volumes of our ingredients and compounds that our customers include in their consumer product offerings and, therefore, affect the demand for our products. If we are unable to react to or anticipate these trends in a timely and cost-effective manner, our results of operations and future growth may be adversely affected.

We are subject to increasing customer, consumer, shareholder and regulatory focus on sustainability, which may result in additional costs in order to meet new requirements or integrate the N&B Business and Frutarom with our sustainability practices.

Federal, state, local and foreign governments, our customers, consumers and shareholders are becoming increasingly sensitive to environmental and other sustainability issues. In response, we have committed to a sustainability strategy to better understand the opportunities and risks in our sustainable efforts.

The increased focus on sustainability may result in new regulations and customer requirements that could affect us. These could cause us to incur additional direct costs or to make changes to our operations in order to comply with any new regulations and customer requirements. We could also lose revenue if our customers divert business from us because we have not complied with their sustainability requirements or if we are not successful in integrating N&B Business' and Frutarom's sustainability metrics. Increased shareholder activism with respect to sustainability or other governance issues or management concerns could also lead to increased costs and disruption to operations. These potential costs, changes and loss of revenue could have a material adverse effect on our business, results of operations and financial condition.

Our performance may be adversely impacted if we are not successful in managing our inventory and/or working capital balances.

We evaluate our inventory balances of materials based on shelf life, expected sourcing levels, known uses and anticipated demand based on forecasted customer order activity and changes in our product/sales mix. Efficient inventory management is a key component of our business success, financial returns and profitability. To be successful, we must maintain sufficient inventory levels and an appropriate product/sales mix to meet our customers' demands, without allowing those levels to increase to such an extent that the costs associated with storing and holding other inventory adversely impact our financial results. If our buying decisions do not accurately predict sourcing levels, customer trends or our expectations about customer needs are inaccurate, we may have to take unanticipated markdowns or charges to dispose of the excess or obsolete inventory, which can adversely impact our financial results. Current supply-chain related issues could also lead to raw material shortages and inventory depletion, which may adversely affect our operations. See *"—Supply chain disruptions, geopolitical developments, including the Russia-Ukraine conflict or climate-change events (including severe weather events) may adversely affect our suppliers or our procurement of raw materials, and thus may impact our business and financial results."* Additionally, we believe excess inventory levels of raw materials with a short shelf life in our manufacturing facilities subjects us to the risk of increased inventory shrinkage. If we are not successful in managing our inventory balances and shrinkage, our results of and cash flows from operations may be negatively affected.

We sell certain accounts receivable on a non-recourse basis to unrelated financial institutions under “factoring” agreements, some of which are sponsored by certain customers. The cost of participating in these programs was immaterial to our results in all periods. Should we choose not to participate, or if these programs were no longer available, it could reduce our cash flows from operations in the period in which the arrangement ends.

Any impairment of our tangible or intangible long-lived assets, including goodwill, may adversely impact our profitability.

A significant portion of our assets consists of long-lived assets, including tangible assets such as our manufacturing facilities, and intangible assets, including goodwill and customer relationships.

As a result of our recent acquisitions, including the acquisition of Frutarom and the N&B Transaction, as of December 31, 2022, we had recorded approximately \$22.437 billion of intangible assets and goodwill, including \$4.289 billion of goodwill associated with the acquisition of Frutarom and \$11.817 billion of goodwill associated with the merger with the N&B Business. Our results of operations and financial position in future periods could be negatively impacted should future impairments of our long-lived assets, including intangible assets or goodwill occur.

During the year ended December 31, 2022, we recorded a goodwill impairment charge of \$2.250 billion, as well as an impairment charge of \$120 million allocated on a pro rata basis to intangible assets and property, plant and equipment in the amounts of approximately \$92 million and \$28 million, respectively, in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income. Refer to Part II, Item 7 and Note 1, Note 5 and Note 6 to the Consolidated Financial Statements for additional information.

At least annually, we assess both goodwill and indefinite-lived intangible assets for impairment. We test for impairment by comparing the estimated fair value of a reporting unit with its carrying amount. If the carrying amount of a reporting unit exceeds its estimated fair value, we record an impairment charge based on the difference of the two. Intangible assets with finite lives are also tested for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Such events and changes in circumstances could include a sustained decrease in our market capitalization, increased competition or unexpected loss of market share, increased input costs beyond projections (for example due to regulatory or industry changes), our inability to recognize the anticipated benefits of acquisitions, unexpected business disruptions (for example due to a natural disaster, public health crises, such as pandemics or epidemics or loss of a customer, supplier, or other significant business relationship), acts by governments and courts, operating results falling short of projections, or significant adverse changes in the markets in which we operate. For example, in the third quarter of 2022, it was determined that goodwill impairment triggering events occurred for the Nourish, Health & Biosciences and Pharma Solutions reporting units. The primary indicators that were deemed to be triggering events in the quarter for the reporting units were declines in projections across various reporting units and ongoing adverse macroeconomic impacts such as inflation, increases in interest rates and unfavorable effects from exchange rates. As a result of the triggering events, we assessed the fair value of the reporting units by using a discounted cash flow method at a rate of return that reflects the relative risk of the projected future cash flows of each reporting unit, as well as a terminal value. We determined that the fair value of the Nourish and Pharma Solutions reporting units exceeded their carrying value, and determined that there was no impairment of goodwill relating to these reporting units. We determined that the carrying value of the Health & Biosciences reporting unit exceeded its fair value and recorded a goodwill impairment charge of \$2.250 billion in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022.

Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions, estimates and market factors. Estimating the fair value of reporting units requires us to make assumptions and estimates regarding our business performance, future plans, future annual net cash flows, income tax considerations, discount rates and growth rates based on industry, economic, regulatory conditions and other market factors. Moreover, management will make significant accounting judgments and estimates for the application of acquisition accounting under GAAP, and the underlying valuation models. IFF’s business, operating results and financial condition could be materially and adversely impacted in future periods if IFF’s accounting judgments and estimates related to these models prove to be inaccurate.

To the extent any of our acquisitions, including the acquisitions of Frutarom and the N&B Business, do not perform as anticipated and our underlying assumptions and estimates related to their fair value determination are not met, whether due to internal or external factors, the value of goodwill and other long-lived assets may be negatively affected and we may be required to record impairment charges.

Our funding obligations for our pension and postretirement plans could adversely affect our earnings and cash flows.

The funding obligations for our pension plans are impacted by the performance of the financial markets, particularly the equity markets and interest rates. Funding obligations are determined under government regulations and are measured each year based on the value of assets and liabilities on a specific date. If the financial markets do not provide the long-term returns that are expected under the governmental funding calculations, we could be required to make larger contributions. The equity markets can be very volatile, and therefore our estimate of future contribution requirements can change dramatically in relatively short periods of time. Similarly, changes in interest rates and legislation enacted by governmental authorities can impact the timing and amounts of contribution requirements. An adverse change in the funded status of the plans could significantly increase our required contributions in the future and adversely impact our liquidity.

Assumptions used in determining projected benefit obligations and the fair value of plan assets for our pension and other postretirement benefit plans are determined by us in consultation with outside consultants and advisors. In the event that we determine that changes are warranted in the assumptions used, such as the discount rate, expected long-term rate of return on assets, or expected health care costs, our future pension and postretirement benefit expenses could increase or decrease. Due to changing market conditions or changes in the participant population, the assumptions that we use may differ from actual results, which could have a significant impact on our pension and postretirement liabilities and related costs and funding requirements.

The phase out of the London Interbank Offered Rate (“LIBOR”) may impact the interest rates paid on our variable rate indebtedness and could cause our interest expense to increase.

In 2017, the United Kingdom’s Financial Conduct Authority (the “FCA”), which regulates LIBOR, announced that it intends to phase out LIBOR by the end of 2021. It was unclear at that time whether or not LIBOR would cease to exist, if new methods of calculating LIBOR would be established such that it continues to exist after 2021 or if replacement conventions would be developed. In March 2021, the FCA confirmed that publication of all of the LIBOR settings for Euro, Sterling and Swiss Franc and some of the LIBOR settings for Japanese Yen and US dollars ceased in December 2021 and the remainder of the LIBOR settings for US dollars will cease in June 2023. In response to the expected phase out of LIBOR, in March 2022, Congress passed the LIBOR Act to provide a uniform solution for replacing LIBOR references in existing contracts that do not supply a fallback provision identifying an alternative benchmark rate.

To identify a successor rate for LIBOR, financial regulators in various countries, including the United States, the United Kingdom, the European Union and Switzerland, have formed working groups with the aim of recommending alternatives to LIBOR denominated in their local currencies. Some of the financial regulators have identified the Secured Overnight Financing Rate (“SOFR”) as their preferred replacement rate for LIBOR. For example, in May 2022, the Alternative Reference Rates Committee (ARRC), a group of private-market participants convened by the U.S. Federal Reserve Board and the Federal Reserve Bank of New York, endorsed SOFR as its recommended alternative benchmark rate to replace the LIBOR settings for US dollars. SOFR is observed and backward-looking, which stands in contrast with LIBOR under the current methodology, which is an estimated forward-looking rate and relies, to some degree, on the expert judgment of submitting panel members. Given that SOFR is a secured rate backed by government securities, it will be a rate that does not take into account bank credit risk (as is the case with LIBOR). Whether or not SOFR attains market traction as a LIBOR replacement tool remains in question. It is unclear if other benchmarks may emerge or if other rates will be adopted. As such, the transition from LIBOR poses future uncertainties and challenges.

Even if the financial instruments transition to using alternative benchmarks like SOFR successfully, the new benchmarks are likely to differ from LIBOR, as the alternative benchmark rate may be calculated differently. Borrowings under our revolving credit and term loan facilities are at variable interest rates based on LIBOR. Although our revolving credit and term loan facilities include mechanics to facilitate the adoption by us and our lenders of an alternative benchmark rate in place of LIBOR, no assurance can be made that such alternative rate will perform in a manner similar to LIBOR and may result in interest rates that are higher or lower than those that would have resulted had LIBOR remained in effect. Further, transitioning to an alternative benchmark rate, such as SOFR, may result in us incurring expense and legal risks, as renegotiation and changes to documentation may be required in effecting the transition. Any of these occurrences could materially and adversely affect our borrowing costs, financial condition and results of operations.

Our business may be negatively impacted as a result of the United Kingdom's departure from the European Union.

We currently manufacture goods in the United Kingdom for distribution in the European Union and vice-versa and therefore may continue to be adversely affected as a result of the United Kingdom's departure from the European Union ("Brexit") in 2020. The impact of the withdrawal has and may continue to, among other outcomes, exacerbate the disruption of the free movement of goods, services and people between the United Kingdom and the European Union, undermine bilateral cooperation in key geographic areas and disrupt trade between the United Kingdom and the European Union or other nations as the United Kingdom pursues independent trade relations. In addition, Brexit continues to cause legal uncertainty, which could last indefinitely, and may potentially create divergent national laws and regulations as the United Kingdom determines which European Union laws to replace or replicate. Given the lack of comparable precedent, it is unclear what the financial, trade and legal implications of the withdrawal of the United Kingdom from the European Union will be and how the withdrawal will continue to affect us. Adverse consequences concerning Brexit or the European Union could include deterioration in global economic conditions, instability in global financial markets, political uncertainty, volatility in currency exchange rates, or adverse changes in the cross-border agreements currently in place, any of which could have an adverse impact on our financial results in the future.

Risks Related to Legal and Regulatory Considerations

If we are unable to comply with regulatory requirements and industry standards, including those regarding product safety, quality, efficacy and environmental impact, we could incur significant costs and suffer reputational harm which could adversely affect results of operations.

The development, manufacture and sale of our products are subject to various regulatory requirements in each of the countries in which our products are developed, manufactured and sold. In addition, we are subject to product safety and compliance requirements established by governments, non-governmental organizations, including industry or similar oversight bodies, or contractually by our customers, including requirements concerning product safety, quality and efficacy, environmental impacts (including packaging, energy and water use and waste management) and other sustainability or similar issues. Changes to regulations or the implementation of additional regulations, especially in certain highly regulated markets we are active in, such as regulatory modernization of food safety laws and evolving standards and regulations affecting pharmaceutical excipients or in reaction to new or next-generation technologies, including advances in protein engineering, biotechnology (e.g., gene editing and gene mapping), or novel uses of existing technologies has required and may in the future require us to reduce or remove certain ingredients, substances or processing aids from the product portfolio and may result in significant costs or capital expenditures or require changes in business practice that could result in reduced margins or profitability.

As concerns regarding safety, quality and environmental impact become more pressing, we may see new, more restrictive regulations adopted that impact our products. For example, the European Chemicals Agency has proposed that the European Commission adopt a ban on microplastics, including those found in personal care items, detergents and cosmetics, to reduce plastics pollution. If this ban is adopted, we will be required to modify our products and/or innovate new solutions to replace microplastics in our products. If we are unable to adapt to these new regulations or standards in a cost effective and timely manner, we may lose business to competitors who are able to provide compliant products, expose ourselves to customer claims, regulatory fines, litigation or reputational damage.

Gaps in our operational processes or those of our suppliers or distributors can result in products that do not meet our quality control or industry standards or fail to comply with the relevant regulatory requirements, which in turn can result in finished consumer goods that do not comply with applicable standards and requirements. Products that are mislabeled, contaminated or damaged could result in a regulatory non-compliance event or even a product recall by the FDA or a similar foreign agency. For instance, the Company determined that certain grades of microcrystalline cellulose (Avicel® PH 101, 102, and 200 NF and Avicel® RC-591 NF) were found to be out-of-specification. Although the Company does not expect the OOS conductivity issue to affect the functionality of Avicel® NF grades or to pose a human health hazard, corrective actions have been implemented to improve operational and laboratory conditions.

We may also be exposed to serious adverse health claims related to undetected poor quality of raw materials, internal system failures to adequately reduce or eliminate certain hazards (such as pathogens, allergens, contaminants, pesticides, physical hazards, etc.) or products that are not in line with required or agreed specifications. Supply chain complexities, aging equipment and infrastructure, human errors, or other failures may exacerbate such risks.

Our contracts often require us to indemnify our customers for the costs associated with a product non-compliance event, including penalties, costs and settlements arising from litigation, remediation costs or loss of sales. As our offerings are used in many products intended for human use or consumption, these consequences would be exacerbated if we or our customer did not identify the defect before the product reaches the consumer and there was a resulting impact at the consumer level. Such a result could lead to potentially large-scale adverse publicity, negative effects on consumer's health, recalls and potential litigation, fines, penalties, sanctions or other regulatory actions. In addition, if we do not have adequate insurance or contractual indemnification from suppliers or other third parties, or if insurance or indemnification is not available, the liability relating to product or possible third-party claims arising from mislabeled, contaminated or damaged products could adversely affect our business, financial condition or results of operations. Furthermore, adverse publicity about our products, or our customers' products that contain our ingredients, including concerns about product safety or similar issues, whether real or perceived, could harm our reputation and result in an immediate adverse effect on our sales and customer relationships, as well as require us to utilize significant resources to rebuild our reputation.

Defects, quality issues (including product recalls), inadequate disclosure or misuse with respect to the products and capabilities could adversely affect our business, reputation and results of operations.

Defects in, misuse of, quality issues with respect to (including products recalls) or inadequate disclosure of risks relating to our products, could lead to lost profits and other economic damage, property damage, personal injury or other liability resulting in third-party claims, criminal liability, significant costs, damage to our reputation and loss of business. Any of these factors could adversely affect our business, financial condition and our results of operations.

Our results of operations may be negatively impacted by the outcome of uncertainties related to litigation.

From time to time we are involved in a number of legal claims, regulatory investigations and litigation, including claims related to intellectual property, product liability, environmental matters and indirect taxes. For instance, product liability claims may arise due to the fact that we supply products to the food and beverage, functional food, pharma/nutraceutical and personal care industries. Our manufacturing and other facilities may expose us to environmental claims and regulatory investigations and potential fines.

In addition, in light of our product offerings into functional food, nutraceuticals, and natural antioxidants, we may also be subject to claims of false or deceptive advertising claims relating to the efficacy, health benefits or other performance attributes of such offerings in the U.S., Europe and other foreign jurisdictions in which we offer these types of products. These claims can arise as a result of function claims, health claims, nutrient content claims and other claims that impermissibly suggest such benefits or attributes for certain foods or food components. The cost of defending these claims or our obligations for direct damages and indemnification if we were found liable could adversely affect our results of operations.

As a result of the N&B Transaction and the Frutarom acquisition, we assumed legal or environmental claims, regulatory investigations, and litigation, including product liability, patent infringement, commercial litigation and other actions. We have and will continue to become involved in additional actions arising from the acquired operations. Specifically, as the N&B Business and Frutarom had a significant number of facilities located globally and a large number of customers, our exposure to legal claims, regulatory and environmental investigations and litigation is increased. This will likely result in an increase in our cost for defense, settlement of claims or indemnification obligations as compared to our historical experience.

Our insurance may not be adequate to protect us from potential material expenses related to pending and future claims and our current levels of insurance may not be available in the future at commercially reasonable prices. Any of these factors could adversely affect our profitability and results of operations.

Failure to comply with environmental protection laws may cause us to close, relocate or operate one or more of our plants at reduced production levels, and expose us to civil or criminal liability, which could adversely affect our operating results and future growth.

Our business operations and properties procure, make use of, manufacture, sell, and distribute substances that are sometimes considered hazardous and are therefore subject to extensive and increasingly stringent federal, state, local and foreign laws and regulations pertaining to protection of the environment, including air emissions, sewage discharges, the use of hazardous materials, waste disposal practices and clean-up of existing environmental contamination.

Failure to comply with these laws and regulations or any future changes to them may result in significant consequences to us, including the need to close or relocate one or more of our production facilities, administrative, civil and criminal penalties, fines, sanctions, litigation, costly remediation measures, liability for damages and negative publicity. If we are unable to meet production requirements, we can lose customer orders, which can adversely affect our future growth or we may be required to make incremental capital investments to ensure supply. Idling of facilities or production modifications has caused or may cause customers to seek alternate suppliers due to concerns regarding supply interruptions and these customers may not return or may order at reduced levels even once issues are remediated. If these non-compliance issues reoccur in China or occur or in any other jurisdiction, we may lose business and may be required to incur capital spending above previous expectations, close a plant, or operate a plant at significantly reduced production levels on a permanent basis, and our operating results and cash flows from operations may be adversely affected.

We could be adversely affected by violations, by us or our counterparties, of the U.S. Foreign Corrupt Practices Act, similar U.S. or foreign anti-bribery and anti-corruption laws and regulations, applicable sanctions laws and regulations in the jurisdictions in which we operate or ethical business practices and related laws and regulations.

The global nature of our business, our increased size and employee count, the significance of our international revenue, our focus on emerging markets and presence in regulated industries create various domestic and local regulatory challenges and subject us to risks associated with our international operations. The U.S. Foreign Corrupt Practices Act (the “FCPA”) and similar anti-bribery and anti-corruption laws and regulations in other countries generally prohibit companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or keeping business or for other commercial advantage. In addition, U.S. public companies are required to maintain records that accurately and fairly represent their transactions and have an adequate system of internal accounting controls. Under the FCPA, U.S. companies may be held liable for the corrupt actions taken by directors, officers, employees, agents, or other strategic or local partners or representatives. As such, if we or our intermediaries fail to comply with the requirements of the FCPA or similar legislation, governmental authorities in the U.S. and elsewhere could seek to impose substantial civil and/or criminal fines and penalties which could have a material adverse effect on our business, reputation, operating results and financial condition.

We operate or may pursue opportunities in some jurisdictions, such as China, India, Brazil, Russia and Africa, that pose potentially elevated risks of fraud or corruption or increased risk of internal control issues. In certain jurisdictions, compliance with anti-bribery laws may conflict with local customs and practices. From time to time, we have conducted and will conduct internal investigations of the relevant facts and circumstances, control testing and compliance reviews, and take remedial actions, when appropriate, to help ensure that we are in compliance with applicable corruption and similar laws and regulations. For example, in August 2019, during the integration of Frutarom, we were made aware of allegations that two Frutarom businesses operating principally in Russia and Ukraine made certain improper payments, including to representatives of a number of customers. Our investigation substantiated the allegations that improper payments to representatives of customers were made and that key members of Frutarom’s senior management at the time were aware of such payments. We did not uncover any evidence suggesting that such payments had any connection to the U.S. In addition, Frutarom grew through rapid acquisition and, as part of our integration efforts, we have implemented our anti-corruption and similar policies throughout a number of those acquired companies, many of which were not previously subject to these U.S. laws.

Given the international scope of our business, we also sell certain of our products to countries that are subject to U.S. and other sanctions under general licenses and authorizations related to such products, technologies and transactions. For example, the U.S., the European Union and other countries have imposed sanctions and export controls on Russia, Belarus and occupied regions of Ukraine. As a result, we have limited our export of ingredients to customers in Russia, Belarus and occupied regions of Ukraine to only those that meet the essential needs of people. Compliance with sanctions laws is highly technical and requires careful oversight, and it is possible that actions taken by us, our subsidiaries or our suppliers may cause us to be in breach with these laws, which could have a material adverse effect to our business. Detecting, investigating and resolving actual or alleged violations of the FCPA or other anti-bribery and anti-corruption laws and regulations is expensive, could consume significant time and attention of our senior management and could subject us to investigations and inquiries by governmental and other regulatory bodies. Any allegations of non-compliance with such laws and regulations could have a disruptive effect on our operations in such jurisdiction, including interruptions of business or loss of third-party relationships, which may negatively impact our results of operations or financial condition. Any determination that our operations or activities are not in compliance with such laws and regulations could expose us to severe criminal or civil penalties or other sanctions, significant fines, termination of necessary licenses and permits and penalties or other sanctions that may harm our business and reputation.

In addition, our reputation and our customers' willingness to purchase our products depend in part on our compliance by our suppliers, distributors, customers or other counterparties with ethical employment practices, such as with respect to child labor, wages and benefits, forced labor, discrimination, safe and healthy working conditions, as well as with all legal and regulatory requirements relating to the conduct of their businesses (including the ones mentioned in the preceding paragraphs). While we require that third-parties we work with agree to our code of conduct, we do not exercise control over our suppliers, distributors, vendors and customers and due to the global nature of our business cannot guarantee their compliance with such ethical and lawful business practices or such legal requirements. If our counterparties fail to comply with applicable laws, regulations, safety codes, employment practices, human rights standards, quality standards, environmental standards, production practices, or other obligations, norms, or ethical standards, our reputation and brand image could be harmed, and we could be exposed to litigation, investigations, enforcement actions, monetary liability, and additional costs that would harm our reputation, business, financial condition, results of operations and prospects.

Our ability to compete effectively depends on our ability to protect our intellectual property rights.

We rely on patents, trademarks, copyrights and trade secrets to protect our intellectual property rights. We often rely on trade secrets to protect our products, manufacturing processes, extract methodologies and other processes, as this does not require us to publicly file information regarding our intellectual property. From time to time, a third party may claim that we have infringed upon or misappropriated their intellectual property rights, or a third party may infringe upon or misappropriate our intellectual property rights. We could incur significant costs in connection with legal actions to assert our intellectual property rights against third parties or to defend ourselves from third-party assertions of invalidity, infringement, misappropriation or other claims. Any settlement or adverse judgment resulting from such litigation could require us to obtain a license to continue to use the intellectual property rights that are the subject of the claim, or otherwise restrict or prohibit our use of such intellectual property rights. Any required licensing fees may not be available to us on acceptable terms, if at all. For those intellectual property rights that are protected as trade secrets, this litigation could result in even higher costs, and potentially the loss of certain rights, since we would not have a perfected intellectual property right that precludes others from making, using or selling our products or processes. The ongoing trend among our customers towards more transparent labeling could further diminish our ability to effectively protect our products.

We vigilantly protect our intellectual property rights, including trade secrets. We have designed and implemented internal controls intended to restrict access to and distribution of our respective intellectual property. Despite these precautions, our intellectual property is vulnerable to unauthorized access through employee error or actions, theft and cybersecurity incidents, and other security breaches. Protecting intellectual property related to biotechnology is particularly challenging because theft is difficult to detect and biotechnology can be self-replicating. Accordingly, the impact of such theft can be significant.

For intellectual property rights that we seek to protect through patents, we cannot be certain that these rights, if obtained, will not later be opposed, invalidated or circumvented. In addition, even if such rights are obtained in the U.S., the laws of some other countries in which our products are or may be sold may not protect intellectual property rights to the same extent as the laws of the U.S. If other parties were to infringe on our intellectual property rights, or if our intellectual property rights were the subject of unauthorized access leading to competitive pressure or if a third party successfully asserted that we had infringed on their intellectual property rights, it could materially and adversely affect our future results of operations by, among other things, (i) being required to cease production and marketing or reducing the price that we could obtain in the marketplace for products which are based on such rights, (ii) increasing the royalty or other fees that we may be required to pay in connection with such rights, (iii) limiting the volume, if any, of such products that we can sell or (iv) resulting in significant litigation costs and potential liability.

Changes in our tax rates, the adoption of new U.S. or international tax legislation, or changes in existing tax laws could expose us to additional tax liabilities that may affect our future results.

We are subject to taxes in the U.S. and numerous foreign jurisdictions. Our future effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in liabilities for uncertain tax positions, cost of repatriations or changes in tax laws or their interpretation. Any of these changes could have a material adverse effect on our profitability.

We have and will continue to implement transfer pricing policies among our various operations located in different countries. These transfer pricing policies are a significant component of the management and compliance of our operations across international boundaries and overall financial results. Many countries routinely examine transfer pricing policies of taxpayers subject to their jurisdiction, challenge transfer pricing policies aggressively where there is potential non-compliance and impose significant interest charges and penalties where non-compliance is determined. However, governmental authorities could challenge these policies more aggressively in the future and, if challenged, we may not prevail. We could suffer significant costs related to one or more challenges to our transfer pricing policies.

We are subject to the continual examination of our income tax returns by the Internal Revenue Service, state tax authorities and foreign tax authorities in those countries in which we operate, and we may be subject to assessments or audits in the future in any of the countries in which we operate. The final determination of tax audits and any related litigation could be materially different from our historical income tax provisions and accruals, and while we do not believe the results that follow would have a material adverse effect on our financial condition, such results could have a material effect on our income tax provision, net income or cash flows in the period or periods in which that determination is made.

In addition, a number of international legislative and regulatory bodies have proposed legislation and begun investigations of the tax practices of multi-national companies and, in the European Union, the tax policies of certain European Union member states. One of these efforts has been led by the Organization for Economic Co-operation and Development, an international association of 34 countries including the U.S., which has finalized recommendations to revise corporate tax, transfer pricing, and tax treaty provisions in member countries. On December 15, 2022, European Union member states unanimously adopted the Minimum Tax Directive ensuring a global minimum level of taxation for multi-national companies. Member States have until December 31, 2023 to transpose the Directive into national legislation. The enactment of the new legislation could have a material effect on our effective tax rate, income tax expense, net income or cash flows.

Since 2013, the European Commission (“EC”) has been investigating tax rulings granted by tax authorities in a number of European Union member states with respect to specific multi-national corporations to determine whether such rulings comply with European Union rules on state aid, as well as more recent investigations of the tax regimes of certain European Union member states. Under European Union law, selective tax advantages for particular taxpayers that are not sufficiently grounded in economic realities may constitute impermissible state aid. If the EC determines that a tax ruling or tax regime violates the state aid restrictions, the tax authorities of the affected European Union member state may be required to collect back taxes for the period of time covered by the ruling. In late 2015 and early 2016, the EC declared that tax rulings, related to other companies, by tax authorities in Luxembourg, the Netherlands and Belgium did not comply with the European Union state aid restrictions. If the EC or tax authorities in other jurisdictions were to successfully challenge tax rulings applicable to us in any of the member states in which we are subject to taxation or our internal intercompany arrangements, we could be exposed to increased tax liabilities.

In December 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”) that significantly revised the U.S. tax code effective January 1, 2018. The Tax Act impacted our consolidated results of operations during 2022 and is expected to continue to impact our consolidated results of operations in future periods. The ultimate impact of the Tax Act, including for future periods, may depend on additional regulatory or accounting guidance that may be issued with respect to the Tax Act.

In August 2022, the U.S. government enacted legislation commonly referred to as the “Inflation Reduction Act”, which, among other things, imposes a minimum “book” tax on certain corporations effective for taxable years beginning after December 31, 2022 and creates a new excise tax on stock repurchases made by certain publicly traded corporations after December 31, 2022. The impact of the Inflation Reduction Act on our operations will depend on multiple factors, many of which cannot be determined at this time. As a result, it is uncertain what the extent of the impact of the new law will be on our operations. The application of the minimum book tax or the excise tax on us could adversely affect our results of operations.

The N&B Transaction could result in significant tax liability, and we may be obligated to indemnify DuPont for any such tax liability imposed on DuPont.

The completion of the N&B Transaction in 2021 was conditioned upon the receipt by DuPont of an opinion that the transaction generally will qualify as a tax-free reorganization. The tax opinion was based upon various factual representations and assumptions, as well as certain undertakings made by DuPont, IFF and N&B. If any of those factual representations or assumptions were untrue or incomplete in any material respect, any undertaking was or is not complied with, or the facts upon which the opinion was based are materially different from the facts at the closing of the N&B Transaction, the transaction may not qualify (in whole or part) for tax-free treatment.

The N&B spin-off and certain aspects of the pre-spin-off internal reorganizations to form N&B could be taxable to DuPont if N&B or we were to engage in a “Spinco Tainting Act” (as defined in the Tax Matters Agreement, by and among DuPont, N&B and IFF, a form of which is attached to IFF’s registration statement on Form S-4 (Registration Number 333-238072)). A Spinco Tainting Act is generally any action (or inaction) within our control or under the control of N&B or their affiliates, any event involving our common stock or the common stock of N&B or any assets of N&B or its subsidiaries, or any breach by N&B or any of its subsidiaries of any factual representations, assumptions, or undertakings made by it, in each case, that would affect the non-recognition treatment of the spin-off and internal reorganizations for U.S. federal income tax purposes, as described above. Under the Tax Matters Agreement, we and N&B will be required to indemnify DuPont for any taxes resulting from a Spinco Tainting Act. If we or N&B were required to indemnify DuPont pursuant to the Tax Matters Agreement as described above, this indemnification obligation may be substantial and could have a material adverse effect on us, including with respect to our financial condition and results of operations.

Moreover, we are not indemnified by N&B for tax liabilities related to pre-spin-off periods. Tax liabilities could increase as an outcome of final determination of tax examinations and could adversely impact our financial results.

If we fail to comply with data protection laws in the U.S. and abroad, we may be subject to fines, penalties and other costs.

Legal requirements relating to the collection, storage, handling, use, disclosure, transfer, and security of personal data continue to evolve, and regulatory scrutiny in this area is increasing around the world. This regulatory environment is increasingly challenging and may present material obligations and risks to our business, including significantly expanded compliance burdens, restrictions on transfer of personal data, costs and enforcement risks. For example, the European Union’s GDPR, which became effective in May 2018, greatly increases the jurisdictional reach of EU law and adds a broad array of requirements related to personal data, including individual notice and opt-out preferences, restrictions on and requirements for transfer of personal data and the public disclosure of significant data breaches. Additionally, violations of the GDPR can result in fines of as much as 4% of a company’s annual revenue. Other governments have enacted or are enacting similar data protection laws, including data localization laws that require data to stay within their borders. All of these evolving compliance and operational requirements, restrictions on use of personal data, as well as the uncertain interpretation and enforcement of laws, impose significant costs and regulatory risks that are likely to increase over time. Our failure to comply with these evolving regulations could expose us to fines, sanctions, penalties and other costs that could harm our reputation and adversely impact our financial results.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

Our principal owned and leased properties as of December 31, 2022, are as follows:

	Europe, Africa & the Middle East		North America		Greater Asia		Latin America	
	Owned	Leased	Owned	Leased	Owned	Leased	Owned	Leased
Plant	48	20	24	13	22	12	18	5
Office	3	77	—	7	4	37	—	8
Laboratory	7	16	1	15	—	16	2	2
Warehouse	1	12	—	11	—	3	3	11
Other	5	5	—	8	11	4	3	4
	64	130	25	54	37	72	26	30

Our principal executive offices are located at 521 West 57th Street, New York, New York and 200 Powder Mill Road, Wilmington, Delaware. Our principal sites include facilities which, in the opinion of its management, are suitable and adequate for their use and have sufficient capacity for its current business needs and expected near-term growth.

ITEM 3. LEGAL PROCEEDINGS.

We are subject to various claims and legal actions in the ordinary course of our business. The Company’s material legal proceedings are described in Part II, Item 8 of this Form 10-K in the Notes to Consolidated Financial Statements in Note 19, “Commitments and Contingencies” under the heading “Litigation.”

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Market Information.

Our common stock is principally traded on the New York Stock Exchange under the ticker symbol “IFF”.

Approximate Number of Equity Security Holders.

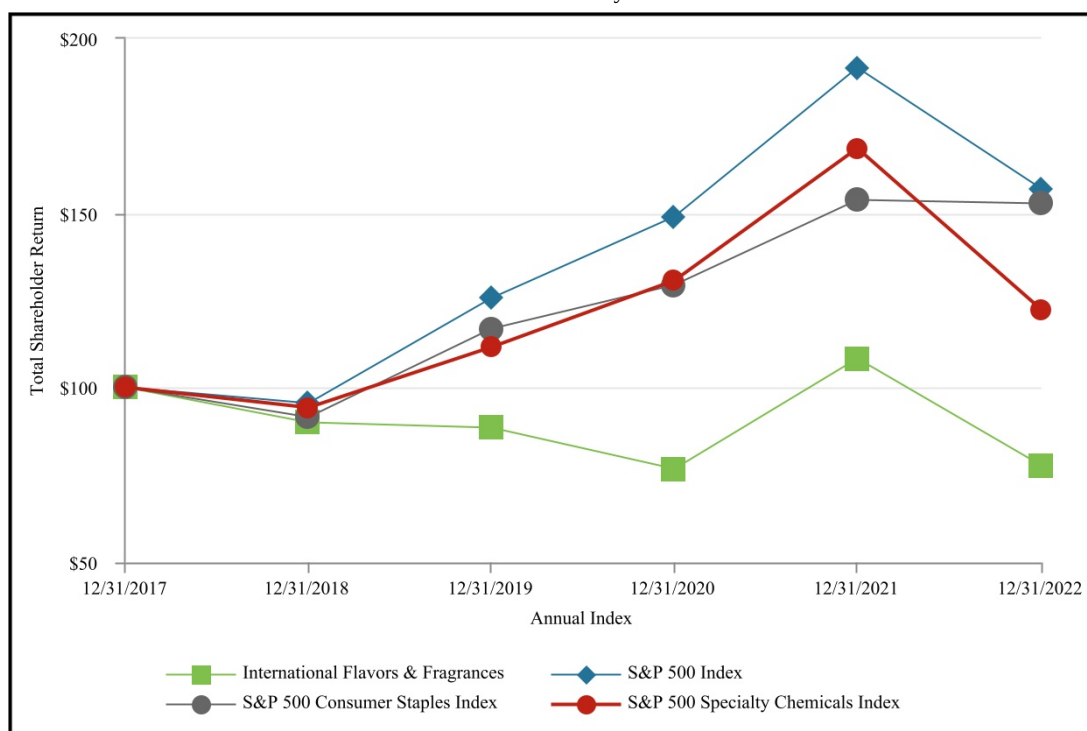
Title of Class	Number of shareholders of record as of February 21, 2023
Common stock, par value 12 1/2¢ per share	3,431

Issuer Purchases of Equity Securities.

None.

Performance Graph.

The following graph compares a shareholder’s cumulative total return for the last five fiscal years as if such amounts had been invested in: (i) our common stock; (ii) the stocks included in the S&P 500 Index; (iii) the stocks included in the S&P 500 Consumer Staples Index; and (iv) the stocks included in the S&P 500 Specialty Chemicals Index. The graph is based on historical stock prices and measures total shareholder return, which takes into account both changes in stock price and dividends. The total return assumes that dividends were reinvested daily and is based on a \$100 investment on December 31, 2017.



SOURCE: S&P Capital IQ

Year-end Data	2017	2018	2019	2020	2021	2022
International Flavors & Fragrances	\$ 100.00	\$ 89.90	\$ 88.38	\$ 76.59	\$ 108.41	\$ 77.68
S&P 500 Index	\$ 100.00	\$ 95.62	\$ 125.72	\$ 148.85	\$ 191.58	\$ 156.88
S&P 500 Consumer Staples Index	\$ 100.00	\$ 91.62	\$ 116.92	\$ 129.48	\$ 153.60	\$ 152.65
S&P 500 Specialty Chemicals Index	\$ 100.00	\$ 94.27	\$ 111.49	\$ 130.63	\$ 168.56	\$ 122.29

ITEM 6. [RESERVED]

**ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.
(UNLESS INDICATED OTHERWISE, DOLLARS IN MILLIONS EXCEPT PER SHARE AMOUNTS)**

Overview

Company Background

On February 1, 2021, one of our wholly owned subsidiaries merged with and into the N&B Business (the “Merger”), pursuant to a Merger Agreement with DuPont. The shares issued in the Merger represented approximately 55.4% of the common stock of IFF on a fully diluted basis, after giving effect to the Merger, as of February 1, 2021. The N&B Business is an innovation-driven and customer-focused business that provides solutions for the global food and beverage, dietary supplements, home and personal care, energy, animal nutrition and pharma markets. The transaction was made in order to strengthen IFF's customer base and market presence, with an enhanced position in the food & beverage, home & personal care and health & wellness markets. See Note 3 to the Consolidated Financial Statements for additional information related to the N&B Transaction.

As a result of the N&B Transaction, and following our 2018 acquisition of Frutarom Industries Ltd., we have expanded our global leadership positions, which now include high-value ingredients and solutions in the Food & Beverage, Home & Personal Care and Health & Wellness markets, and across key Taste, Texture, Scent, Nutrition, Enzymes, Cultures, Soy Proteins, Pharmaceutical Excipients and Probiotics categories.

We are organized into four segments: Nourish, Health & Biosciences, Scent and Pharma Solutions. The Company's consolidated financial information for the year ended December 31, 2022 reflects the results of N&B for the full twelve months of 2022, whereas the Company's consolidated financial information for the year ended December 31, 2021 reflects the results of N&B for eleven months of 2021, and 2020 does not include any amounts related to N&B.

Our Nourish segment consists of an innovative and broad portfolio of natural-based ingredients to enhance nutritional value, texture and functionality in a wide range of beverage, dairy, bakery, confectionery and culinary applications and consists of three business units: Ingredients, Flavors and Food Designs.

Our Health & Biosciences segment consists of the development and production of an advanced biotechnology-derived portfolio of enzymes, food cultures, probiotics and specialty ingredients for food and non-food applications. Among many other applications, this biotechnology-driven portfolio includes cultures for use in fermented foods such as yogurt, cheese and fermented beverages, probiotic strains, many with documented clinical health claims for use as dietary supplements and through industrial fermentation the production of enzymes and microorganisms that provide product and process performance benefits to household detergents, animal feed, ethanol production and brewing. Health & Biosciences is comprised of five business units: Health, Cultures & Food Enzymes, Home & Personal Care, Animal Nutrition and Grain Processing. On July 1, 2022, we completed the divestiture of our Microbial Control business unit (formerly a part of the Health & Biosciences segment).

Our Scent segment creates fragrance compounds, fragrance ingredients and cosmetic ingredients that are integral elements in the world's finest perfumes and best-known household and personal care products. Consumer insights science and creativity are at the heart of our Scent business, and, along with our unique portfolio of natural and synthetic ingredients, global footprint, innovative technologies and know-how, and customer intimacy, we believe make us a market leader in scent products. The Scent segment is comprised of three business units: Fragrance Compounds, Fragrance Ingredients and Cosmetic Actives.

Our Pharma Solutions segment produces, among other things, a vast portfolio of cellulose and seaweed-based pharmaceutical excipients, used to improve the functionality and delivery of active pharmaceutical ingredients, including controlled or modified drug release formulations, and enabling the development of more effective pharmaceutical finished dosage formulations. Our excipients are used in prescription and over-the-counter pharmaceuticals and dietary supplements. Our Pharma Solutions products also serve a variety of other specialty and industrial end-uses including coatings, inks, electronics, agriculture, and consumer products.

Financial Measures — Currency Neutral

Our financial results include the impact of foreign currency exchange rates. We provide currency neutral calculations in this report to remove the impact of these items. We calculate currency neutral numbers by translating current year invoiced sale amounts at the exchange rates used for the corresponding prior year period. We use currency neutral results in our analysis of subsidiary and/or segment performance. We also use currency neutral numbers when analyzing our performance against our competitors.

Due to the Merger with N&B, for the fiscal year 2022 we will not be presenting currency neutral impacts for the Nourish, Health & Biosciences and Pharma Solutions operating segments as the performance in these operating segments includes effects of N&B for the full twelve months of 2022 while the 2021 period does not, and thus the periods' results are not equally comparable. We present the currency neutral impacts for the Scent operating segment as this operating segment does not have any effects of N&B.

Impairment of Goodwill

For the third quarter of 2022, we determined that goodwill impairment triggering events occurred for our Nourish, Health & Biosciences and Pharma Solutions reporting units, which required us to complete an interim impairment assessment.

In performing the quantitative impairment test, we determined that the fair value of the Nourish and Pharma Solutions reporting units exceeded their carrying values, and determined that there was no impairment of goodwill relating to these reporting units. We determined that the carrying value of the Health & Biosciences reporting unit exceeded its fair value and recorded a goodwill impairment charge of \$2.250 billion in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022. See “Critical Accounting Policies and Use of Estimates” and Note 6 to the Consolidated Financial Statements for additional information.

Impact of the Events in Russia and Ukraine

We maintain operations in both Russia and Ukraine and, additionally, export products to customers in Russia and Ukraine from operations outside the region. In response to the events in Ukraine, we have limited the production and supply of ingredients in and to Russia to only those that meet the essential needs of people, including food, hygiene and medicine.

In 2021, total sales to Russian customers were approximately 2% of total sales. For the year ended December 31, 2022, sales to Russian customers were also approximately 2% of total sales.

In 2021, total sales to Ukrainian customers were less than 1% of total sales. For the year ended December 31, 2022, sales to Ukrainian customers were also less than 1% of total sales.

See Note 1, Note 5 and Note 6 to the Consolidated Financial Statements for additional information.

Impact of COVID-19 Pandemic

On March 11, 2020, the World Health Organization designated COVID-19 as a global pandemic. Various policies and initiatives have been implemented around the world to reduce the global transmission of COVID-19. Although there continue to be minor operational disruptions, all of IFF’s manufacturing facilities remain open and continue to manufacture products.

The COVID-19 pandemic remains a serious threat to the health of the world’s population and certain countries and regions continue to suffer from outbreaks or have seen a recurrence of infections, especially with the emergence of new variants of the virus. Accordingly, the Company continues to take the threat from COVID-19 seriously. The impact that COVID-19 will have on our consolidated results of operations for the remainder of 2023 remains uncertain. Due to the length and severity of the COVID-19 pandemic, there is continued volatility as a result of retail and travel, consumer shopping and consumption behavior. Moreover, as a result of disruptions or uncertainty relating to the COVID-19 pandemic, we are experiencing, and may continue to experience, increased costs, delays or limited availability related to raw materials, strain on shipping and transportation resources, and higher energy prices, which have negatively impacted, and may continue to negatively impact, our margins and operating results. We will continue to evaluate the nature and extent of these potential impacts to our business, consolidated results of operations, segment results, liquidity and capital resources.

Although IFF has not experienced and does not currently anticipate any impairment charges related to COVID-19, the continuing effects of a prolonged pandemic could result in increased risk of asset write-downs and impairments. Any of these events could potentially result in a material adverse impact on IFF’s business and results of operations.

For more detailed information about risks related to COVID-19, refer to Item 1A, “Risk Factors” - *Global health crises, such as the COVID-19 pandemic, have had an impact on our supply chain and could have a material impact on global operations, our customers and our suppliers, which could adversely impact our business and results of operations.*

2023 Restructuring Program

In December 2022, we announced a restructuring program mainly related to headcount reduction to improve our organizational and operating structure, drive efficiencies and achieve cost savings (the “Program”). Once the Program is finalized we expect to incur one-time costs of approximately \$70 million and expect to achieve run-rate savings of approximately \$100 million, with approximately \$75 million targeted to be realized in 2023. We expect to complete the program by the end of 2023. The final amount and timing of this charge will be determined once the plan is finalized.

2022 Financial Performance Overview

For a reconciliation between reported and adjusted figures, please refer to the “Non-GAAP Financial Measures” section.

Sales

Sales in 2022 increased \$784 million, or 7% on a reported basis, to \$12.440 billion compared to \$11.656 billion in the 2021 period. Sales included approximately \$568 million of incremental sales attributable to N&B for the month of January in the 2022 period. In addition, the increase in sales was primarily driven by price increases across various businesses, offset in part by the net impact of the divestiture of the Microbial Control business unit and acquisition of Health Wright Products, Inc. (“change in business portfolio mix”) and volume decreases across various businesses.

Our 25 largest customers accounted for approximately 28% of total sales in 2022. In 2022, no customer accounted for more than 10% of sales. A key factor for commercial success is our inclusion on strategic customers’ core supplier lists, which provides opportunities to expand and win new business. We are on the core supplier lists of a large majority of our global and strategic customers.

Gross Profit

Gross profit in 2022 increased \$416 million, or 11% on a reported basis, to \$4.151 billion (33.4% of sales) compared to \$3.735 billion (32.0% of sales) in the 2021 period. Approximately \$179 million of gross profit was attributable to N&B for the month of January in the 2022 period. The increase in gross profit was primarily driven by favorable net pricing across various businesses and the impact of N&B inventory step-up costs from the prior year period, offset in part by the change in business portfolio mix and volume decreases.

Results of Operations

(DOLLARS IN MILLIONS EXCEPT PER SHARE AMOUNTS)	Year Ended December 31,			Change	
	2022	2021	2020	2022 vs. 2021	2021 vs. 2020
Net sales	\$ 12,440	\$ 11,656	\$ 5,084	7 %	129 %
Cost of goods sold	8,289	7,921	2,998	5 %	164 %
Gross profit	4,151	3,735	2,086	11 %	79 %
Research and development (R&D) expenses	603	629	357	(4) %	76 %
Selling and administrative (S&A) expenses	1,768	1,749	949	1 %	84 %
Restructuring and other charges	12	41	17	(71) %	141 %
Amortization of acquisition-related intangibles	727	732	193	(1) %	279 %
Impairment of goodwill	2,250	—	—	NMF	NMF
Impairment of long-lived assets	120	—	—	NMF	NMF
(Gains) losses on sale of fixed assets	(3)	(1)	4	200 %	(125) %
Operating (loss) profit	(1,326)	585	566	NMF	3 %
Interest expense	336	289	132	16 %	119 %
Other income, net	(37)	(58)	(7)	(36) %	NMF
(Loss) income before taxes	(1,625)	354	441	NMF	(20) %
Provision for income taxes	239	75	74	219 %	1 %
Net (loss) income	(1,864)	279	367	NMF	(24) %
Net income attributable to non-controlling interest	7	9	4	(22) %	125 %
Net (loss) income attributable to IFF shareholders	\$ (1,871)	\$ 270	\$ 363	NMF	(26) %
Net (loss) income per share — diluted	\$ (7.32)	\$ 1.10	\$ 3.21	NMF	(66) %
Gross margin	33.4 %	32.0 %	41.0 %	140 bps	NMF
R&D as a percentage of sales	4.8 %	5.4 %	7.0 %	(60)bps	(160)bps
S&A as a percentage of sales	14.2 %	15.0 %	18.7 %	(80)bps	NMF
Operating margin	(10.7)%	5.0 %	11.1 %	NMF	NMF
Effective tax rate	(14.7)%	21.2 %	16.8 %	NMF	NMF
Segment net sales					
Nourish	\$ 6,829	\$ 6,264	\$ 2,886	9 %	117 %
Health & Biosciences	2,339	2,329	134	— %	NMF
Scent	2,301	2,254	2,064	2 %	9 %
Pharma Solutions	971	809	—	20 %	NMF
Consolidated	\$ 12,440	\$ 11,656	\$ 5,084	7 %	129 %

NMF: Not meaningful

Cost of goods sold includes the cost of materials and manufacturing expenses. R&D includes expenses related to the development of new and improved products and technical product support. S&A expenses include expenses necessary to support our commercial activities and administrative expenses supporting our overall operating activities including compliance with governmental regulations.

2022 IN COMPARISON TO 2021

Sales

Sales for 2022 increased \$784 million, or 7% on a reported basis, to \$12.440 billion compared to \$11.656 billion in the 2021 period. Sales included approximately \$568 million of incremental sales attributable to N&B for the month of January in the 2022 period. In addition, the increase in sales was primarily driven by price increases across various businesses, offset in part by the change in business portfolio mix and volume decreases across various businesses.

Sales performance by segment was as follows:

	% Change in Sales - 2022 vs. 2021	
	Reported	Currency Neutral ⁽¹⁾
Nourish	9 %	NMF
Health & Biosciences	0 %	NMF
Scent	2 %	8 %
Pharma Solutions	20 %	NMF
Total	7 %	NMF

(1) Currency neutral sales growth is calculated by translating current year invoiced sale amounts at the exchange rates for the corresponding prior year period.

NMF: Not meaningful

Nourish

Nourish sales in 2022 increased \$565 million, or 9% on a reported basis, to \$6.829 billion compared to \$6.264 billion in the 2021 period. Nourish sales included approximately \$293 million of incremental sales attributable to N&B for the month of January in the 2022 period. In addition, performance in the Nourish operating segment was primarily driven by price increases, particularly in the Ingredients and Food Design business units, offset in part by volume decreases across various business units.

Health & Biosciences

Health & Biosciences sales in 2022 increased \$10 million, or 0.4% on a reported basis, to \$2.339 billion compared to \$2.329 billion in the 2021 period. Health & Biosciences sales included approximately \$202 million of incremental sales attributable to N&B for the month of January in the 2022 period. The decrease in Health & Biosciences sales, excluding the impact of N&B for the month of January in the 2022 period, was primarily driven by the change in business portfolio mix, offset in part by price increases across various business units.

Scent

Scent sales in 2022 increased \$47 million, or 2% on a reported basis, to \$2.301 billion compared to \$2.254 billion in the 2021 period. Scent sales in 2022 also increased 8% on a currency neutral basis. Performance in the Scent operating segment was driven by price and volume increases in Fragrance Compounds and price increases in Fragrance Ingredients business units, offset in part by unfavorable impacts from exchange rate variations.

Pharma Solutions

Pharma Solutions sales in 2022 increased \$162 million, or 20% on a reported basis, to \$971 million compared to \$809 million. Pharma Solutions sales included approximately \$73 million of incremental sales attributable to N&B for the month of January in the 2022 period. In addition, performance in the Pharma Solutions operating segment was primarily driven by price and volume increases.

Cost of Goods Sold

Cost of goods sold increased \$368 million to \$8.289 billion (66.6% of sales) in 2022 compared to \$7.921 billion (68.0% of sales) in 2021. Cost of goods sold included approximately \$389 million of incremental costs attributable to N&B for the month of January in the 2022 period. In addition, excluding the impact of N&B for the month of January in the 2022 period and the N&B inventory step-up costs from the prior year period, the increase in cost of goods sold was primarily driven by higher material costs, due to higher commodity prices, offset in part by the change in business portfolio mix and volume decreases in sales.

Research and Development (R&D) Expenses

R&D expenses decreased \$26 million to \$603 million (4.8% of sales) in 2022 compared to \$629 million (5.4% of sales) in 2021. R&D expenses included approximately \$20 million of incremental expenses attributable to N&B for the month of January in the 2022 period, which consisted primarily of employee related expenses, including salaries, wages and bonuses and operating expenses for R&D related activities. In addition, excluding the impact of N&B for the month of January in the 2022 period, R&D expenses decreased primarily due to lower employee related expenses, including salaries, wages and bonuses, and professional fees, including consulting costs, offset in part by higher operating expenses for R&D related activities.

Selling and Administrative (S&A) Expenses

S&A expenses increased \$19 million to \$1.768 billion (14.2% of sales) in 2022 compared to \$1.749 billion (15.0% of sales) in 2021. S&A expenses included approximately \$51 million of incremental expenses attributable to N&B for the month of January in the 2022 period, which consisted primarily of employee related expenses, including salaries, wages and bonuses, professional fees, including consulting costs, and operating expenses for S&A related activities. In addition, excluding the impact of N&B for the month of January in the 2022 period, S&A expenses decreased primarily due to lower employee related expenses, including salaries, wages and bonuses, and professional fees, including consulting costs, offset in part by higher operating expenses for S&A related activities.

Restructuring and Other Charges

Restructuring and other charges decreased to \$12 million in 2022 compared to \$41 million in 2021. The decrease was primarily driven by lower severance costs incurred in 2022 (see Note 2 for additional information).

Amortization of Acquisition-Related Intangibles

Amortization expenses decreased to \$727 million in 2022 compared to \$732 million in 2021. Amortization expense included approximately \$47 million attributable to N&B for the month of January in the 2022 period related to the intangible assets acquired through the Merger with N&B. Excluding the impact of N&B for the month of January in the 2022 period, the decrease in amortization expense was primarily driven by the reduction in intangible assets as a result of the divestiture of the Microbial Control business unit and impairment of intangible assets of an asset group that operates primarily in Russia, offset in part by the impact of acquisitions of intangible assets from Health Wright Products, Inc. (see Note 3, Note 4 and Note 6 for additional information).

Impairment of Goodwill

Impairment of goodwill was \$2.250 billion in 2022, which was related to the Health & Biosciences reporting unit. See Note 1 and Note 6 for additional information.

Impairment of Long-Lived Assets

Impairment of long-lived assets was \$120 million in 2022. The impairment charge was due to the uncertainties related to our operations in Russia and Ukraine and was allocated on a pro rata basis to intangible assets and property, plant and equipment (see Note 1, Note 5 and Note 6 for additional information).

Interest Expense

Interest expense increased \$47 million to \$336 million in 2022 compared to \$289 million in 2021. Interest expense included approximately \$13 million attributable to N&B for the month of January in the 2022 period, which included the impact of the additional debt assumed in the Merger with N&B. In addition, the increase in interest expense was due to higher interest rates, which led to an increase in the cost for participating in our factoring programs (see Note 1 for additional information), higher effective interest rates on the outstanding Term Loan Facilities and an increase in draw downs of the Revolving Credit Facility and commercial paper (see Note 9 for additional information).

Other Income, Net

Other income, net, decreased \$21 million to \$37 million in 2022 versus \$58 million in 2021. Other income, net includes approximately \$6 million attributable to N&B for the month of January in the 2022 period. Excluding the impact of N&B for the month of January in the 2022 period, the decrease in other income, net was primarily due to foreign exchange losses in 2022 compared to foreign exchange gains in the 2021 period and lower pension income in 2022 compared to the 2021 period, due to the adjustment during the 2021 period to correct net income amounts related to certain defined benefit plans in prior years, offset in part by higher interest income.

Income Taxes

The effective tax rate in 2022 was (14.7)% compared to 21.2% in 2021. The year-over-year change was primarily due to the recording of non-tax-deductible impairment charges related to goodwill in the Health & Biosciences operating segment and the tax effects of the divestiture of the Microbial Control business unit.

Segment Adjusted Operating EBITDA Results by Business Unit

We use Segment Adjusted Operating EBITDA for internal reporting and performance measurement purposes. Segment Adjusted Operating EBITDA is defined as (Loss) Income Before Taxes before depreciation and amortization expense, interest expense, restructuring and other charges and certain non-recurring items. Our determination of reportable segments was made on the basis of our strategic priorities within each segment and corresponds to the manner in which our Chief Operating Decision Maker reviews and evaluates operating performance to make decisions about resources to be allocated to the segment. In addition to our strategic priorities, segment reporting is also based on differences in the products and services we provide.

<i>(DOLLARS IN MILLIONS)</i>	For the Year Ended December 31,	
	2022	2021
Segment Adjusted Operating EBITDA		
Nourish	\$ 1,176	\$ 1,172
Health & Biosciences	634	625
Scent	423	463
Pharma Solutions	222	165
Total	2,455	2,425
Depreciation & Amortization	(1,179)	(1,156)
Interest Expense	(336)	(289)
Other Income, net	37	58
Acquisition Related Costs	4	—
Restructuring and Other Charges	(12)	(41)
Gains on Sale of Fixed Assets	3	1
Impairment of Goodwill	(2,250)	—
Impairment of Long-Lived Assets	(120)	—
Shareholder Activism Related Costs	(3)	(7)
Business Divestiture Costs	(110)	(42)
Employee Separation Costs	(11)	(29)
Strategic Initiative Costs	(3)	—
Global Shared Services Implementation Costs	(5)	—
Frutarom Acquisition Related Costs	(1)	(2)
N&B Inventory Step-Up Costs	—	(368)
N&B Transaction Related Costs	—	(91)
Integration Related Costs	(94)	(105)
(Loss) Income Before Taxes	\$ (1,625)	\$ 354
Segment Adjusted Operating EBITDA margin:		
Nourish	17.2 %	18.7 %
Health & Biosciences	27.1 %	26.8 %
Scent	18.4 %	20.5 %
Pharma Solutions	22.9 %	20.4 %
Consolidated	19.7 %	20.8 %

Nourish Segment Adjusted Operating EBITDA

Nourish Segment Adjusted Operating EBITDA increased \$4 million, or 0.3% on a reported basis, to \$1.176 billion (17.2% of segment sales) in 2022 from \$1.172 billion (18.7% of segment sales) in the comparable 2021 period. Nourish Segment Adjusted Operating EBITDA included approximately \$65 million attributable to N&B for the month of January in the 2022 period. The decrease in Nourish Segment Adjusted Operating EBITDA, excluding the impact of N&B for the month of January in the 2022 period, was primarily driven by volume decreases, offset in part by favorable net pricing.

Health & Biosciences Segment Adjusted Operating EBITDA

Health & Biosciences Segment Adjusted Operating EBITDA increased \$9 million, or 1% on a reported basis, to \$634 million (27.1% of segment sales) in 2022 from \$625 million (26.8% of segment sales) in the comparable 2021 period. Health & Biosciences Segment Adjusted Operating EBITDA included approximately \$60 million attributable to N&B for the month of January in the 2022 period. The decrease in Health & Biosciences Segment Adjusted Operating EBITDA, excluding the impact of N&B for the month of January in the 2022 period, was primarily driven by volume decreases and the change in business portfolio mix, offset in part by favorable net pricing.

Scent Segment Adjusted Operating EBITDA

Scent Segment Adjusted Operating EBITDA decreased \$40 million, or 9% on a reported basis, to \$423 million (18.4% of segment sales) in 2022 from \$463 million (20.5% of segment sales) in the comparable 2021 period. On a currency neutral basis, Scent Segment Adjusted Operating EBITDA increased 1% in 2022 compared to the prior year period. The decrease, on a reported basis, was primarily driven by unfavorable impacts from exchange rate variations and net pricing, offset in part by volume increases in Fragrance Compounds.

Pharma Solutions Segment Adjusted Operating EBITDA

Pharma Solutions Segment Adjusted Operating EBITDA increased \$57 million, or 35% on a reported basis, to \$222 million (22.9% of segment sales) in 2022 from \$165 million (20.4% of segment sales) in the comparable 2021 period. Pharma Solutions Segment Adjusted Operating EBITDA included approximately \$12 million attributable to N&B for the month of January in the 2022 period. In addition, the increase in Pharma Solutions Segment Adjusted Operating EBITDA, excluding the impact of N&B for the month of January in the 2022 period, was primarily driven by favorable net pricing and volume increases.

2021 IN COMPARISON TO 2020

For a comparison of our results of operations for the fiscal years ended December 31, 2021 and December 31, 2020, see “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on February 28, 2022.

Liquidity and Capital Resources

Cash and Cash Equivalents

We had cash and cash equivalents of approximately \$535 million, inclusive of \$52 million currently in Assets held for sale on the Consolidated Balance Sheets, at December 31, 2022 compared to \$711 million at December 31, 2021 and of this balance, a portion was held outside the United States. Cash balances held in foreign jurisdictions are, in most circumstances, available to be repatriated to the United States.

Effective utilization of the cash generated by our international operations is a critical component of our strategy. We regularly repatriate cash from our non-U.S. subsidiaries to fund financial obligations in the U.S. As we repatriate these funds to the U.S. we will be required to pay income taxes in certain U.S. states and applicable foreign withholding taxes during the period when such repatriation occurs. Accordingly, as of December 31, 2022, we have a deferred tax liability of approximately \$166 million for the effect of repatriating the funds to the U.S.

Cash Flows Provided By Operating Activities

Cash flows provided by operating activities in 2022 were \$397 million, or 3.2% of sales, compared to \$1.437 billion, or 12.3% of sales, in 2021 and \$714 million, or 14.0% of sales, in 2020. The decrease in cash flows provided by operating activities from 2021 to 2022 was primarily driven by the increase in working capital, largely related to inventories and accounts payable. The increase in cash flows provided by operating activities from 2020 to 2021 was primarily driven by higher cash earnings, excluding the impact of non-cash adjustments, offset in part by the increase in working capital, largely related to inventories and accounts receivable.

Cash Flows Provided By (Used In) Investing Activities

Cash flows provided by investing activities in 2022 were \$745 million compared to cash flows used in investing activities of \$18 million and \$187 million in 2021 and 2020, respectively. The increase in cash flows from investing activities from 2021 to 2022 was primarily driven by the change in proceeds received from business divestiture and unwinding of derivative instruments, offset in part by the change in cash provided by the Merger with N&B, higher spending on property, plant and equipment and cash paid for acquisitions, net of cash received, in the current year period. The decrease in cash flows used in investing activities from 2020 to 2021 was primarily driven by the increase in cash provided by the Merger with N&B and higher net proceeds received from the sale of the Fruit Preparation business, offset in part by higher spending on property, plant and equipment in the 2021 period.

Additions to property, plant and equipment were \$504 million, \$393 million and \$192 million in 2022, 2021 and 2020, respectively (net of grants and other reimbursements from government authorities). These investments largely arise from our ongoing focus to align our manufacturing facilities with customer demand, primarily in emerging markets, and new technology consistent with our strategy.

We have evaluated and re-prioritized our capital projects and expect that capital spending in 2023 will be approximately 4.4% of sales (net of potential grants and other reimbursements from government authorities).

Cash Flows Used In Financing Activities

Cash flows used in financing activities in 2022 were \$1.229 billion compared to \$1.304 billion and \$512 million in 2021 and 2020, respectively. The decrease in cash used in financing activities from 2021 to 2022 was primarily driven by less repayments of long-term debt and an increase in revolving credit facility and short-term borrowings, offset in part by higher repayments of commercial paper, net of borrowings, higher cash dividend payments and higher purchases of redeemable non-controlling interest. The increase in cash flows used in financing activities from 2020 to 2021 was primarily driven by higher repayments of both short-term and long-term debt and higher cash dividend payments, offset in part by proceeds from issuance of commercial paper.

We paid dividends totaling \$810 million, \$667 million and \$323 million in 2022, 2021 and 2020, respectively. The cash dividend declared per share in 2022, 2021 and 2020 was \$3.20, \$3.12 and \$3.04, respectively.

Our capital allocation strategy is primarily focused on debt repayment to maintain our investment grade rating. We will also prioritize capital investment in our businesses to support the strategic long-term plans. We are also committed to maintaining our history of paying a dividend to investors determined by our Board of Directors at its discretion based on various factors.

We had a board approved stock repurchase program and as of May 7, 2018, we suspended our share repurchases. As of November 1, 2022, the program has expired.

Capital Resources

Operating cash flow provides the primary source of funds for capital investment needs, dividends paid to shareholders and debt service repayments. We anticipate that cash flows from operations and availability under our existing credit facilities will be sufficient to meet our investing and financing needs. We regularly assess our capital structure, including both current and long-term debt instruments, as compared to our cash generation and investment needs in order to provide ample flexibility and to optimize our leverage ratios. We believe our existing cash balances are sufficient to meet our debt service requirements.

Refer to Note 9 for additional information.

Transaction with Nutrition & Biosciences, Inc.

On February 1, 2021, the N&B Term Loan Facility was funded, which provided for a senior unsecured term loan credit facility in an aggregate principal amount of \$1.250 billion, comprised of a \$625 million three-year tranche (“2024 Term Loan Facility”) and a \$625 million five-year tranche (“2026 Term Loan Facility”). Following the Merger, we assumed the indebtedness incurred by N&B in the debt financings, which included (i) the 2024 Term Loan Facility and 2026 Term Loan Facility and (ii) a series of Senior Notes in the aggregate amount of \$6.250 billion with maturities ranging from 2 to 30 years. N&B’s indebtedness raised prior to the Merger was used to finance the Special Cash Payment to DuPont, which has been paid, and for the satisfaction of the related transaction fees and expenses.

Refer to Note 3 and Note 9 for additional information.

In connection with the N&B Transaction, a wholly owned subsidiary of IFF merged with and into N&B in exchange for 141,740,461 shares of IFF common stock, par value \$0.125 per share (“IFF Common Stock”), which had been approved in the special shareholder meeting that occurred on August 27, 2020 where IFF shareholders voted to approve the issuance of shares of IFF common stock in connection with the N&B Transaction pursuant to the Merger Agreement. In connection with the N&B Transaction, DuPont received a one-time \$7.359 billion special cash payment (the “Special Cash Payment”). The shares issued in the Merger represented approximately 55.4% of the common stock of IFF on a fully diluted basis, after giving effect to the Merger, as of February 1, 2021 (see Note 3 for additional information).

Amended Revolving Credit Facility and Term Loans

The Credit Agreements contain various covenants, limitations and events of default customary for similar facilities for similarly rated borrowers, including the requirement for us to maintain, at the end of each fiscal quarter, a ratio of net debt for borrowed money to Credit Adjusted EBITDA in respect of the previous 12-month period. On and after the Closing Date of the N&B Transaction, the 2024 Term Loan Facility and 2026 Term Loan Facility are also subject to a financial covenant requiring maintenance of a maximum consolidated leverage ratio of 4.75 to 1.0, with step downs to 3.50 to 1.0 over time, with the first step-down which occurred after the fiscal quarter ended December 31, 2021 and the final step-down occurring after the fiscal quarter ending June 30, 2023, with a step-up if the Company consummates certain qualified acquisitions. On August 4, 2022, we amended our existing Term Loan Credit Agreement and Amended Revolving Credit Facility, and the amendment delays certain step-downs from the maximum permitted leverage ratio of 4.50 to 1.0, stepping down to 3.50 to 1.0 over time, with the first step-down now occurring after the fiscal quarter ending June 30, 2023 and the final step-down now occurring after the fiscal quarter ending September 30, 2024, with a step-up if the Company consummates certain qualified acquisitions.

As of December 31, 2022, we had \$100 million outstanding borrowings under our \$2.000 billion Revolving Credit Facility. The amount that we are able to draw down under the Revolving Credit Facility is limited by financial covenants as described in more detail below. As of December 31, 2022, our borrowing capacity was approximately \$902 million under the Revolving Credit Facility.

See Note 9 to the Consolidated Financial Statements for additional information on our Credit Agreements.

Debt Covenants

At December 31, 2022 and 2021 we were in compliance with all financial and other covenants, including the net debt to credit adjusted EBITDA⁽¹⁾ ratio. At December 31, 2022 our net debt to credit adjusted EBITDA⁽¹⁾ ratio was 4.14 to 1.0 as defined by the credit facility agreements, which is below the relevant level provided by our financial covenants of existing outstanding debt.

- (1) Credit adjusted EBITDA and net debt, which are non-GAAP measures used for these covenants, are calculated in accordance with the definition in the debt agreements. In this context, these measures are used solely to provide information on the extent to which we are in compliance with debt covenants and may not be comparable to credit adjusted EBITDA and net debt used by other companies. Reconciliations of credit adjusted EBITDA to net (loss) income and net debt to total debt are as follows:

<i>(DOLLARS IN MILLIONS)</i>	Year Ended December 31, 2022	
Net loss	\$	(1,871)
Interest expense		336
Income taxes		239
Depreciation and amortization		1,179
Specified items ⁽¹⁾		2,605
Non-cash items ⁽²⁾		35
Credit Adjusted EBITDA	\$	2,523

- (1) Specified items for the 12 months ended December 31, 2022 of \$2.605 billion consisted of acquisition related costs, restructuring and other charges, impairment of goodwill, impairment of long-lived assets, shareholder activism related costs, business divestiture costs, employee separation costs, strategic initiative costs, Global Shared Services implementation costs, Frutarom acquisition related costs and integration related costs.
- (2) Non-cash items represent all other adjustments to reconcile net (loss) income to net cash provided by operations as presented on the Statements of Cash Flows, including gains on sale of fixed assets, gains on business disposal and stock-based compensation.

<i>(DOLLARS IN MILLIONS)</i>	December 31, 2022	
Total debt ⁽¹⁾	\$	10,987
Adjustments:		
Cash and cash equivalents ⁽²⁾		535
Net debt	\$	10,452

- (1) Total debt used for the calculation of net debt consists of short-term debt, long-term debt, short-term finance lease obligations and long-term finance lease obligations.
- (2) Cash and cash equivalents includes approximately \$52 million currently in Assets held for sale on the Consolidated Balance Sheets.

Senior Notes

As of December 31, 2022, we had \$9.330 billion aggregate principal amount outstanding in senior unsecured notes, with \$1.380 billion principal amount denominated in EUR and \$7.950 billion principal amount denominated in USD, which includes the N&B Senior Notes assumed as a result of the Merger. The notes bear interest ranging from 1.22% per year to 5.12% per year, with maturities from May 1, 2023 to December 1, 2050. See Note 9 to the Consolidated Financial Statements for additional information.

Tangible Equity Units - Senior Unsecured Amortizing Notes

On September 14, 2021, the Company notified holders of the tangible equity units (“TEUs”) that the final settlement rate in respect of each of the prepaid stock purchase contracts (“SPCs”) was 0.330911 shares of IFF’s common stock. On September 15, 2021, 5,460,031 shares of IFF’s common stock were issued in settlement of the SPCs. See Note 11 to the Consolidated Financial Statements for additional information.

Other Contingencies

See Note 19 to the Consolidated Financial Statements for information related to Other Contingencies.

Other Commitments

Compliance with existing governmental requirements regulating the discharge of materials into the environment has not materially affected our operations, earnings or competitive position. In 2022 and 2021, we spent approximately \$30 million and \$64 million on capital projects and \$135 million and \$78 million in operating expenses and governmental charges, respectively, for the purpose of complying with such regulations. Expenditures for these purposes will continue for the foreseeable future. In addition, we are party to a number of proceedings brought under the Comprehensive Environmental Response, Compensation and Liability Act or similar state statutes. It is expected that the impact of any judgments in or voluntary settlements of such proceedings will not be material to our financial condition, results of operations or liquidity.

Contractual Obligations

The Company believes its balances of cash and cash equivalents, which totaled approximately \$535 million as of December 31, 2022, inclusive of \$52 million currently in Assets held for sale on the Consolidated Balance Sheets, along with cash generated by ongoing operations and continued access to debt markets, will be sufficient to satisfy its cash requirements and capital return program over the next 12 months and beyond. The Company’s material cash requirements include the following contractual and other obligations.

Borrowings and Interest on Borrowings

As of December 31, 2022, the Company had outstanding floating and fixed rate notes with varying maturities for an aggregate principal amount of approximately \$10.580 billion (collectively the “Notes”), with \$300 million payable within 12 months. Future interest payments associated with the Notes total approximately \$4.006 billion, with \$258 million payable within 12 months.

The Company also issues unsecured short-term promissory notes (“Commercial Paper”) pursuant to a commercial paper program. As of December 31, 2022, the Company had \$187 million of Commercial Paper outstanding, all of which is payable within 12 months.

As of December 31, 2022, the Company had \$100 million outstanding under the Amended Revolving Credit Facility.

See Note 9 to the Consolidated Financial Statements for a further discussion of our various borrowing facilities.

Leases

The Company has lease arrangements for certain corporate offices, manufacturing facilities, research and development facilities, and certain transportation and office equipment. As of December 31, 2022, the Company had fixed lease payment obligations of approximately \$828 million, with \$117 million payable within 12 months. See Note 8 to the Consolidated Financial Statements for a further discussion of our various lease arrangements.

Pension and Other Postretirement Obligations

As of December 31, 2022, the Company had pension funding obligations of approximately \$788 million, with \$73 million payable within 12 months. See Note 15 to the Consolidated Financial Statements for a further discussion of our retirement plans.

As of December 31, 2022, the Company had postretirement obligations of approximately \$36 million, with \$3 million payable within 12 months.

Purchase Commitments

The Company has various purchase commitments that include agreements for raw material procurement and contractual capital expenditures. As of December 31, 2022, the Company had purchase commitment obligations of approximately \$231 million, with \$222 million payable within 12 months.

U.S. Tax Reform Toll-Charge

The Company has obligations related to a 2017 U.S. tax reform “toll-charge” that is payable in installments over 8 years beginning in 2018. As a result of the Merger with N&B, the remaining toll-charge obligations were accelerated and paid in full in the amount of approximately \$39 million in 2022. As of December 31, 2022, there were no toll-charge obligations remaining.

Critical Accounting Policies and Use of Estimates

Our significant accounting policies are more fully described in Note 1 to the Consolidated Financial Statements. As disclosed in Note 1, the preparation of financial statements in conformity with U.S. generally accepted accounting principles (“GAAP”) requires management to make estimates and assumptions that affect reported amounts and accompanying disclosures. These estimates are based on management’s best judgment of current events and actions that we may undertake in the future. Actual results may ultimately differ from these estimates.

Those areas requiring the greatest degree of management judgment or deemed most critical to our financial reporting involve:

Business Combinations

From time to time we enter into strategic acquisitions in an effort to better service existing customers and to attain new customers. When we acquire a controlling financial interest in an entity or group of assets that are determined to meet the definition of a business, we apply the acquisition method described in ASC Topic 805, Business Combinations. In accordance with GAAP, the results of the acquisitions we have completed are reflected in our financial statements from the date of acquisition forward.

We allocate the purchase consideration paid to acquire the business to the assets acquired and liabilities assumed based on estimated fair values at the acquisition date, with the excess of purchase price over the estimated fair value of the net assets acquired recorded as goodwill. If during the measurement period (a period not to exceed twelve months from the acquisition date) we receive additional information that existed as of the acquisition date but at the time of the original allocation described above was unknown to us, we make the appropriate adjustments to the purchase price allocation in the reporting period in which the amounts are determined.

Significant judgment is required to estimate the intangibles and fair value of fixed assets and in assigning their respective useful lives. Accordingly, we typically engage third-party valuation specialists, who work under the direction of management, to assist in valuing significant tangible and intangible assets acquired.

The fair value estimates are based on available historical information, future expectations and assumptions deemed reasonable by management, but are inherently uncertain.

We typically use an income method to estimate the fair value of intangible assets, which is based on forecasts of the expected future cash flows attributable to the respective assets. Significant estimates and assumptions inherent in the valuations reflect a consideration of other marketplace participants, and include the amount and timing of future cash flows (including expected growth rates, discount rates and profitability), royalty rates used in the relief of royalty method, customer attrition rates, product obsolescence factors, a brand’s relative market position and the discount rate applied to the cash flows. Unanticipated market or macroeconomic events and circumstances may occur, which could affect the accuracy or validity of the estimates and assumptions.

Determining the useful life of an intangible asset also requires significant judgment. All of our acquired intangible assets (e.g., trademarks, product formulas, non-compete agreements and customer relationships) are expected to have finite useful lives. Our estimates of the useful lives of finite-lived intangible assets are based on a number of factors including competitive environment, market share, brand history, operating plans and the macroeconomic environment of the regions in which the brands are sold.

The costs of finite-lived intangible assets are amortized through expense over their estimated lives. The value of residual goodwill is not amortized, but is tested at least annually for impairment as described in the following note. For acquired intangible assets, the remaining useful life of the trade names and trademarks, product formulas, and customer relationships was estimated at the point at which substantially all of the present value of cumulative cash flows have been earned.

The Periodic Assessment of Potential Impairment of Goodwill

As of December 31, 2022, we have goodwill of approximately \$13.355 billion. We test goodwill for impairment at the reporting unit level as of November 30 every year or more frequently if events or changes in circumstances indicate the asset might be impaired. A reporting unit is an operating segment or one level below an operating segment (referred to as a component) to which goodwill is assigned when initially recorded.

We identify our reporting units by assessing whether the components of our operating segments constitute businesses for which discrete financial information is available and management of each operating segment regularly reviews the operating results of those components. Components within a segment that have similar economic characteristics have been aggregated as a single reporting unit. We determined that we have six reporting units under the Nourish, Health & Biosciences, Scent and Pharma Solutions segments: (1) Nourish, (2) Fragrance Compounds, (3) Fragrance Ingredients, (4) Cosmetic Actives, (5) Health & Biosciences and (6) Pharma Solutions.

For the annual impairment test as of November 30, 2022, we elected to bypass the qualitative assessment for all reporting units, Step 0 of the guidance in ASC Topic 350, Intangibles – Goodwill and Other, which allows for the assessment of qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. For all six reporting units, we performed a Step 1 test.

We assessed the fair value of the reporting units using an income approach. Under the income approach, we determined the fair value by using a discounted cash flow method at a rate of return that reflects the relative risk of the projected future cash flows of each reporting unit, as well as a terminal value. We used the most current actual and forecasted operating data available. Key estimates and assumptions used in these valuations include revenue growth rates, gross margins, EBITDA margins, terminal growth rates and discount rates.

In performing the quantitative impairment test, we determined that the fair value of the six reporting units exceeded their carrying values and determined that there was no further impairment of goodwill at any of our six reporting units as of November 30, 2022. Based on the quantitative impairment test performed, we determined that all reporting units except the Health & Biosciences reporting unit had excess fair value over carrying value of more than 25%. The Health & Biosciences reporting unit had excess fair value over carrying value of approximately 3%.

If current long-term projections for these reporting units are not realized or materially decrease, we may be required to write-off all or a portion of the goodwill. Such charge could have a material effect on the Consolidated Statements of Operations and Balance Sheets.

For the third quarter of 2022, we determined that goodwill impairment triggering events occurred for our Nourish, Health & Biosciences and Pharma Solutions reporting units, which required us to complete an interim impairment assessment. As a result of the triggering events, we assessed the fair value of the reporting units using the income approach.

In performing the quantitative impairment test, we determined that the fair value of the Nourish and Pharma Solutions reporting units exceeded their carrying value, and determined that there was no impairment of goodwill relating to these reporting units. We determined that the carrying value of the Health & Biosciences reporting unit exceeded its fair value and recorded a goodwill impairment charge of \$2.250 billion in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022 (see Note 6 to the Consolidated Financial Statements for additional information).

The Periodic Assessment of Potential Impairment of Long-lived Assets

We review long-lived assets for impairment when events or changes in business conditions indicate that their full carrying value may not be recovered. An estimate of undiscounted future cash flows produced by an asset or group of assets is compared to the carrying value to determine whether impairment exists. If assets are determined to be impaired, the loss is measured based on an estimate of fair value using various valuation techniques, including a discounted estimate of future cash flows.

As previously mentioned, due to the uncertainties related to our operations in Russia and Ukraine, we recorded a charge of approximately \$120 million related to the impairment of certain long-lived assets in Russia in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022 (see Note 1 to the Consolidated Financial Statements for additional information).

New Accounting Standards

See Note 1 to the Consolidated Financial Statements for a discussion of recent accounting pronouncements.

Non-GAAP Financial Measures

We use non-GAAP financial measures in this Form 10-K, including: (i) currency neutral metrics and (ii) adjusted operating EBITDA and adjusted operating EBITDA margin. We also provide the non-GAAP measure net debt solely for the purpose of providing information on the extent to which the Company is in compliance with debt covenants contained in its debt agreements. Our non-GAAP financial measures are defined below.

These non-GAAP financial measures are intended to provide additional information regarding our underlying operating results and comparable year-over-year performance. Such information is supplemental to information presented in accordance with GAAP and is not intended to represent a presentation in accordance with GAAP. In discussing our historical and expected future results and financial condition, we believe it is meaningful for investors to be made aware of and to be assisted in a better understanding of, on a period-to-period comparable basis, financial amounts both including and excluding these identified items, as well as the impact of exchange rate fluctuations. These non-GAAP measures should not be considered in isolation or as substitutes for analysis of the Company's results under GAAP and may not be comparable to other companies' calculation of such metrics.

Adjusted operating EBITDA and adjusted operating EBITDA margin exclude depreciation and amortization expense, interest expense, other (expense) income, net, restructuring and other charges and certain non-recurring or unusual items such as acquisition related costs, gains on sale of fixed assets, impairment of goodwill, impairment of long-lived assets, shareholder activism related costs, business divestiture costs, employee separation costs, strategic initiative costs, Global Shared Services implementation costs, Frutarom acquisition related costs, N&B inventory step-up costs, N&B transaction related costs and integration related costs.

Net debt to credit adjusted EBITDA is the leverage ratio used in our credit agreement and defined as net debt divided by credit adjusted EBITDA. However, as credit adjusted EBITDA for these purposes was calculated in accordance with the provisions of the credit agreement, it may differ from the calculation used for adjusted operating EBITDA.

Cautionary Statement Under the Private Securities Litigation Reform Act of 1995

Statements in this Form 10-K, which are not historical facts or information, are "forward-looking statements" within the meaning of The Private Securities Litigation Reform Act of 1995. Such forward-looking statements are based on management's current assumptions, estimates and expectations and include statements concerning (i) the expected impact of global supply chain challenges; (ii) expectations regarding sales and profit for the fiscal year 2023, including the impact of foreign exchange, pricing actions, raw materials, energy, and sourcing, logistics and manufacturing costs; (iii) expectations of the impact of inflationary pressures and the pricing actions to offset exposure to such impacts; (iv) the impact of high input costs, including commodities, raw materials, transportation and energy; (v) our ability to drive cost discipline measures and the ability to recover margin to pre-inflation levels; (vi) the progress of our portfolio optimization strategy, through non-core business divestitures and acquisitions, and expectations regarding the implementation of our refreshed growth-focused strategy; (vii) the ongoing impact of COVID-19 and our plans to respond to its global implications; (viii) the success of our integration efforts, following the N&B Transaction, and ability to deliver on our synergy commitments as well as future opportunities for the combined company; (ix) the success of the optimization of our portfolio; (x) the impact of global economic uncertainty and recessionary pressures on demand for consumer products; (xi) the growth potential of the markets in which we operate, including the emerging markets, (xii) expected capital expenditures in 2023; (xiii) the expected costs and benefits of our ongoing optimization of our manufacturing operations, including the expected number of closings; (xiv) expected cash flow and availability of capital resources to fund our operations and meet our debt service requirements; (xv) our ability to enhance our innovation efforts, drive cost efficiencies and execute on specific consumer trends and demands; (xvi) our strategic investments in capacity and increasing inventory to drive improved profitability; and (xvii) our ability to continue to generate value for, and return cash to, our shareholders. These forward-looking statements should be evaluated with consideration given to the many risks and uncertainties inherent in our business that could cause actual results and events to differ materially from those in the forward-looking statements. Certain of such forward-looking information may be identified by such terms as "expect", "anticipate", "believe", "intend", "outlook", "may", "estimate", "should", "predict" and similar terms or variations thereof. Such forward-looking statements are based on a series of expectations, assumptions, estimates and projections about the Company, are not guarantees of future results or performance, and involve significant risks, uncertainties and other factors, including assumptions and projections, for all forward periods. Our actual results may differ materially from any future results expressed or implied by such forward-looking statements. Such risks, uncertainties and other factors include, among others, the following:

- inflationary trends, including in the price of our input costs, such as raw materials, transportation and energy;
- supply chain disruptions, geopolitical developments, including the Russia-Ukraine conflict, or climate-change related events (including severe weather events) that may affect our suppliers or procurement of raw materials;
- our ability to successfully execute the next phase of our strategic transformation;

- risks related to the integration of the N&B business, including whether we will realize the benefits anticipated from the merger in the expected time frame;
- our substantial amount of indebtedness and its impact on our liquidity, credit ratings and ability to return capital to its shareholders;
- our ability to enter into or close strategic transactions or divestments, or successfully establish and manage acquisitions, collaborations, joint ventures or partnerships;
- our ability to successfully market to our expanded and diverse customer base;
- our ability to effectively compete in our market and develop and introduce new products that meet customers' needs;
- our ability to retain key employees;
- changes in demand from large multi-national customers due to increased competition and our ability to maintain "core list" status with customers;
- our ability to successfully develop innovative and cost-effective products that allow customers to achieve their own profitability expectations;
- the impact of global health crises, such as the COVID-19 pandemic, on our supply chains, global operations, our customers and our suppliers;
- disruption in the development, manufacture, distribution or sale of our products from natural disasters (such as the COVID-19 pandemic), public health crises, international conflicts (such as the Russia and Ukraine Conflict), terrorist acts, labor strikes, political or economic crises (such as the uncertainty related to protracted U.S. federal debt ceiling negotiations), accidents and similar events;
- volatility and increases in the price of raw materials, energy and transportation;
- the impact of a significant data breach or other disruption in our information technology systems, and our ability to comply with data protection laws in the U.S. and abroad;
- our ability to comply with, and the costs associated with compliance with, regulatory requirements and industry standards, including regarding product safety, quality, efficacy and environmental impact;
- our ability to meet increasing customer, consumer, shareholder and regulatory focus on sustainability;
- defects, quality issues (including product recalls), inadequate disclosure or misuse with respect to the products and capabilities;
- our ability to react in a timely and cost-effective manner to changes in consumer preferences and demands, including increased awareness of health and wellness;
- our ability to benefit from our investments and expansion in emerging markets;
- the impact of currency fluctuations or devaluations in the principal foreign markets in which we operate;
- economic, regulatory and political risks associated with our international operations;
- the impact of global economic uncertainty (including increased inflation) on demand for consumer products;
- our ability to comply with, and the costs associated with compliance with, U.S. and foreign environmental protection laws;
- our ability to successfully manage our working capital and inventory balances;
- the impact of our or our counterparties' failure to comply with the U.S. Foreign Corrupt Practices Act, similar U.S. or foreign anti-bribery and anti-corruption laws and regulations, applicable sanctions laws and regulations in the jurisdictions in which we operate or ethical business practices and related laws and regulations;
- any impairment on our tangible or intangible long-lived assets, including goodwill associated with the N&B merger and the acquisition of Frutarom;
- our ability to protect our intellectual property rights;
- the impact of the outcomes of legal claims, regulatory investigations and litigation;
- changes in market conditions or governmental regulations relating to our pension and postretirement obligations;
- the impact of changes in federal, state, local and international tax legislation or policies, including the Tax Cuts and Jobs Act, with respect to transfer pricing and state aid, and adverse results of tax audits, assessments, or disputes;
- the impact of the United Kingdom's departure from the European Union;
- the impact of the phase out of the London Interbank Offered Rate (LIBOR) on interest expense;
- the impact of any tax liability resulting from the N&B Transaction; and
- our ability to comply with data protection laws in the U.S. and abroad.

The foregoing list of important factors does not include all such factors, nor necessarily present them in order of importance. In addition, you should consult other disclosures made by the Company (such as in our other filings with the SEC or in company press releases) for other factors that may cause actual results to differ materially from those projected by the Company. Please refer to Part I, Item 1A., Risk Factors, of this Form 10-K for additional information regarding factors that could affect our results of operations, financial condition and liquidity.

We intend our forward-looking statements to speak only as of the time of such statements and do not undertake or plan to update or revise them as more information becomes available or to reflect changes in expectations, assumptions or results. We can give no assurance that such expectations or forward-looking statements will prove to be correct. An occurrence of, or any material adverse change in, one or more of the risk factors or risks and uncertainties referred to in this report or included in our other periodic reports filed with the SEC could materially and adversely impact our operations and our future financial results.

Any public statements or disclosures made by us following this report that modify or impact any of the forward-looking statements contained in or accompanying this report will be deemed to modify or supersede such outlook or other forward-looking statements in or accompanying this report.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

We operate on a global basis and are exposed to currency fluctuation related to the manufacture and sale of our products in currencies other than the U.S. dollar. The major foreign currencies involve the markets in the European Union, Great Britain, Mexico, Brazil, China, India, Indonesia, Australia, Russia and Japan, although all regions are subject to foreign currency fluctuations versus the U.S. dollar. We actively monitor our foreign currency exposures in all major markets in which we operate, and employ a variety of techniques to mitigate the impact of exchange rate fluctuations, including foreign currency hedging activities.

We have established a centralized reporting system to evaluate the effects of changes in interest rates, currency exchange rates and other relevant market risks. Our risk management procedures include the monitoring of interest rate and foreign exchange exposures and hedge positions utilizing statistical analyses of cash flows, market value and sensitivity analysis. However, the use of these techniques to quantify the market risk of such instruments should not be construed as an endorsement of their accuracy or the accuracy of the related assumptions. For the year ended December 31, 2022, our exposure to market risk was estimated using sensitivity analyses, which illustrate the change in the fair value of a derivative financial instrument assuming hypothetical changes in foreign exchange rates and interest rates.

We enter into foreign currency forward contracts with the objective of reducing exposure to cash flow volatility associated with foreign currency receivables and payables, and with anticipated purchases of certain raw materials used in operations. These contracts, the counterparties to which are major international financial institutions, generally involve the exchange of one currency for a second currency at a future date, and have maturities not exceeding twelve months. The gain or loss on the hedging instrument and services is recorded in earnings at the same time as the transaction being hedged is recorded in earnings. At December 31, 2022, our foreign currency exposures pertaining to derivative contracts exist with the Euro. Based on a hypothetical decrease or increase of 10% in the applicable balance sheet exchange rates (primarily against the U.S. dollar), the estimated fair value of our foreign currency forward contracts would increase by approximately \$18 million. However, any change in the value of the contracts, real or hypothetical, would be significantly offset by a corresponding change in the value of the underlying hedged items.

We use derivative instruments as part of our interest rate risk management strategy. We have entered into certain cross currency swap agreements in order to mitigate a portion of our net European investments from foreign currency risk. As of December 31, 2022, these swaps were in a net liability position with an aggregate fair value of \$37 million. Based on a hypothetical decrease or increase of 10% in the value of the U.S. dollar against the Euro, the estimated fair value of our cross currency swaps would change by approximately \$141 million.

At December 31, 2022, the fair value of our EUR fixed rate debt was \$1.293 billion. Based on a hypothetical decrease or increase of 10% in foreign exchange rates, the estimated fair value of our EUR fixed rate debt would change by approximately \$115 million.

At December 31, 2022, the fair value of our USD fixed rate debt was \$6.387 billion. Based on a hypothetical decrease or increase of 10% in interest rates, the estimated fair value of our US fixed rate debt would change by approximately \$639 million.

We purchase certain commodities, such as natural gas, electricity, petroleum-based products and certain crop related items. We generally purchase these commodities based upon market prices that are established with the vendor as part of the purchase process. In general, we do not use commodity financial instruments to hedge commodity prices.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

See index to Consolidated Financial Statements on page 50.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

ITEM 9A. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures and Changes in Internal Control over Financial Reporting.

Our Chief Executive Officer and Chief Financial Officer, with the assistance of other members of our management, have evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Form 10-K. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures are effective as of the end of the period covered by this Form 10-K.

We have established controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms and is accumulated and communicated to management, including the principal executive officer and the principal financial officer, to allow timely decisions regarding required disclosure.

Our Chief Executive Officer and Chief Financial Officer have concluded that there have not been any changes in our internal control over financial reporting during the fourth quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2022. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in its 2013 *Internal Control — Integrated Framework*.

Based on this assessment, management determined that, as of December 31, 2022, our internal control over financial reporting was effective.

PricewaterhouseCoopers LLP, our independent registered public accounting firm, has audited the effectiveness of our internal control over financial reporting as of December 31, 2022 as stated in their report which is included herein.

ITEM 9B. OTHER INFORMATION.

None.

ITEM 9C. DISCLOSURES REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

The information relating to directors and nominees of the Company is set forth in the IFF 2023 Proxy Statement and is incorporated by reference herein. The information relating to Section 16(a) beneficial ownership reporting compliance that appears in the IFF 2023 Proxy Statement is also incorporated by reference herein. See Part I, Item 1 of this Form 10-K for information relating to the Company's Executive Officers.

We have adopted a Code of Conduct (the “Code of Conduct”) that applies to all of our employees, including our chief executive officer and our chief financial officer. We have also adopted a Code of Conduct for Directors and a Code of Conduct for Executive Officers (together with the Code of Conduct, the “Codes”). The Codes are available through the Investors — Governance link on our website at <https://ir.iff.com/governance>.

Only the Board of Directors or the Audit Committee of the Board may grant a waiver from any provision of our Codes in favor of a director or executive officer, and any such waiver will be publicly disclosed. We will disclose substantive amendments to and any waivers from the Codes provided to our chief executive officer, principal financial officer or principal accounting officer, as well as any other executive officer or director, on the Company’s website: www.iff.com.

The information regarding the Company’s Audit Committee and its designated audit committee financial experts is set forth in the IFF 2023 Proxy Statement and such information is incorporated by reference herein.

The information concerning procedures by which shareholders may recommend director nominees is set forth in the IFF 2023 Proxy Statement and such information is incorporated by reference herein.

ITEM 11. EXECUTIVE COMPENSATION.

The items required by Part III, Item 11 are incorporated herein by reference from the IFF 2023 Proxy Statement to be filed on or before April 28, 2023, except as to information required pursuant to Item 402(v) of Regulation S-K relating to pay versus performance.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The items required by Part III, Item 12 are incorporated herein by reference from the IFF 2023 Proxy Statement to be filed on or before April 28, 2023.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The items required by Part III, Item 13 are incorporated herein by reference from the IFF 2023 Proxy Statement to be filed on or before April 28, 2023.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The items required by Part III, Item 14 are incorporated herein by reference from the IFF 2023 Proxy Statement to be filed on or before April 28, 2023.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a)(1) FINANCIAL STATEMENTS: The following consolidated financial statements, related notes, and independent registered public accounting firm’s report are included in this Form 10-K:

Report of Independent Registered Public Accounting Firm (PCAOB ID: 238)	51
Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the years ended December 31, 2022, 2021 and 2020	53
Consolidated Balance Sheets as of December 31, 2022 and 2021	54
Consolidated Statements of Cash Flows for the years ended December 31, 2022, 2021 and 2020	55
Consolidated Statements of Shareholders’ Equity for the years ended December 31, 2022, 2021 and 2020	56
Notes to Consolidated Financial Statements	57

(a)(3) EXHIBITS	111
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(a)(2) FINANCIAL STATEMENT SCHEDULES	
Schedule II — Valuation and Qualifying Accounts and Reserves for the years ended December 31, 2022, 2021 and 2020	S-1

All other schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of International Flavors & Fragrances Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of International Flavors & Fragrances Inc. and its subsidiaries (the “Company”) as of December 31, 2022 and 2021, and the related consolidated statements of (loss) income and comprehensive (loss) income, of shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Interim Goodwill Impairment Assessment - Health & Biosciences Reporting Unit

As described in Notes 1 and 6 to the consolidated financial statements, the Company's goodwill balance was \$13.355 billion as of December 31, 2022, and the goodwill related to the Health & Biosciences reportable segment was \$4.321 billion. The Company has determined that the Health & Biosciences segment is also a reporting unit. Management tests goodwill for impairment at the reporting unit level as of November 30 every year or more frequently if events or changes in circumstances indicate the asset might be impaired. If a reporting unit's carrying amount exceeds its fair value, the Company will record an impairment charge based on that difference. For the third quarter of 2022, management determined that a goodwill impairment triggering event occurred for the Health & Biosciences reporting unit. Management assessed the fair value of the reporting units using an income approach. Under the income approach, management determined the fair value by using a discounted cash flow method at a rate of return that reflects the relative risk of the projected future cash flows of each reporting unit, as well as a terminal value. Key estimates and assumptions used in these valuations include revenue growth rates, gross margins, EBITDA margins, terminal growth rates and discount rates. For the third quarter of 2022, management determined that the carrying value of the Health & Biosciences reporting unit exceeded its fair value and recorded a goodwill impairment charge of \$2.250 billion.

The principal considerations for our determination that performing procedures relating to the interim goodwill impairment assessment of the Health & Biosciences reporting unit is a critical audit matter are (i) the significant judgment by management when developing the fair value estimate of the Health & Biosciences reporting unit; (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's significant assumptions related to revenue growth rates, gross margins, EBITDA margins, terminal growth rate, and discount rate; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's interim goodwill impairment assessment, including controls over the valuation of the Health & Biosciences reporting unit. These procedures also included, among others (i) testing management's process for developing the fair value estimate of the Health & Biosciences reporting unit; (ii) evaluating the appropriateness of the discounted cash flow method; (iii) testing the completeness and accuracy of the underlying data used in the discounted cash flow method; and (iv) evaluating the reasonableness of the significant assumptions used by management related to revenue growth rates, gross margins, EBITDA margins, terminal growth rate, and discount rate. Evaluating management's significant assumptions related to revenue growth rates, gross margins, and EBITDA margins involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the Health & Biosciences reporting unit; (ii) the consistency with external market and industry data; and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the discounted cash flow method and (ii) the reasonableness of the significant assumptions related to the terminal growth rate and discount rate.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 27, 2023

We have served as the Company's auditor since 1957.

INTERNATIONAL FLAVORS & FRAGRANCES INC.
CONSOLIDATED STATEMENTS OF (LOSS) INCOME AND COMPREHENSIVE (LOSS) INCOME

<i>(DOLLARS IN MILLIONS EXCEPT PER SHARE AMOUNTS)</i>	Year Ended December 31,		
	2022	2021	2020
Net sales	\$ 12,440	\$ 11,656	\$ 5,084
Cost of goods sold	8,289	7,921	2,998
Gross profit	4,151	3,735	2,086
Research and development expenses	603	629	357
Selling and administrative expenses	1,768	1,749	949
Restructuring and other charges	12	41	17
Amortization of acquisition-related intangibles	727	732	193
Impairment of goodwill	2,250	—	—
Impairment of long-lived assets	120	—	—
(Gains) losses on sale of fixed assets	(3)	(1)	4
Operating (loss) profit	(1,326)	585	566
Interest expense	336	289	132
Other income, net	(37)	(58)	(7)
(Loss) income before taxes	(1,625)	354	441
Provision for income taxes	239	75	74
Net (loss) income	(1,864)	279	367
Net income attributable to non-controlling interest	7	9	4
Net (loss) income attributable to IFF shareholders	\$ (1,871)	\$ 270	\$ 363
Statements of Comprehensive (Loss) Income			
Net (loss) income	\$ (1,864)	\$ 279	\$ 367
Other comprehensive (loss) income, after tax:			
Foreign currency translation adjustments	(904)	(848)	88
Gains (losses) on derivatives qualifying as hedges	—	8	(9)
Pension and postretirement liability adjustment	158	115	(60)
Other comprehensive (loss) income	(746)	(725)	19
Comprehensive (loss) income	(2,610)	(446)	386
Net income attributable to non-controlling interest	7	9	4
Comprehensive (loss) income attributable to IFF shareholders	\$ (2,617)	\$ (455)	\$ 382
Net (loss) income per share — basic	\$ (7.32)	\$ 1.11	\$ 3.25
Net (loss) income per share — diluted	\$ (7.32)	\$ 1.10	\$ 3.21
Average number of shares outstanding - basic	255	243	112
Average number of shares outstanding - diluted	255	243	114

See Notes to Consolidated Financial Statements

**INTERNATIONAL FLAVORS & FRAGRANCES INC.
CONSOLIDATED BALANCE SHEETS**

(DOLLARS IN MILLIONS)	December 31,	
	2022	2021
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 483	\$ 711
Restricted cash	10	4
Receivables:		
Trade	1,871	1,952
Allowance for doubtful accounts	(53)	(46)
Inventories	3,151	2,516
Assets held for sale	1,200	1,122
Prepaid expenses and other current assets	770	728
Total Current Assets	7,432	6,987
Property, plant and equipment, net	4,203	4,368
Goodwill	13,355	16,414
Other intangible assets, net	9,082	10,506
Operating lease right-of-use assets	636	767
Other assets	699	616
Total Assets	\$ 35,407	\$ 39,658
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current Liabilities:		
Bank borrowings, overdrafts and current portion of long-term debt	\$ 410	\$ 308
Commercial paper	187	324
Accounts payable	1,418	1,532
Accrued payroll and bonus	267	335
Dividends payable	206	201
Liabilities held for sale	212	101
Other current liabilities	1,028	832
Total Current Liabilities	3,728	3,633
Other Liabilities:		
Long-term debt	10,373	10,768
Retirement liabilities	231	385
Deferred income taxes	2,265	2,518
Operating lease liabilities	565	670
Other liabilities	472	462
Total Other Liabilities	13,906	14,803
Commitments and Contingencies (Note 19)		
Redeemable non-controlling interests	59	105
Shareholders' Equity:		
Common stock \$0.125 par value; 500,000,000 shares authorized; 275,726,629 and 275,726,629 shares issued as of December 31, 2022 and December 31, 2021, respectively; and 254,968,463 and 254,573,984 shares outstanding as of December 31, 2022 and December 31, 2021, respectively	35	35
Capital in excess of par value	19,841	19,826
Retained earnings	955	3,641
Accumulated other comprehensive loss	(2,169)	(1,423)
Treasury stock, at cost (20,758,166 and 21,152,645 shares as of December 31, 2022 and December 31, 2021, respectively)	(978)	(997)
Total Shareholders' Equity	17,684	21,082
Non-controlling interest	30	35
Total Shareholders' Equity including non-controlling interest	17,714	21,117
Total Liabilities and Shareholders' Equity	\$ 35,407	\$ 39,658

See Notes to Consolidated Financial Statements

INTERNATIONAL FLAVORS & FRAGRANCES INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

<i>(DOLLARS IN MILLIONS)</i>	Year Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net (loss) income	\$ (1,864)	\$ 279	\$ 367
Adjustments to reconcile to net cash provided by operating activities:			
Depreciation and amortization	1,179	1,156	325
Deferred income taxes	(237)	(236)	(68)
(Gains) losses on sale of fixed assets	(3)	(1)	4
Gains on business divestiture	(11)	—	—
Stock-based compensation	49	54	36
Pension contributions	(36)	(37)	(24)
Amortization of inventory step-up	—	368	—
Impairment of goodwill	2,250	—	—
Impairment of long-lived assets	120	—	—
Changes in assets and liabilities, net of acquisitions:			
Trade receivables	(117)	(169)	(61)
Inventories	(893)	(363)	18
Accounts payable	(57)	419	28
Accruals for incentive compensation	(34)	96	44
Other current payables and accrued expenses	92	4	57
Other assets/liabilities, net	(41)	(133)	(12)
Net cash provided by operating activities	397	1,437	714
Cash flows from investing activities:			
Cash paid for acquisitions, net of cash received	(110)	—	—
Additions to property, plant and equipment	(504)	(393)	(192)
Additions to intangible assets	(2)	(4)	—
Proceeds from disposal of assets	8	18	17
Proceeds from unwinding of derivative instruments	173	—	—
Cash provided by the Merger with N&B	11	246	—
Net proceeds received from business divestiture	1,169	115	—
Maturity of net investment hedges	—	—	(14)
Proceeds from life insurance contracts	—	—	2
Net cash provided by (used in) investing activities	745	(18)	(187)
Cash flows from financing activities:			
Cash dividends paid to shareholders	(810)	(667)	(323)
Dividends paid to redeemable non-controlling interest	—	(2)	—
Increase (decrease) in revolving credit facility and short term borrowings	104	(105)	—
Proceeds from issuance of commercial paper (maturities after three months)	225	—	—
Repayments of commercial paper (maturities after three months)	(421)	—	—
Net borrowings of commercial paper (maturities less than three months)	48	324	—
Deferred financing costs	—	(3)	(3)
Repayments of long-term debt	(300)	(828)	(347)
Purchases of redeemable non-controlling interest	(47)	—	(22)
Proceeds from issuance of long-term debt	—	3	200
Contingent consideration paid	—	(14)	(9)
Proceeds from issuance of stock in connection with stock options	—	9	—
Employee withholding taxes paid	(21)	(21)	(8)
Other, net	(7)	—	—
Net cash used in financing activities	(1,229)	(1,304)	(512)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(77)	(59)	21
Net change in cash, cash equivalents and restricted cash	(164)	56	36
Cash, cash equivalents and restricted cash at beginning of year	716	660	624
Cash, cash equivalents and restricted cash at end of year	\$ 552	\$ 716	\$ 660
Supplemental Disclosures:			
Interest paid, net of amounts capitalized	\$ 310	\$ 310	\$ 128
Income taxes paid	329	289	133
Accrued capital expenditures	150	117	41

See Notes to Consolidated Financial Statements

INTERNATIONAL FLAVORS & FRAGRANCES INC.
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

<i>(DOLLARS IN MILLIONS)</i>	Common stock		Capital in excess of par value	Retained earnings	Accumulated other comprehensive (loss) income	Treasury stock		Non-controlling interest	Total
	Shares	Cost				Shares	Cost		
Balance at December 31, 2019	128,526,137	\$ 16	\$ 3,823	\$ 4,118	\$ (717)	(21,738,838)	\$ (1,023)	\$ 12	\$ 6,229
Net income				363				1	364
Cumulative translation adjustment					88				88
Losses on derivatives qualifying as hedges; net of tax \$1					(9)				(9)
Pension liability and postretirement adjustment; net of tax \$(9)					(60)				(60)
Cash dividends declared (\$3.04 per share)				(325)					(325)
Stock options/SSARs						57,652	3		3
Vested restricted stock units and awards			(8)			93,039	3		(5)
Stock-based compensation			36						36
Redeemable NCI			2						2
Dividends on non-controlling interest and other								(1)	(1)
Balance at December 31, 2020	128,526,137	\$ 16	\$ 3,853	\$ 4,156	\$ (698)	(21,588,147)	\$ (1,017)	\$ 12	\$ 6,322
Net income				270				3	273
Cumulative translation adjustment					(848)				(848)
Gain on derivatives qualifying as hedges; net of tax \$(1)					8				8
Pension liability and postretirement adjustment; net of tax \$(4)					115				115
Cash dividends declared (\$3.12 per share)				(785)					(785)
Stock options/SSARs			4			159,222	7		11
Impact of N&B Merger	141,740,461	18	15,936					22	15,976
Conversion of tangible equity units	5,460,031	1	(1)						—
Vested restricted stock units and awards			(18)			276,280	13		(5)
Stock-based compensation			54						54
Redeemable NCI			(2)						(2)
Dividends on non-controlling interest and other								(2)	(2)
Balance at December 31, 2021	275,726,629	\$ 35	\$ 19,826	\$ 3,641	\$ (1,423)	(21,152,645)	\$ (997)	\$ 35	\$ 21,117
Net loss				(1,871)				3	(1,868)
Cumulative translation adjustment					(904)				(904)
Pension liability and postretirement adjustment; net of tax \$(4)					158				158
Cash dividends declared (\$3.20 per share)				(815)					(815)
Stock options/SSARs			11			85,728	4		15
Vested restricted stock units and awards			(41)			308,751	15		(26)
Stock-based compensation			49						49
Purchase of NCI			1					(6)	(5)
Redeemable NCI			(5)						(5)
Dividends on non-controlling interest and other								(2)	(2)
Balance at December 31, 2022	275,726,629	\$ 35	\$ 19,841	\$ 955	\$ (2,169)	(20,758,166)	\$ (978)	\$ 30	\$ 17,714

See Notes to Consolidated Financial Statements

INTERNATIONAL FLAVORS & FRAGRANCES INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1. NATURE OF OPERATIONS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations

International Flavors & Fragrances Inc. and its subsidiaries (the “Registrant,” “IFF,” “the Company,” “we,” “us” and “our”) is a leading creator and manufacturer of food, beverage, health & biosciences, scent and pharma solutions and complementary adjacent products, including cosmetic active and natural health ingredients, which are used in a wide variety of consumer products. Our products are sold principally to manufacturers of perfumes and cosmetics, hair and other personal care products, soaps and detergents, cleaning products, dairy, meat and other processed foods, beverages, snacks and savory foods, sweet and baked goods, sweeteners, dietary supplements, food protection, infant and elderly nutrition, functional food, and pharmaceutical excipients and oral care products.

Basis of Presentation

On February 1, 2021 (the “Closing Date”), the Company completed the combination (the “Merger”) of IFF and DuPont de Nemours, Inc (“DuPont”) nutrition and biosciences business (the “N&B Business”), which had been transferred to Nutrition and Biosciences, Inc., a Delaware corporation and wholly owned subsidiary of DuPont (“N&B”) in a Reverse Morris Trust transaction. See Note 3 for additional information. As a result, the Company’s Consolidated Financial Statements for the period ended December 31, 2022 reflect the results of N&B for the full twelve months of 2022, whereas the period ended December 31, 2021 reflect the results of N&B from the Closing Date and the period ended December 31, 2020 do not reflect any results of N&B.

Certain reclassifications have been made to the prior periods’ financial information in order to conform to the current period’s presentation.

Fiscal Year End

Effective 2021, the Company changed its fiscal year end from a 52/53-week fiscal year ending on the Friday closest to the last day of the quarter, to a calendar year of the twelve-month period from January 1 to December 31. The Company elected to change its fiscal year end in connection with the Merger with N&B to align the Company’s fiscal year with N&B’s. The 2022, 2021 and 2020 fiscal years were 52 week periods. For ease of presentation, December 31 is used consistently throughout the financial statements and notes to represent the period-end date. For the 2022 and 2021 fiscal years, the actual closing dates were December 31 and for the 2020 fiscal year, the actual closing date was January 1.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (“U.S. GAAP”) requires management to make estimates and judgments that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. The inputs into our judgments and estimates take into account the current economic implications of the novel coronavirus (“COVID-19”), the events in Russia and Ukraine, and the ongoing adverse macroeconomic environment on our critical and significant accounting estimates, including estimates associated with future cash flows that are used in assessing the risk of impairment of certain assets. Actual results could differ from those estimates.

Principles of Consolidation

The consolidated financial statements include the accounts of International Flavors & Fragrances Inc. and those of its subsidiaries. Significant intercompany balances and transactions have been eliminated. To the extent a subsidiary is not wholly owned, any related non-controlling interests are included as a separate component of Shareholders’ Equity.

Revenue Recognition

The Company recognizes revenue from contracts with customers when the contract or purchase order has received approval and commitment from both parties, has the rights of the parties and payment terms (which can vary by customer) identified, has commercial substance, collectability of consideration is probable, and control has transferred. The revenue recognized reflects the consideration the Company expects to be entitled to in exchange for those goods. Sales, value added, and other taxes the Company collects are excluded from revenues. The Company receives payment in accordance with standard customer terms.

Sales are reduced, at the time revenue is recognized, for applicable discounts, rebates and sales allowances based on historical experience. Related accruals are included in Other current liabilities in the accompanying Consolidated Balance Sheets. The Company considers shipping and handling activities undertaken after the customer has obtained control of the related goods as a fulfillment activity. Net sales include shipping and handling charges billed to customers. Cost of goods sold includes all costs incurred in connection with shipping and handling.

Contract Assets and Liabilities

With respect to a small number of contracts for the sale of compounds, the Company has an “enforceable right to payment for performance to date” and as the products do not have an alternative use, the Company recognizes revenue for these contracts over time and records a contract asset using the output method. The output method recognizes revenue on the basis of direct measurements of the value to the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract.

As of December 31, 2022 and 2021, the Company’s gross accounts receivable was \$1.871 billion and \$1.952 billion, respectively. The Company’s contract assets and contract liabilities as of December 31, 2022 and 2021 were not material.

Foreign Currency Translation

The Company translates the assets and liabilities of non-U.S. subsidiaries into U.S. dollars at year-end exchange rates. Income and expense items are translated at average exchange rates during the year. Cumulative translation adjustments are shown as a separate component of Shareholders’ Equity.

Research and Development

Research and development (“R&D”) expenses relate to the development of new and improved products, technical product support and compliance with governmental regulation. All research and development costs are expensed as incurred.

Cash and Cash Equivalents

Cash and cash equivalents include highly liquid investments with maturities of three months or less at date of purchase.

Restricted Cash

Restricted cash is comprised of cash or cash equivalents which has been placed into an account that is restricted for a specific use and from which the Company cannot withdraw the cash on demand.

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported in the Company’s statement of cash flows periods ended December 31, 2022, 2021 and 2020 to the amounts reported in the Company’s balance sheets as of December 31, 2022, 2021 and 2020.

<i>(DOLLARS IN MILLIONS)</i>	December 31, 2022	December 31, 2021	December 31, 2020
Current assets			
Cash and cash equivalents	\$ 483	\$ 711	\$ 650
Cash and cash equivalents included in Assets held for sale	52	—	—
Restricted cash	10	4	7
Non-current assets			
Restricted cash included in Other assets	7	1	3
Cash, cash equivalents and restricted cash	\$ 552	\$ 716	\$ 660

Accounts Receivable

The Company has certain factoring agreements in the U.S. and The Netherlands under which it can factor up to €250 million of its trade receivables. The factoring agreements supplement the Company’s existing factoring programs that are sponsored by certain customers. Under all of the arrangements, the Company sells the trade receivables on a non-recourse basis to unrelated financial institutions and accounts for the transactions as sales of receivables. The applicable receivables are removed from the Company’s Consolidated Balance Sheets when the cash proceeds are received by the Company.

The Company sold approximately \$1.030 billion, \$668 million and \$351 million of receivables in 2022, 2021 and 2020, respectively. The outstanding principal amounts of receivables under these arrangements amounted to approximately \$212 million, \$153 million and \$57 million, respectively, as of December 31, 2022, 2021 and 2020. The proceeds from the sales of receivables are included in net cash from operating activities in the Consolidated Statements of Cash Flows. The cost of participating in these programs was approximately \$12 million, \$6 million and \$4 million in 2022, 2021 and 2020, respectively, and is included as a component of interest expense.

Expected Credit Losses

The Company is exposed to credit losses primarily through its sales of products. To determine the appropriate allowance for expected credit losses, the Company considers certain credit quality indicators, such as aging, collection history, and creditworthiness of debtors. Regional and Global Credit committees review and approve specific customer allowance reserves. The allowance for expected credit losses is primarily based on two primary factors: i) the aging of the different categories of trade receivables, and ii) a specific reserve for accounts identified as uncollectible.

The Company also considers current and future economic conditions in the determination of the allowance. At December 31, 2022, the Company reported \$1.818 billion of trade receivables, net of allowances of \$53 million. Based on the aging analysis as of December 31, 2022, approximately 1% of the Company's accounts receivable were past due by over 365 days based on the payment terms of the invoice.

The following is a roll forward of the Company's allowances for bad debts for the years ended December 31, 2021 and 2022:

<i>(DOLLARS IN MILLIONS)</i>	Allowance for Bad Debts	
Balance at December 31, 2020	\$	21
Bad debt expense		6
Write-offs		(1)
Other adjustments ⁽¹⁾		20
Balance at December 31, 2021		46
Bad debt expense ⁽²⁾		19
Foreign exchange		(12)
Balance at December 31, 2022	\$	53

(1) The adjustment to allowances for bad debts was a result of purchase price allocation related to the Merger with N&B.

(2) The bad debt expense included approximately \$11 million related to expected credit losses on receivables from customers located in Russia and Ukraine (for export and domestic sales) due to recent events in those countries. The Company will continue to evaluate its credit exposure related to Russia and Ukraine.

Inventories

Inventories are stated at the lower of cost (on a weighted-average basis) or net realizable value. The Company's inventories consisted of the following:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Raw materials	\$ 1,073	\$ 854
Work in process	442	287
Finished goods	1,636	1,375
Total	\$ 3,151	\$ 2,516

Leases

The Company determines if an arrangement is a lease at contract inception. A lease exists when a contract conveys to the customer the right to control the use of identified property, plant, or equipment for a period of time in exchange for consideration. The definition of a lease embodies two conditions: (1) there is an identified asset in the contract that is land or a depreciable asset (i.e., property, plant, and equipment), and (2) the customer has the right to control the use of the identified asset.

When the Company determines the arrangement is a lease, or contains a lease, at inception, it then determines whether the lease is an operating lease or a finance lease at the commencement date.

The Company leases property and equipment, principally under operating leases. The Company records a right of use asset and related obligation at the present value of lease payments and, over the term of the lease, depreciates the right of use asset and accretes the obligation to future value. Some of the leases include rental escalation clauses, renewal options and/or termination options that are factored into the determination of lease payments when appropriate. The Company has elected not to separate non-lease components from lease components for all classes of leased assets.

When available, the Company uses the rate implicit in the lease to discount lease payments to present value, however, most of the Company's leases do not provide a readily determinable implicit rate and the Company calculates the applicable incremental borrowing rate to discount the lease payments based on the term of the lease at lease commencement. The incremental borrowing rate is determined based on the Company's credit rating, currency and lease terms.

Long-Lived Assets

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation is calculated on a straight-line basis, principally over the following estimated useful lives: buildings and improvements, 1 to 50 years; machinery and equipment, 1 to 40 years; information technology hardware and software, 1 to 23 years; and leasehold improvements which are included in buildings and improvements, the estimated life of the improvements or the remaining term of the lease, whichever is shorter.

Finite-Lived Intangible Assets

Finite-lived intangible assets include customer relationships, patents, trade names, technological know-how and other intellectual property valued at acquisition and amortized on a straight-line basis over the following estimated useful lives: customer relationships, 10 to 27 years; patents, 11 to 15 years; trade names, 4 to 28 years; and technological know-how, 5 to 28 years.

The Company reviews long-lived assets for impairment when events or changes in business conditions indicate that their carrying value may not be recovered. An estimate of undiscounted future cash flows produced by an asset or group of assets is compared to the carrying value to determine whether impairment exists. If assets are determined to be impaired, the loss is measured based on an estimate of fair value using various valuation techniques, including a discounted estimate of future cash flows.

Impairment of Long-Lived Assets

During the second quarter of 2022, the sales and margins declined for certain entities within Russia due to supply chain issues, reduced product demand and exchange rate volatility. Additionally, future growth is expected to be limited given operating conditions in Russia, which inhibit the required future investment.

In connection with uncertainties related to the Company's operations in Russia and Ukraine, the Company updated its analysis of the undiscounted cash flows of the applicable asset groups to determine if the cash flows exceeded the carrying values of the applicable asset groups. With respect to an asset group in the Nourish segment, that manufactures and sells in Russia and related markets, it was determined that the undiscounted cash flows were insufficient to cover the carrying value and that an impairment charge was required to write-down the long-lived assets to their fair values. The fair value of such asset group was determined based on a discounted cash flow approach which involved estimating the future cash flows for the business discounted to their present values. The discount rate used in the determination of such fair value was based on consideration of the risks inherent in the cash flows and market as of the valuation date.

As a result of this assessment, the Company recognized an impairment charge of \$120 million in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022, which was allocated on a pro rata basis to intangible assets and property, plant and equipment within the asset group in the amounts of approximately \$92 million and \$28 million, respectively.

Goodwill

Goodwill represents the difference between the total purchase price and the fair value of identifiable assets and liabilities acquired in business acquisitions.

The Company tests goodwill for impairment at the reporting unit level as of November 30 every year or more frequently if events or changes in circumstances indicate the asset might be impaired. A reporting unit is an operating segment or one level below an operating segment (referred to as a component) to which goodwill is assigned when initially recorded.

The Company identifies their reporting units by assessing whether the components of their reporting units constitute businesses for which discrete financial information is available and management of each reporting unit regularly reviews the operating results of those components. The Company determined that it has six reporting units under the Nourish, Health & Biosciences, Scent and Pharma Solutions segments: (1) Nourish, (2) Fragrance Compounds, (3) Fragrance Ingredients, (4) Cosmetic Actives, (5) Health & Biosciences and (6) Pharma Solutions. These reporting units were determined based on the level at which the performance is measured and reviewed by segment management. In cases where the components of an operating segment have similar economic characteristics, they are aggregated into a single reporting unit.

When testing goodwill for impairment, the Company has the option of first performing a qualitative assessment to determine whether it is more likely than not that the fair value of a reporting unit is less than the carrying amount. If the Company elects to bypass the qualitative assessment for any reporting units, or if a qualitative assessment indicates it is more likely than not that the estimated carrying value of a reporting unit exceeds its fair value, the Company performs a quantitative goodwill impairment test.

Under the quantitative goodwill impairment test, if a reporting unit's carrying amount exceeds its fair value, the Company will record an impairment charge based on that difference, and the impairment charge will be limited to the amount of goodwill allocated to that reporting unit.

For the third quarter of 2022, the Company determined that the carrying value of the Health & Biosciences reporting unit exceeded its fair value and recorded a goodwill impairment charge of \$2.250 billion in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022 (see Note 6 for additional information).

Income Taxes

The Company accounts for taxes under the asset and liability method. Under this method, deferred income taxes are recognized for temporary differences between the financial statement and tax return bases of assets and liabilities, based on enacted tax rates and other provisions of the tax law. The effect of a change in tax laws or rates on deferred tax assets and liabilities is recognized as income in the period in which such change is enacted. Future tax benefits are recognized to the extent that the realization of such benefits is more likely than not, and a valuation allowance is established for any portion of a deferred tax asset that management believes may not be realized.

The Company recognizes uncertain tax positions that it has taken or expects to take on a tax return. Pursuant to accounting requirements, the Company first determines whether it is "more likely than not" its tax position will be sustained if the relevant tax authority were to audit the position with full knowledge of all the relevant facts and other information. For those tax positions that meet this threshold, the Company measures the amount of tax benefit based on the largest amount of tax benefit that it has a greater than 50% chance of realizing in a final settlement with the relevant authority. Those tax positions failing to qualify for initial recognition are recognized in the first interim period in which they meet the more likely than not standard. The Company maintains a cumulative risk portfolio relating to all of its uncertainties in income taxes in order to perform this analysis, but the evaluation of its tax positions requires significant judgment and estimation in part because, in certain cases, tax law is subject to varied interpretation, and whether a tax position will ultimately be sustained may be uncertain.

Interest and penalties related to unrecognized tax benefits are recognized as a component of income tax expense.

Retirement Benefits

Current service costs of retirement plans and postretirement health care and life insurance benefits are accrued. Prior service costs resulting from plan improvements are amortized over periods ranging from 10 to 20 years.

Financial Instruments

Derivative financial instruments are used to manage interest and foreign currency exposures. The gain or loss on the hedging instrument is recorded in earnings at the same time as the transaction being hedged is recorded in earnings. The associated asset or liability related to the open hedge instrument is recorded in Prepaid expenses and Other current assets or Other current liabilities, as applicable.

The Company records all derivative financial instruments on the balance sheet at fair value. Changes in a derivative's fair value are recognized in earnings unless specific hedge criteria are met. If the derivative is designated as a fair value hedge, the changes in the fair value of the derivative and of the hedged item attributable to the hedged risk are recognized in Net (loss) income. If the derivative is designated as a cash flow hedge, the effective portions of changes in the fair value of the derivative are recorded in Accumulated Other Comprehensive Income (Loss) ("AOCI") in the accompanying Consolidated Balance Sheets and are subsequently recognized in Net income when the hedged item affects earnings. Ineffective portions of changes in the fair value of cash flow hedges, if any, are recognized as a charge or credit to earnings.

Software Costs

The Company capitalizes direct internal and external development costs for certain significant projects associated with internal-use software and amortizes these costs over seven years. Neither preliminary evaluation costs nor costs associated with the software after implementation are capitalized. Costs related to projects that are not significant are expensed as incurred.

Net (Loss) Income Per Share

Under the two-class method, earnings are adjusted by accretion of amounts to redeemable non-controlling interests recorded at redemption value. The adjustments represent in-substance dividend distributions to the non-controlling interest holders as the holders have a contractual right to receive a specified amount upon redemption. As a result, earnings are adjusted to reflect this in-substance distribution that is different from other common shareholders. In addition, the Company has unvested share based payment awards with a right to receive nonforfeitable dividends and thus are considered participating securities which are required to be included in the computation of basic and diluted earnings per share.

Basic (loss) income per share represents the amount of earnings available to each share of common stock outstanding during the period. Basic (loss) income per share includes the effect of issuing shares of common stock, where (i) for 2021, the prepaid stock purchase contracts (“SPCs”) were converted using the final settlement rate on September 14, 2021 (see Note 11 for additional information) and for 2020, the prepaid SPCs were converted into the minimum number of shares of common stock under the if-converted method, and (ii) an adjustment to (loss) income to reflect adjustments made to record the redeemable value of redeemable non-controlling interests. Diluted (loss) income per share also includes the effect of issuing shares of common stock, assuming (i) stock options and warrants are exercised, (ii) restricted stock units are fully vested under the treasury stock method, and (iii) for 2021, the incremental effect of the prepaid SPCs were converted using the final settlement rate on September 14, 2021 (see Note 11 for additional information) and for 2020, the incremental effect of the prepaid SPCs were converted into the maximum number of shares of common stock under the if-converted method.

Stock-Based Compensation

Compensation cost of all stock-based awards is measured at fair value on the date of grant and recognized over the service period for which awards are expected to vest. The cost of such stock-based awards is principally recognized on a straight-line attribution basis over their respective vesting periods, net of estimated forfeitures.

Financing Costs

Costs incurred in the issuance of debt are deferred and amortized as part of interest expense over the stated life of the applicable debt instrument. Unamortized deferred financing costs relating to debt are presented as a reduction in the amount of debt outstanding on the Consolidated Balance Sheets. Unamortized deferred financing costs relating to the revolving credit facility are recorded in Other assets on the Consolidated Balance Sheets.

Redeemable Non-controlling Interests

Non-controlling interests in subsidiaries that are redeemable for cash or other assets outside of the Company’s control are classified as mezzanine equity, outside of equity and liabilities, at the greater of the carrying value or the redemption value. The increases or decreases in the estimated redemption amount are recorded with corresponding adjustments against Capital in excess of par value and are reflected in the computation of earnings per share using the two-class method.

Held for Sale

Assets and liabilities to be disposed of by sale (“disposal groups”) are reclassified into assets and liabilities held for sale on the Company’s Consolidated Balance Sheets. The reclassification occurs when an agreement to sell exists, or management has committed to a plan to sell the assets within one year. Disposal groups are measured at the lower of carrying value or fair value less costs to sell and are not depreciated or amortized. When the net realizable value of a disposal group increases during a period, a gain can be recognized to the extent that it does not increase the value of the disposal group beyond its original carrying value when the disposal group was reclassified as held for sale. The fair value of a disposal group, less any costs to sell, is assessed each reporting period it remains classified as held for sale and any remeasurement to the lower of carrying value or fair value less costs to sell is reported as an adjustment to the carrying value of the disposal group. See Note 21 for additional information.

Recent Accounting Pronouncements

In December 2022, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2022-06, “Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848.” The ASU was issued to provide an update on ASU 2020-04 and ASU 2021-01 that were issued in March 2020 and January 2021, respectively, which provided optional accounting guidance for a limited period of time to ease the potential burden in accounting for reference rate reform. The guidance provides optional expedients and exceptions to existing accounting requirements for contract modifications and hedge accounting related to transitioning from discontinued reference rates, such as London Interbank Offered Rate (“LIBOR”), to alternative reference rates, if certain criteria are met. With the issuance of ASU 2022-06, the sunset date of Topic 848 has been deferred from December 31, 2022 to December 31, 2024, after which entities will no longer be permitted to apply the relief in Topic 848. The Company is currently evaluating the impact of this guidance, but does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In November 2021, the FASB issued ASU 2021-10, “Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance.” The ASU requires annual disclosures about transactions with a government that are accounted for by applying a grant or contribution accounting model by analogy. This guidance is effective for all entities for annual periods beginning after December 15, 2021 and early adoption is permitted. This guidance was adopted by the Company as of January 1, 2022 using the prospective method of adoption. The adoption of this guidance did not have a material impact on the Consolidated Financial Statements.

In October 2021, the FASB issued ASU 2021-08, “Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers.” The ASU is intended to provide specific guidance on how to recognize and measure acquired contract assets and liabilities from revenue contracts in a business combination. An acquirer needs to recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606, Revenue from Contracts with Customers. At the acquisition date, an acquirer should account for the related revenue contracts in accordance with Topic 606 as if it had originated the contracts. To achieve this, an acquirer may assess how the acquiree applied Topic 606 to determine what to record for the acquired revenue contracts. This guidance is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years, and early adoption is permitted, including adoption in an interim period. The Company early adopted ASU 2021-08 during the second quarter of 2022. The adoption of this guidance did not have a material impact on the Consolidated Financial Statements.

NOTE 2. RESTRUCTURING AND OTHER CHARGES

Restructuring and other charges primarily consist of separation costs for employees including severance, outplacement and other benefit (“Severance”) costs as well as costs related to plant closures, principally related to fixed asset write-downs (“Fixed asset write-down”) and all other related restructuring (“Other”) costs. All restructuring and other charges are separately stated on the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income.

Frutarom Integration Initiative

In connection with the acquisition of Frutarom, the Company has been executing an integration plan that, among other initiatives, seeks to optimize its manufacturing network (the “Frutarom Integration Initiative”). As part of the Frutarom Integration Initiative, the Company expects to close approximately 30 manufacturing sites with all closures targeted to occur by the end of 2023. Since the inception of the initiative through December 31, 2022, the Company has closed 22 sites and expensed total costs of approximately \$39 million. Total costs for the program are expected to be approximately \$42 million including cash and non-cash items.

2019 Severance Program

During 2019, the Company incurred severance charges related to approximately 190 headcount reductions, excluding those previously mentioned under the Frutarom Integration Initiative. The headcount reductions primarily related to the Scent business unit with additional amounts related to headcount reductions in all business units associated with the establishment of a new shared service center in Europe. Since the program’s inception, the Company has expensed approximately \$15 million. As of the third quarter of 2022, the program is complete.

2017 Productivity Program

In connection with 2017 Productivity Program, the Company recorded \$24 million of charges related to personnel costs and lease termination costs since the program’s inception. As of December 31, 2020, the program was completed.

Other Restructuring Charges

For 2022, 2021 and 2020, the Company incurred total charges of approximately \$4 million primarily related to the severance costs in connection with the closure of a facility in Germany.

N&B Merger Restructuring Liability

For 2022, the Company incurred approximately \$15 million of charges related to severance, lease termination costs, and lease impairment charges. Since the inception of the restructuring activities, there have been approximately 240 headcount reductions and the Company has expensed approximately \$45 million.

Changes in Restructuring Liability

Movements in severance-related accruals during 2020, 2021 and 2022 are as follows:

<i>(DOLLARS IN MILLIONS)</i>	Balance at January 1, 2020	Additional Charges (Reversals), Net	Non-Cash Charges	Cash Payments	Balance at December 31, 2020
<u>2017 Productivity Program</u>					
Severance	\$ 1	\$ (1)	\$ —	\$ —	\$ —
<u>Frutarom Integration Initiative</u>					
Severance	4	2	—	(3)	3
Fixed asset write down	—	12	(12)	—	—
Other ⁽¹⁾	3	2	—	(2)	3
<u>2019 Severance Program</u>					
Severance	13	(1)	—	(6)	6
<u>Other Restructuring Charges</u>					
Severance	—	3	—	(1)	2
Total restructuring	\$ 21	\$ 17	\$ (12)	\$ (12)	\$ 14

<i>(DOLLARS IN MILLIONS)</i>	Balance at January 1, 2021	Additional Charges (Reversals), Net	Non-Cash Charges	Cash Payments	Balance at December 31, 2021
<u>Frutarom Integration Initiative</u>					
Severance	\$ 3	\$ 5	\$ —	\$ (3)	\$ 5
Fixed asset write down	—	5	(5)	—	—
Other ⁽¹⁾	3	—	—	—	3
<u>2019 Severance Program</u>					
Severance	6	—	—	(1)	5
<u>Other Restructuring Charges</u>					
Severance	2	—	—	(1)	1
Other ⁽²⁾	—	1	—	(1)	—
<u>N&B Merger Restructuring Liability</u>					
Severance	—	27	—	(12)	15
Other ⁽³⁾	—	3	(3)	—	—
Total restructuring	\$ 14	\$ 41	\$ (8)	\$ (18)	\$ 29

<i>(DOLLARS IN MILLIONS)</i>	Balance at January 1, 2022	Additional Charges (Reversals), Net	Non-Cash Charges	Cash Payments	Balance at December 31, 2022
<u>Frutarom Integration Initiative</u>					
Severance	\$ 5	\$ 1	\$ —	\$ (2)	\$ 4
Fixed asset write down	—	3	(3)	—	—
Other ⁽¹⁾	3	(2)	—	(1)	—
<u>2019 Severance Program</u>					
Severance	5	(5)	—	—	—
<u>Other Restructuring Charges</u>					
Severance	1	—	—	—	1
<u>N&B Merger Restructuring Liability</u>					
Severance	15	8	—	(14)	9
Other ⁽³⁾	—	7	(2)	(4)	1
Total restructuring	\$ 29	\$ 12	\$ (5)	\$ (21)	\$ 15

- (1) Includes supplier contract termination costs, consulting and advisory fees.
- (2) Includes charges related to legal settlement costs.
- (3) Includes lease impairment charges and losses incurred from restructuring activities as a result of the Merger with N&B.

Charges by Segment

The following table summarizes the total amount of costs incurred in connection with these restructuring programs and activities by segment:

<i>(DOLLARS IN MILLIONS)</i>	December 31,		
	2022	2021	2020
Nourish	\$ 8	\$ 32	\$ 10
Health & Biosciences	2	5	—
Scent	1	3	7
Pharma Solutions	1	1	—
Total Restructuring and other charges	\$ 12	\$ 41	\$ 17

NOTE 3. ACQUISITIONS

Acquisition of Health Wright Products

On April 1, 2022 (“Acquisition Date”), the Company completed its acquisition of Health Wright Products, Inc. (“Health Wright”). IFF acquired 100% of the equity of Health Wright pursuant to a purchase agreement entered into on February 16, 2022. Health Wright is known in the consumer Health and Nutrition industries for providing high quality nutritional supplements. The acquisition was made in order to strengthen formulation and finished format capabilities to IFF’s Health & Biosciences probiotics, natural extracts and botanical businesses.

The acquisition was accounted for under the purchase method. The fair value of consideration transferred was approximately \$157 million, including cash and estimated contingent consideration of \$31 million. The preliminary purchase price allocation has been performed and resulted in intangible assets of approximately \$75 million, and approximately \$45 million of goodwill (which is deductible for income tax purposes). The intangible assets primarily consisted of customer relationships of approximately \$74 million that have been fair valued using the Multi-Period Excess Earning Method and which are being amortized over a period of approximately 19 years.

The purchase price allocation was finalized as of the end of 2022 when the Company finalized the valuation of the acquired goodwill, intangible assets (trade names and customer relationships) and inventory, in addition to ensuring all other assets and liabilities and contingencies have been identified and recorded.

The Company remeasured the fair value of contingent consideration as of December 31, 2022 and recognized a credit of approximately \$5 million, within Selling and administrative expenses, for changes in the fair value of contingent consideration obligations. The reduction in the fair value of contingent consideration primarily resulted from changes in the probability assessment of achieving the performance targets.

The measurement period adjustments were recorded during the year ended December 31, 2022 and the purchase price allocation is complete as of December 31, 2022.

No pro forma information for 2022 was presented as the acquisition was not material to the Consolidated Financial Statements.

Transaction with Nutrition & Biosciences, Inc.

On February 1, 2021, IFF completed the Merger with N&B. Pursuant to the transaction related agreements, DuPont transferred its N&B Business to N&B, a wholly-owned subsidiary of DuPont, and N&B merged with and into a wholly owned subsidiary of IFF in exchange for 141,740,461 shares of IFF common stock, par value \$0.125 per share (“IFF Common Stock”).

The Company completed its Merger with N&B in a Reverse Morris Trust transaction (the “Transactions”), pursuant to which the Company acquired the N&B Business of DuPont. In the Transactions, among other steps (i) DuPont transferred the N&B Business to N&B (the “Separation”); (ii) N&B made a cash distribution to DuPont of approximately \$7.359 billion, subject to certain adjustments (the “Special Cash Payments”); (iii) DuPont distributed to its stockholders all of the issued and outstanding shares of N&B common stock by way of an exchange offer (the “Distribution”), and; (iv) N&B merged with and into a wholly owned subsidiary of IFF. As a result of the Merger, the existing shares of N&B common stock were automatically converted into the right to receive a number of shares of IFF Common Stock. Immediately after the Merger, holders of DuPont’s common stock that received shares of N&B common stock in the Distribution owned approximately 55.4% of the outstanding shares of IFF Common Stock on a fully diluted basis and existing holders of IFF Common Stock owned approximately 44.6% of the outstanding shares of IFF on a fully diluted basis.

The Merger was accounted for using the purchase method of accounting in accordance with ASC Topic 805, Business Combinations, with IFF identified as the acquirer. As a result of the Merger, N&B’s assets, liabilities and the operating results of N&B were included in the Company’s financial statements from the Closing Date. N&B contributed net sales of approximately \$6.084 billion and net income of approximately \$11 million for the year ended December 31, 2021, which included the effects of purchase accounting adjustments, primarily related to changes in amortization of intangible assets, depreciation of property, plant and equipment and amortization of stepped up inventory.

Prior to the Distribution, N&B incurred new indebtedness in the form of term loans and senior notes in an aggregate principal amount of \$7.500 billion to pay the Special Cash Payments made to DuPont stockholders. See Note 9 for additional information regarding the new term loans and senior notes incurred by N&B and subsequently assumed by IFF.

Purchase Price

The following table summarizes the aggregate purchase price consideration paid to acquire N&B (in millions, except share and per share data):

(DOLLARS IN MILLIONS)

Fair value of common stock issued to DuPont stockholders ⁽¹⁾	\$	15,929
Fair value attributable to pre-merger service for replacement equity awards ⁽²⁾		25
Pension funding adjustment ⁽³⁾		(12)
Total purchase consideration	<u>\$</u>	<u>15,942</u>

(1) The fair value of common stock issued to DuPont stockholders represents 141,740,461 shares of the Company’s common stock determined based on the number of fully diluted shares of IFF common stock, immediately prior to the Closing Date, multiplied by the quotient of 55.4%/44.6% and IFF common stock closing share price of \$112.38 on the New York Stock Exchange on the Closing Date.

(2) At the time of the Transactions, each outstanding stock option, cash-settled stock appreciation right (“SAR”), restricted stock unit (“RSU”) award, and restricted stock award (“RSA”) with respect to DuPont common stock held by employees of N&B were canceled and converted into similar classes of equity awards of IFF’s Class A Common Stock. Further, each outstanding Performance Share Unit (“PSU”) award with respect to DuPont common stock held by employees of N&B were canceled and converted into IFF’s RSU awards. The conversion was based on the ratio of the volume-weighted average per share closing price of DuPont stock on the twenty trading days prior to the Closing Date and IFF’s stock on the twenty trading days following the Closing Date. The fair value of replacement equity-based awards attributable to pre-Merger service was recorded as part of the consideration transferred in the Merger (see Note 13 for additional information).

(3) The Merger related agreements provided that if the net pension balance of N&B as of the Closing Date differs from \$220 million, such differential amount would be settled in cash. The Company estimated the amount that it would receive and, accordingly, made an adjustment of \$12 million to the total purchase consideration.

Purchase Price Allocation

The Merger with N&B was accounted for under the acquisition method under which the Company allocated the purchase consideration to the tangible net assets and identifiable assets acquired based on estimated fair values at the Closing Date, and recorded the excess of consideration over the fair values of net assets acquired as goodwill. The purchase price allocation was finalized as of the end of 2021 when the Company finalized the valuation of the acquired property, plant and equipment, goodwill, intangible assets (trade names, customer relationships, IPR&D, and technological know-how), inventory and leases, in addition to ensuring all other assets and liabilities and contingencies had been identified and recorded. Further, the assessment of certain contingencies including loss contracts and environmental liabilities, pension and postretirement benefit obligations and taxes was completed. Additionally, in connection with finalizing the purchase price allocation, the Company finalized the projected combined future tax rate applied to the valuation of assets and recorded the applicable adjustments to the values of goodwill and intangible assets.

The following table summarizes the fair values of the assets acquired and liabilities assumed as of February 1, 2021, presenting both the preliminary and final purchase price allocations:

<i>(DOLLARS IN MILLIONS)</i>	Preliminary Estimated Fair Value as Reported in the First Quarter of 2021	Measurement Period Adjustments ⁽¹⁾⁽²⁾	Final Fair Value as Reported in the Fourth Quarter of 2021
Cash and cash equivalents	\$ 207	\$ (14)	\$ 193
Receivables	962	(9)	953
Inventory	1,615	(25)	1,590
Prepaid expenses and other current assets	342	32	374
Property, plant and equipment	3,242	(176)	3,066
Deferred income taxes	75	8	83
Intangible assets	9,176	47	9,223
Other assets	702	116	818
Accounts payable and accrued liabilities	(1,028)	(51)	(1,079)
Accrued payroll and employee benefits	(163)	15	(148)
Deferred tax liabilities ⁽³⁾	(2,369)	(26)	(2,395)
Long-term debt	(7,636)	—	(7,636)
Other long-term liabilities	(907)	12	(895)
Total identifiable net assets assumed	4,218	(71)	4,147
Non-controlling interest	(26)	4	(22)
Goodwill ⁽⁴⁾	11,762	55	11,817
Purchase price	\$ 15,954	\$ (12)	\$ 15,942

- (1) The preliminary fair value purchase price allocation of the assets and liabilities acquired in the N&B Merger as reported in the first quarter of 2021 were updated during the nine months ended December 31, 2021 to reflect updated fair values for intangible assets, property, plant and equipment, equity method investments and inventory. In addition, the carrying amounts of certain assets and liabilities were updated based on additional analysis of acquired assets and liabilities that existed at the Closing Date.
- (2) During the fourth quarter of 2021, the Company recorded an adjustment to reflect the receipt of approximately \$53 million in cash from DuPont as a result of finalization of adjustments to the Special Cash Payment paid to DuPont by N&B, prior to the close of the Transactions.
- (3) The change to deferred tax liabilities was primarily a result of the finalization of the jurisdictional allocation of the tangible and intangible assets. All measurement period adjustments were offset against goodwill.
- (4) The cumulative impact of the adjustments during the nine months ended December 31, 2021 resulted in a \$55 million increase to goodwill.

Acquired inventory is comprised of finished goods, work in process and raw materials. The fair value of finished goods was calculated as the estimated selling price, adjusted for costs of the selling effort and a reasonable profit allowance relating to the selling effort. The fair value of work in process inventory was primarily calculated as the estimated selling price, adjusted for estimated costs to complete the manufacturing, estimated costs of the selling effort, as well as a reasonable profit margin on the remaining manufacturing and selling effort. The fair value of raw materials and supplies was determined based on replacement cost which approximates historical carrying value. The fair value step-up has been amortized to “Cost of goods sold” in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income, for the year ended December 31, 2021, as the inventory was sold.

The fair value of property, plant and equipment was primarily calculated using the cost approach, which determined the replacement costs for the assets and adjusted them for their age and condition. The fair value of the land assets was determined via the sales comparison approach.

The long-term debt assumed was comprised of a Term Loan Facility and Notes. The fair value of the Notes was determined on the basis of unadjusted quoted prices on an over-the-counter market. The fair value of the long-term debt assumed as part of the Term Loan Facility was based on the total indebtedness at the time of closing the Merger. See Note 9 for additional information regarding the new term loans and senior notes incurred by N&B and subsequently assumed by IFF.

The Company recognized \$11.817 billion of goodwill in connection with the N&B Merger, which was in part attributable to expected synergies generated by the integration of N&B including cross-selling benefits as well as cost synergies. Substantially all of the goodwill was not deductible for income tax purposes. Goodwill of \$2.900 billion, \$6.712 billion, \$876 million and \$1.329 billion was allocated to the Nourish, Health & Biosciences, Scent and Pharma Solutions segments, respectively.

The fair value and useful lives of the identifiable intangible assets assumed as of February 1, 2021 were as follows:

<i>(DOLLARS IN MILLIONS)</i>	Amounts	Useful Lives
Indefinite-lived intangible assets		
In-process research and development	\$	13 Indefinite
Finite-lived intangible assets		
Trade names		261 4 to 22 years
Customer relationships		6,734 11 to 27 years
Technological know-how		2,194 5 to 18 years
Other		21 2 years
Total finite-lived intangible assets		9,210
Total	\$	9,223

The fair value of intangible assets was generally determined using an income method (specifically, for customer relationships, the multi-period excess earnings method), which was based on forecasts of the expected future cash flows attributable to the respective assets. Significant estimates and assumptions inherent in the valuations reflected a consideration of other market participants, and included the amount and timing of future cash flows (including revenue growth rates, gross margins and operating expenses), royalty rates used in the relief from royalty method, customer attrition rates, product obsolescence factors, a brand's relative market position and the discount rates applied to the cash flows. Unanticipated market or macroeconomic events and circumstances may occur, which could affect the accuracy or validity of the estimates and assumptions. Determining the useful life of an intangible asset also required significant judgment. Trade names, customer relationships and technological know-hows are expected to have finite lives. The costs of finite lived intangible assets are amortized through expense over their estimated lives.

Lease liabilities, included in "Other current liabilities" and "Operating lease liabilities" in the Consolidated Balance Sheets, at the Closing Date, were remeasured at the present value of the future minimum lease payments over the remaining lease term and the incremental borrowing rate of the Company as if the acquired leases were new leases as of the Closing Date. Right-of-use assets included in "Operating lease right-of-use assets" in the Consolidated Balance Sheets as of the Closing Date, were principally equal to the amount of the lease liability at the Closing Date, adjusted for any fair value adjustments for off-market leases. The Company reviewed the acquired leases and applied a \$15 million adjustment to reflect off-market leases. The remaining lease term was based on the remaining term at the Closing Date plus any renewal or extension options that the Company was reasonably certain would be exercised.

Net defined benefit plan liabilities were recognized based on appropriate actuarial assumptions and asset valuations as of the Closing Date and, accordingly, liabilities of approximately \$221 million were recorded.

The Company accrued approximately \$75 million related to certain product liability and legal contingencies for which it was determined that a liability existed at the Closing Date. Of this amount, approximately \$61 million was related to the finding of certain grades of microcrystalline cellulose (Avicel® PH 101, 102, and 200 NF and Avicel® RC-591 NF) being out-of-specification. See Note 19 for additional information.

The deferred income tax assets and liabilities included the expected future federal, state and foreign tax consequences associated with temporary differences between the fair values of the assets acquired and liabilities assumed and the respective tax bases. Tax rates utilized in calculating deferred income taxes generally represented the enacted statutory tax rates at the effective date of the Merger in the jurisdictions in which legal title of the underlying asset or liability resides. See Note 10 for additional information related to income taxes.

The Company incurred transaction-related costs of approximately \$91 million and \$29 million in 2021 and 2020, respectively. The transaction-related costs primarily consisted of merger and acquisition advisory, legal and professional fees in 2021 and legal and professional fees in 2020.

Pro Forma Financial Information

The following unaudited pro forma financial information presents the combined results of operations of IFF and N&B as if the Merger had been completed as of January 1, 2020. The unaudited pro forma financial information is presented for informational purposes and is not indicative of the results of operations that would have been achieved if the Merger and related borrowings had taken place on January 1, 2020, nor are they indicative of future results. The unaudited pro forma financial information for the year ended December 31, 2021 includes IFF results, including the post-Merger results of N&B, since February 1, 2021, and pre-Merger results of N&B for the period January 1, 2021 through January 31, 2021.

The unaudited pro forma results for the year ended December 31, 2021 and 2020 were as follows:

<i>(DOLLARS IN MILLIONS)</i>	Year Ended December 31,	
	2021	2020
Unaudited pro forma net sales	\$ 12,163	\$ 11,143
Unaudited pro forma net income attributable to the Company	687	192

The unaudited pro forma results for all periods include adjustments made to account for certain costs and transactions that would have been incurred had the Merger been completed as of January 1, 2020, including amortization charges for acquired intangibles assets, adjustments for transaction costs, adjustments for depreciation expense for property, plant and equipment, inventory step-up and adjustments to interest expense. These adjustments are net of any applicable tax impact and were included to arrive at the pro forma results above.

NOTE 4. BUSINESS DIVESTITURE

Divestiture of Microbial Control

During the third quarter of 2021, the Company announced it had entered into an agreement to sell its Microbial Control business unit, which was a part of the Health & Biosciences segment. The Company acquired the Microbial Control business unit as part of the Merger with N&B.

The Company completed the divestiture of the Microbial Control business unit on July 1, 2022 and received cash proceeds of approximately \$1.254 billion, of which approximately \$36 million was attributable to future services to be provided under certain transition service agreements as described below. Certain transaction costs related to the divestiture of approximately \$11 million, which was contingent upon the consummation of the divestiture, were determined to be direct costs to sell and, as such, were adjusted against the fair value of the sale consideration. In addition, approximately \$15 million of cash proceeds held in escrow were released to the Company upon satisfaction of certain conditions. The sale consideration was further reduced by approximately \$3 million for certain post-closing adjustments, which were primarily related to cash, indebtedness and working capital balances.

The Company entered into transition services agreements with the buyer for providing certain general accounting, information technology and other services up to 19 months following the date of the sale for minimal consideration. The fair value of these transition service agreements was determined to be approximately \$36 million, which was adjusted against the sale consideration and recognized as deferred transition services income.

For the year ended December 31, 2022, the transition services income under the transition services agreements was approximately \$11 million and was recognized as a reduction to the costs incurred to provide services under the transition service agreements, which was included in Selling and administrative expenses on the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income.

The following table summarizes the fair value of the sale consideration received in connection with the divestiture:

<i>(DOLLARS IN MILLIONS)</i>	
Cash proceeds from the buyer	\$ 1,254
Escrow proceeds	15
Proceeds attributable to transition service agreements	(36)
Direct costs to sell	(11)
Net cash settlement for post-closing adjustments	(3)
Fair value of sale consideration	\$ 1,219

The net proceeds received from business divestiture presented under Cash flows from investing activities represent the cash portion of the sale consideration, which was determined as the fair value of sale consideration reduced by the amount held in escrow and the Cash transferred to the buyer on the closing balance sheet as part of the transaction. The following table summarizes the different components of net proceeds received from business divestiture presented under Cash flows from investing activities:

(DOLLARS IN MILLIONS)

Fair value of sale consideration	\$	1,219
Cash transferred to the buyer on the closing balance sheet		(49)
Employee reimbursement receivable		(1)
Net proceeds received from business divestiture	\$	<u>1,169</u>

The carrying amount of net assets associated with the Microbial Control business unit was approximately \$1.208 billion. The major classes of assets and liabilities sold consisted of the following:

(DOLLARS IN MILLIONS)

	<u>June 30, 2022</u>	
Assets		
Current assets	\$	263
Goodwill and other intangible assets, net		867
Equity method investment		74
Other assets		80
Total assets	\$	<u>1,284</u>
Liabilities		
Accounts payable	\$	41
Other liabilities		35
Total liabilities	\$	<u>76</u>

As a result of the divestiture, the Company recognized a pre-tax gain of approximately \$11 million presented in Other income, net on the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022. The Company also recognized the income tax effects associated with the divestiture of approximately \$96 million based on preliminary estimates as of December 31, 2022.

NOTE 5. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment, net consisted of the following amounts:

<i>(DOLLARS IN MILLIONS)</i>	<u>December 31,</u>	
	<u>2022</u>	<u>2021</u>
Asset Type		
Land	\$ 199	\$ 223
Buildings and improvements	1,697	1,764
Machinery and equipment	3,344	3,442
Information technology	291	271
Construction in process	649	461
Total Property, Plant and Equipment	<u>6,180</u>	<u>6,161</u>
Accumulated depreciation	(1,977)	(1,793)
Total Property, Plant and Equipment, Net	<u>\$ 4,203</u>	<u>\$ 4,368</u>

Impairment of Property, Plant and Equipment

As discussed in Note 1, for the year ended December 31, 2022 an impairment charge of approximately \$28 million was recorded in connection with property, plant and equipment, primarily buildings and improvements, of an asset group that operates primarily in Russia.

Depreciation

Depreciation expense was \$452 million, \$424 million and \$132 million for the years ended December 31, 2022, 2021 and 2020, respectively.

NOTE 6. GOODWILL AND OTHER INTANGIBLE ASSETS, NET

Goodwill

In the first quarter of 2021, in connection to the Merger, the Company reorganized its reporting structure. In connection with this reorganization, goodwill was reassigned among reporting units using a relative fair value approach based on the fair value of the elements transferred and the fair value of the elements remaining within the original reporting units. The Company tested goodwill for impairment on a pre-reorganization basis and determined there was no impairment for the affected reporting units. In connection with the reorganization, \$985 million of goodwill previously included in the legacy Taste segment, now the Nourish segment, was moved to the Scent and Health & Biosciences segments amounting to \$257 million and \$728 million, respectively.

Movements in goodwill attributable to each reportable segment during the years ended December 31, 2021 and 2022 were as follows:

<i>(DOLLARS IN MILLIONS)</i>	Nourish	Health & Biosciences	Scent	Pharma Solutions	Total
Balance at December 31, 2020	\$ 4,859	\$ —	\$ 734	\$ —	\$ 5,593
Acquisitions ⁽¹⁾	2,900	6,712	876	1,329	11,817
Transferred to assets held for sale ⁽²⁾	—	(536)	—	—	(536)
Reduction from business divestiture	(27)	—	—	—	(27)
Foreign exchange	(192)	(155)	(39)	(47)	(433)
Reallocation	(985)	728	257	—	—
Balance at December 31, 2021	6,555	6,749	1,828	1,282	16,414
Acquisitions ⁽³⁾	—	45	—	—	45
Impairment	—	(2,250)	—	—	(2,250)
Transferred to assets held for sale ⁽⁴⁾	(306)	—	(42)	—	(348)
Foreign exchange	(199)	(223)	(41)	(43)	(506)
Balance at December 31, 2022	\$ 6,050	\$ 4,321	\$ 1,745	\$ 1,239	\$ 13,355

(1) Acquisitions relate to the Merger with N&B. See Note 3 for additional information.

(2) Transferred to assets held for sale relate to the Microbial Control business unit that was classified as “held for sale” as of December 31, 2021.

(3) Acquisitions relate to the acquisition of Health Wright. See Note 3 for additional information.

(4) Transferred to assets held for sale relate to the portion of the Savory Solutions business and Flavor Specialty Ingredients business that were classified as “held for sale” as of December 31, 2022. See Note 21 for additional information.

Goodwill Impairment Test

For the annual impairment test as of November 30, 2022, the Company elected to bypass the qualitative assessment for all reporting units, Step 0 of the guidance in ASC Topic 350, Intangibles – Goodwill and Other, which allows for the assessment of qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. For all six reporting units, the Company performed a Step 1 test.

The Company assessed the fair value of the reporting units using an income approach. Under the income approach, the Company determined the fair value by using a discounted cash flow method at a rate of return that reflects the relative risk of the projected future cash flows of each reporting unit, as well as a terminal value. The Company used the most current actual and forecasted operating data available. Key estimates and assumptions used in these valuations include revenue growth rates, gross margins, EBITDA margins, terminal growth rates and discount rates.

In performing the quantitative impairment test, the Company determined that the fair value of the six reporting units exceeded their carrying values and determined that there was no further impairment of goodwill at any of the Company’s six reporting units as of November 30, 2022. Based on the quantitative impairment test performed, the Company determined that all reporting units except the Health & Biosciences reporting unit had excess fair value over carrying value of more than 25%.

As of November 30, 2022, the Health & Biosciences reporting unit had excess fair value over carrying value of approximately 3% and goodwill of approximately \$4.321 billion. While management believes that the assumptions used in the impairment test were reasonable, changes in key assumptions, including lower revenue growth, operating margin, terminal growth rates or increase in discount rates could result in a future impairment.

If current long-term projections for these reporting units are not realized or materially decrease, the Company may be required to write-off all or a portion of the goodwill. Such charge could have a material effect on the Consolidated Statements of Operations and Balance Sheets.

For the third quarter of 2022, the Company determined that goodwill impairment triggering events occurred for its Nourish, Health & Biosciences and Pharma Solutions reporting units, which required it to complete an interim impairment assessment. The primary indicators that were deemed to be triggering events in the quarter for the reporting units were declines in the Company's projections across various reporting units and ongoing adverse macroeconomic impacts such as inflation, increases in interest rates and unfavorable effects from exchange rates. As a result of the triggering events, the Company assessed the fair value of the reporting units using the income approach.

In performing the quantitative impairment test, the Company determined that the fair value of the Nourish and Pharma Solutions reporting units exceeded their carrying value, and determined that there was no impairment of goodwill relating to these reporting units. The Company determined that the carrying value of the Health & Biosciences reporting unit exceeded its fair value and recorded a goodwill impairment charge of \$2.250 billion in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the year ended December 31, 2022.

Other Intangible Assets

Other intangible assets, net consisted of the following amounts:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Asset Type		
Customer relationships	\$ 8,318	\$ 8,935
Technological know-how	2,339	2,494
Trade names & patents	358	411
Other	47	50
Total carrying value	11,062	11,890
Accumulated Amortization		
Customer relationships	(1,252)	(887)
Technological know-how	(589)	(388)
Trade names & patents	(97)	(68)
Other	(42)	(41)
Total accumulated amortization	(1,980)	(1,384)
Other intangible assets, net	<u>\$ 9,082</u>	<u>\$ 10,506</u>

Impairment of Intangible Assets

As discussed in Note 1, for the year ended December 31, 2022, an impairment charge of approximately \$92 million was recorded in connection with intangible assets, primarily customer relationships and technological know-how, of an asset group that operates primarily in Russia, which was included within accumulated amortization.

Amortization

Amortization expense was \$727 million for the year ended December 31, 2022, \$732 million for the year ended December 31, 2021 and \$193 million for the year ended December 31, 2020. Amortization expense for the next five years and thereafter, based on valuations and determinations of useful lives, is expected to be as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,				
	2023	2024	2025	2026	2027
Estimated future intangible amortization expense	\$ 703	\$ 702	\$ 699	\$ 697	\$ 598

NOTE 7. OTHER CURRENT ASSETS AND LIABILITIES, AND OTHER ASSETS

Prepaid expenses and other current assets consisted of the following amounts:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Value-added tax receivable	\$ 212	\$ 178
Income tax receivable	129	131
Packaging materials	148	128
Prepaid expenses	144	160
Other	137	131
Total	<u>\$ 770</u>	<u>\$ 728</u>

Other assets consisted of the following amounts:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Finance lease right-of-use assets	\$ 22	\$ 21
Deferred income taxes	158	82
Overfunded pension plans	180	136
Cash surrender value of life insurance contracts	45	52
Equity method investments	10	86
Other ⁽¹⁾	284	239
Total	<u>\$ 699</u>	<u>\$ 616</u>

(1) Includes land usage rights in China, long term deposits and receivables on certain derivative instruments.

Other current liabilities consisted of the following amounts:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Rebates and incentives payable	\$ 99	\$ 113
Value-added tax payable	65	50
Interest payable	55	48
Current pension and other postretirement benefit obligation	10	11
Accrued insurance (including workers' compensation)	9	10
Restructuring and other charges	15	29
Current operating lease obligation	86	109
Accrued freight	18	—
Accrued commissions payable	11	13
Accrued income taxes	313	94
Accrued expenses payable	256	270
Other	91	85
Total	<u>\$ 1,028</u>	<u>\$ 832</u>

NOTE 8. LEASES

The Company has leases for corporate offices, manufacturing facilities, research and development facilities, and certain transportation and office equipment, the majority of which are operating leases. The Company's leases have remaining lease terms of up to 50 years, some of which include options to extend the leases for up to 7 years.

The components of lease expense were as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,		
	2022	2021	2020
Operating lease cost	\$ 187	\$ 168	\$ 62
Finance lease cost	8	7	4

Supplemental cash flow information related to leases was as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,		
	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flow for operating leases	\$ 135	\$ 129	\$ 52
Financing cash flow for finance leases	7	6	4
Right-of-use assets obtained in exchange for lease obligations			
Operating leases	60	88	63
Finance leases	7	15	6

Supplemental balance sheet information related to leases was as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Operating Leases		
Operating lease right-of-use assets	\$ 636	\$ 767
Current operating lease obligations ⁽²⁾	86	109
Operating lease liabilities	565	670
Total operating lease liabilities	\$ 651	\$ 779
Finance Leases		
Finance lease right-of-use assets ⁽¹⁾	\$ 22	\$ 21
Current finance lease obligations ⁽²⁾	5	5
Finance lease liabilities ⁽³⁾	12	15
Total finance lease liabilities	\$ 17	\$ 20

(1) Presented in Other assets in the Consolidated Balance Sheets.

(2) Presented in Other current liabilities in the Consolidated Balance Sheets.

(3) Presented in Other liabilities in the Consolidated Balance Sheets.

Weighted average remaining lease term and discount rate were as follows:

	December 31,	
	2022	2021
Weighted average remaining lease term in years		
Operating leases	10.1	11.1
Finance leases	4.0	4.3
Weighted average discount rate		
Operating leases	4.03 %	2.73 %
Finance leases	2.59 %	1.85 %

Maturities of lease liabilities as of December 31, 2022 were as follows:

<i>(DOLLARS IN MILLIONS)</i>	Operating Leases	Finance Leases	Total
2023	\$ 111	\$ 6	\$ 117
2024	103	3	106
2025	89	4	93
2026	78	3	81
2027	66	2	68
Thereafter	363	—	363
Total undiscounted liabilities	810	18	828
Less: Imputed interest	(159)	(1)	(160)
Total lease liabilities	\$ 651	\$ 17	\$ 668

Right-of-use assets and lease liabilities acquired from N&B were remeasured at the present value of the future minimum lease payments over the remaining lease term utilizing an updated incremental borrowing rate of the Company as if the acquired leases were new leases as of the Closing Date. Right-of-use assets were further adjusted for any off-market terms of the lease. The remaining lease term is based on the remaining term at the Closing Date plus any renewal or extension options that the Company is reasonably certain will be exercised. Additionally, the Company has elected short-term lease treatment for those acquired lease contracts which, at the Closing Date, have a remaining lease term of 12 months or less. For the leases acquired through the Transactions, the Company will retain the previous lease classification. This resulted in an increase in both right-of-use assets and operating lease liabilities of approximately \$525 million and \$523 million, respectively, as of the Closing Date.

As a result of the Company's acquisition of Health Wright, there was an increase of approximately \$22 million in finance lease right-of-use assets and \$21 million in finance lease liabilities as of the Acquisition Date. In the fourth quarter of 2022, the Company exercised its option to purchase the asset and, as such, de-recognized the finance lease right-of-use assets and finance lease liabilities.

NOTE 9. DEBT

Debt consisted of the following at December 31:

<i>(DOLLARS IN MILLIONS)</i>	Effective Interest Rate	2022	2021
2022 Notes ⁽³⁾	0.69 %	\$ —	\$ 300
2023 Notes ⁽¹⁾	3.30 %	300	300
2024 Euro Notes ⁽¹⁾	1.88 %	532	565
2025 Notes ⁽³⁾	1.22 %	1,000	1,001
2026 Euro Notes ⁽¹⁾	1.93 %	845	900
2027 Notes ⁽³⁾	1.56 %	1,215	1,218
2028 Notes ⁽¹⁾	4.57 %	398	397
2030 Notes ⁽³⁾	2.21 %	1,510	1,511
2040 Notes ⁽³⁾	3.04 %	774	775
2047 Notes ⁽¹⁾	4.44 %	495	494
2048 Notes ⁽¹⁾	5.12 %	787	786
2050 Notes ⁽³⁾	3.21 %	1,571	1,572
2024 Term Loan Facility ⁽⁴⁾	3.65 %	625	625
2026 Term Loan Facility ⁽⁴⁾	4.92 %	625	625
Commercial Paper ⁽⁵⁾		187	324
Amended Revolving Credit facility ⁽⁶⁾		100	—
Bank overdrafts and other		6	7
Total debt		\$ 10,970	\$ 11,400
Less: Short term borrowings ⁽²⁾		(597)	(632)
Total Long-term debt		\$ 10,373	\$ 10,768

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- (1) Amount is net of unamortized discount and debt issuance costs.
 - (2) Includes bank borrowings, overdrafts, current portion of long-term debt and commercial paper.
 - (3) Assumed by the Company as part of the N&B Merger. Amount is net of unamortized premium and debt issuance costs.
 - (4) Assumed by the Company as part of the N&B Merger and recorded at fair value.
 - (5) The effective interest rate of commercial paper issuances fluctuate as short-term interest rates and demand fluctuate, and deferred debt issuance costs are immaterial. Additionally, the effective interest rate of commercial paper is not meaningful as issuances do not materially differ from short-term interest rates. Proceeds from the issuance of commercial paper include \$225 million of proceeds with original maturities greater than three months.
 - (6) The interest rate on the Amended Revolving Credit Facility is, at the applicable borrower's option, a per annum rate equal to either (x) an eurocurrency rate plus an applicable margin varying from 1.000% to 1.625% or (y) a base rate plus an applicable margin varying from 0.000% to 0.625%, in each case depending on the public debt ratings for non-credit enhanced long-term senior unsecured debt issued by the Company.

Term Loan Facility and Senior Notes assumed as part of the N&B Merger

Following the Merger, the Company assumed the indebtedness incurred by N&B in the debt financings completed prior to the Distribution. This indebtedness includes (i) a Term Loan Facility of \$1.250 billion pursuant to the term loan credit agreement (the "N&B Term Loan Facility") and (ii) a series of Senior Notes in the aggregate amount of \$6.250 billion with maturities ranging from 2 to 30 years as further described below. N&B's indebtedness raised prior to the Merger was used to finance the Special Cash Payment to DuPont, which has been paid, and for the satisfaction of the related transaction fees and expenses. See Note 3 for additional information.

N&B Term Loan Facility

The N&B Term Loan Facility was funded on February 1, 2021, and provides for a senior unsecured term loan credit facility in an aggregate principal amount of \$1.250 billion, comprised of a \$625 million three-year tranche ("2024 Term Loan Facility") and a \$625 million five-year tranche ("2026 Term Loan Facility"). Interest for each tranche equals, at the Company's option, a per annum rate equal to either (x) an adjusted LIBOR rate plus an applicable margin varying from 0.750% to 2.000% for the three-year tranche and from 1.125% to 2.375% for the five-year tranche or (y) a base rate plus an applicable margin varying from 0.000% to 1.000% for the three-year tranche and from 0.125% to 1.375% for the five-year tranche, in each case depending on the class of IFF's non-credit-enhanced, senior unsecured long-term debt credit rating.

The 2024 Term Loan Facility and 2026 Term Loan Facility are subject to customary affirmative and negative covenants and events of default after the Closing Date of the Merger. On and after the Closing Date of the N&B Transaction, the 2024 Term Loan Facility and 2026 Term Loan Facility are also subject to a financial covenant requiring maintenance of a maximum consolidated leverage ratio of 4.75x, with step downs to 3.50x over time, with the first step-down which occurred after the fiscal quarter ended December 31, 2021 and the final step-down occurring after the fiscal quarter ending June 30, 2023, with a step-up if the Company consummates certain qualified acquisitions.

On August 4, 2022, the Company and certain of its subsidiaries entered into Amendment No. 2 To Credit Agreement which amended and restated the Company's Credit Agreement among the Company, certain of its subsidiaries, the banks, financial institutions and other institutional lenders party thereto, and Morgan Stanley Senior Funding, Inc. as administrative agent. Pursuant to the amendment, the 2024 Term Loan Facility and 2026 Term Loan Facility are subject to a financial covenant requiring maintenance of a maximum consolidated leverage ratio of 4.50x until and including the end of the fiscal quarter ending on June 30, 2023, stepping down to 4.25x until and including the end of the fiscal quarter ending on March 31, 2024, stepping down further to 4.00x until and including the end of the fiscal quarter ending on June 30, 2024, stepping down further to 3.75x until and including the end of the fiscal quarter ending on September 30, 2024, stepping down further to 3.50x thereafter, with a step-up in connection with certain qualifying acquisitions. The Company was in compliance with all covenants as of December 31, 2022.

N&B Senior Notes

On September 16, 2020, N&B issued \$6.250 billion in aggregate principal amount of senior unsecured notes consisting of: (i) \$300 million senior unsecured notes which matured on September 15, 2022 (the “2022 Notes”), bearing interest at a rate of 0.697% per year, payable semi-annually on March 15 and September 15 of each year, beginning March 15, 2021; (ii) \$1.000 billion senior unsecured notes maturing on October 1, 2025 (the “2025 Notes”), bearing interest at a rate of 1.230% per year, payable semi-annually on April 1 and October 1 of each year, beginning April 1, 2021; (iii) \$1.200 billion senior unsecured notes maturing on October 15, 2027 (the “2027 Notes”), bearing interest at a rate of 1.832% per year, payable semi-annually on April 15 and October 15 of each year, beginning April 15, 2021; (iv) \$1.500 billion senior unsecured notes maturing on November 1, 2030 (the “2030 Notes”), bearing interest at a rate of 2.300% per year, payable semi-annually on May 1 and November 1 of each year, beginning May 1, 2021; (v) \$750 million senior unsecured notes maturing on November 15, 2040 (the “2040 Notes”), bearing interest at a rate of 3.268% per year, payable semi-annually on May 15 and November 15 of each year, beginning May 15, 2021, and; (vi) \$1.500 billion senior unsecured notes maturing on December 1, 2050 (the “2050 Notes”), bearing interest at a rate of 3.468% per year, payable semi-annually on June 1 and December 1 of each year, beginning June 1, 2021.

Interest on each series of notes began accruing from September 16, 2020 payable semi-annually in arrears as described above. Interest is computed on the basis of a 360-day year comprised of twelve 30-day months.

On September 15, 2022, the Company repaid the full \$300 million outstanding of its 2022 Notes at maturity.

Amended Revolving Credit Facility

On August 4, 2022, the Company and certain of its subsidiaries entered into the Amendment No. 1 To Credit Agreement which amended and restated the Company’s Revolving Credit Facility (previously and more recently amended and restated as of July 28, 2021) among the Company, certain of its subsidiaries, the banks, financial institutions and other institutional lenders party thereto, and Citibank, N.A. as administrative agent.

The interest rate on the Amended Revolving Credit Facility is, at the applicable borrower's option, a per annum rate equal to either (x) an eurocurrency rate plus an applicable margin varying from 1.000% to 1.625% or (y) a base rate plus an applicable margin varying from 0.000% to 0.625%, in each case depending on the public debt ratings for non-credit enhanced long-term senior unsecured debt issued by the Company.

The Amended Revolving Credit Facility is available for general corporate purposes of each borrower and its subsidiaries. The obligations under the Amended Revolving Credit Facility are unsecured and the Company has guaranteed the obligations of each other borrower under the Amended Revolving Credit Facility. The Company pays a commitment fee on the aggregate unused commitments; such fee is not material. The Amended Revolving Credit Agreement contains various covenants, limitations and events of default customary for similar facilities for similarly rated borrowers, including a maximum permitted ratio of Net Debt to Consolidated EBITDA of 4.50x as of December 31, 2022, with step-downs to 3.50x over time, with a step-up if the Company consummates certain qualifying acquisitions.

In connection with the initial issuance of the Revolving Credit Facility, the Company incurred \$1 million of debt issuance costs. As of December 31, 2022, the Company was in compliance with all covenants under the Amended Revolving Credit Facility. As of December 31, 2022, total capacity under the Amended Revolving Credit Facility was \$2.000 billion, with \$100 million outstanding borrowings. Under the amended terms of the Revolver Credit Agreement, the Amended Revolving Credit Facility increased from \$1.000 billion to \$2.000 billion, maturing on July 28, 2026. At the option of the Company, the facility may be increased to \$2.500 billion subject to certain conditions. As the Amended Revolving Credit Facility is a multi-year revolving credit agreement, the Company classifies as long-term debt the portion that it has the intent and ability to maintain outstanding longer than 12 months.

During 2022, the Company had draw downs of \$550 million and repayments of \$450 million under the Amended Revolving Credit Facility. There were no draw downs or repayments under the Amended Revolving Credit Facility in 2021.

2018 Senior Unsecured Notes

On September 25, 2018 the Company issued €300 million aggregate principal amount of senior unsecured notes that matured on September 25, 2021 (the “2021 Euro Notes”). The 2021 Notes bore interest at a rate of 0.5% per year, payable annually on September 25 of each year, beginning September 25, 2019. Total proceeds from the issuance of the 2021 Notes, net of underwriting discounts and offering costs, were €298 million (\$350 million in USD). During the third quarter of 2021, the Company repaid the 2021 Euro Notes in a payment of €300 million. The repayment on the 2021 Euro Notes was funded primarily from the Company’s existing cash balances, with the remainder coming from the issuance of commercial paper.

On September 25, 2018, the Company issued €800 million aggregate principal amount of senior unsecured notes that mature on September 25, 2026 (the “2026 Euro Notes”). The 2026 Notes bear interest at a rate of 1.8% per year, payable annually on September 25 of each year, beginning September 25, 2019. Total proceeds from the issuance of the 2026 Notes, net of underwriting discounts and offering costs, were €794 million (\$932 million in USD).

On September 26, 2018, the Company issued \$400 million aggregate principal amount of senior unsecured notes that mature on September 26, 2028 (the “2028 Notes”). The 2028 Notes bear interest at a rate of 4.45% per year, payable semi-annually on March 26 and September 26 of each year, beginning March 26, 2019. Total proceeds from the issuance of the 2028 Notes, net of underwriting discounts and offering costs, were \$397 million.

On September 26, 2018, the Company issued \$800 million aggregate principal amount of senior unsecured notes that mature on September 26, 2048 (the “2048 Notes” and collectively with the 2021 Euro Notes, 2026 Euro Notes, 2020 Notes, 2028 Notes, the “2018 Senior Unsecured Notes”). The 2048 Notes bear interest at a rate of 5.0% per year, payable semi-annually on March 26 and September 26 of each year, beginning March 26, 2019. Total proceeds from the issuance of the 2048 Notes, net of underwriting discounts and offering costs, were \$787 million.

As discussed in Note 16, the 2021 Euro Notes and 2026 Euro Notes have been designated as a hedge of the Company’s net investment in certain subsidiaries.

2023 Notes

On April 4, 2013, the Company issued \$300 million face amount of 3.20% Senior Notes (“2023 Notes”) due 2023 at a discount of less than \$1 million. The Company received proceeds related to the issuance of these 2023 Notes of \$298 million which was net of the less than \$1 million discount and a \$2 million underwriting discount (recorded as deferred financing costs). In addition, the Company incurred \$1 million of other deferred financing costs in connection with the debt issuance. The discount and deferred financing costs are being amortized as interest expense over the term of the 2023 Notes. The 2023 Notes bear interest at a rate of 3.20% per year, with interest payable on May 1 and November 1 of each year, commencing on November 1, 2013. The 2023 Notes mature on May 1, 2023.

2024 Euro Notes

On March 14, 2016, the Company issued €500 million face amount of 1.75% Senior Notes (“2024 Euro Notes”) due 2024 at a discount of €1 million. The Company received proceeds related to the issuance of these 2024 Euro Notes of €496 million which was net of the €1 million discount and €3 million underwriting discount (recorded as deferred financing costs). In addition, the Company incurred \$1 million of other deferred financing costs in connection with the debt issuance. In connection with the debt issuance, the Company entered into pre-issuance hedging transactions that were settled upon issuance of the debt and resulted in a loss of approximately \$3 million. The discount, deferred financing costs and pre-issuance hedge loss are being amortized as interest expense over the eight year term of the debt. The 2024 Euro Notes bear interest at a rate of 1.75% per annum, with interest payable on March 14 of each year, commencing on March 14, 2017. The 2024 Euro Notes will mature on March 14, 2024.

As discussed in Note 16, the 2024 Euro Notes have been designated as a hedge of the Company’s net investment in certain subsidiaries.

2047 Notes

On May 18, 2017, the Company issued \$500 million face amount of 4.375% Senior Notes (“2047 Notes”) due 2047 at a discount of \$2 million. The Company received proceeds related to the issuance of these 2047 Notes of \$494 million which was net of the \$2 million discount and \$4 million in underwriting fees (recorded as deferred financing costs). In addition, the Company incurred \$1 million in legal and professional costs associated with the issuance and such costs were recorded as deferred financing costs. In connection with the debt issuance, the Company entered into pre-issuance hedging transactions that were settled upon issuance of the debt and resulted in a loss of approximately \$5 million. The discount, deferred financing costs and pre-issuance hedge loss are being amortized as interest expense over the 30 year term of the debt. The 2047 Notes bear interest at a rate of 4.375% per annum, with interest payable semi-annually on June 1 and December 1 of each year, commencing on December 1, 2017. The 2047 Notes will mature on June 1, 2047.

2018 Term Loan Facility

On June 6, 2018, the Company entered into a Term Loan Credit Agreement (as amended on July 13, 2018, January 17, 2020 and August 25, 2020, the “2018 Term Loan Credit Agreement”) with Morgan Stanley Senior Funding, Inc., as the administrative agent, and the lenders party thereto, pursuant to which the lenders thereunder committed to provide, a senior unsecured term loan facility in an original aggregate principal amount of up to \$350 million (the “2018 Term Loan Facility”), which matured on October 1, 2021. In 2019, the Company made payments of \$110 million on the 2018 Term Loan Facility, and during the third quarter of 2021, the Company repaid the remainder of the 2018 Term Loan Facility in two payments of \$120 million each. The repayments on the 2018 Term Loan Facility were funded primarily from the Company’s existing cash balances, with the remainder coming from the issuance of commercial paper.

2022 Term Loan Facility

On May 15, 2020, the Company entered into a Term Loan Agreement (as amended on August 25, 2020, the “2022 Term Loan Agreement”) with China Construction Bank Corporation, New York Branch, as administrative agent, and the lenders party thereto, pursuant to which the lenders thereunder have committed to provide a senior unsecured two year term loan facility in an aggregate principal amount of up to \$200 million (the “2022 Term Loan Facility”). The loans under the 2022 Term Loan Agreement bore interest, at the Company’s option, at a per annum rate equal to either (x) an adjusted LIBOR rate plus an applicable margin varying from 1.225% to 2.475% or (y) a base rate plus an applicable margin varying from 0.225% to 1.475%, in each case depending on the public debt ratings for non-credit enhanced long-term senior unsecured debt issued by the Company. The Company could voluntarily prepay the term loans without premium or penalty, with the balance payable on the second anniversary of the funding date. There is no required amortization under the 2022 Term Loan Agreement.

During the fourth quarter of 2021, the Company elected to voluntarily prepay the outstanding balance of the 2022 Term Loan Facility.

Commercial Paper

During 2022, the Company had gross issuances of \$6.040 billion and repayments of \$6.177 billion under the commercial paper program. The commercial paper issued had original maturities of less than 126 days. During 2021, the Company had gross issuances of \$800 million and repayments of \$476 million under the commercial paper program.

The Commercial Paper Program is backed by the borrowing capacity available under the Revolving Credit Facility. The effective interest rate of commercial paper issuances does not materially differ from short-term interest rates, which fluctuate due to market conditions and as a result may impact our interest expense.

Redemption Provisions

The 2023 Notes, 2024 Euro Notes, 2026 Euro Notes, 2028 Notes, 2047 Notes, and 2048 Notes (collectively, the “Notes”) share the same redemption provisions. Upon 30 days’ notice to holders of the Notes, the Company may redeem the Notes for cash in whole, at any time, or in part, from time to time, prior to maturity, at redemption prices that include accrued and unpaid interest and a make-whole premium, as specified in the indenture governing the Notes. However, no make-whole premium will be paid for redemptions of each note on or after the following date:

Note	Redemption Date
2023 Notes	February 1, 2023
2024 Euro Notes	December 14, 2023
2026 Euro Notes	June 25, 2026
2028 Notes	June 26, 2028
2047 Notes	December 1, 2046
2048 Notes	March 26, 2048

The indenture of the Notes provides for customary events of default and contains certain negative covenants that limit the ability of the Company and its subsidiaries to grant liens on assets, or to enter into sale-leaseback transactions. In addition, subject to certain limitations, in the event of the occurrence of both (1) a change of control of the Company and (2) a downgrade of the Notes below investment grade rating by both Moody’s Investors Services, Inc., Standard & Poor’s Ratings Services and Fitch Ratings Inc. within a specified time period, the Company will be required to make an offer to repurchase the Notes at a price equal to 101% of the principal amount of the Notes, plus accrued and unpaid interest to the date of repurchase.

The 2025 Notes, 2027 Notes, 2030 Notes, 2040 Notes and 2050 Notes (collectively, the “N&B Senior Notes”), assumed as a result of the Merger, may be redeemed by the issuer at any time at the greater of 100% or the discounted present value of the remaining scheduled payments of principal and interest from the redemption date to the maturity date at Treasury Rate (as defined in the applicable indenture) plus (i) 15 basis points in the case of the 2025 Notes, (ii) 25 basis points in the case of the 2027 Notes, (iii) 25 basis points in the case of the 2030 Notes, (iv) 30 basis points in the case of the 2040 Notes and (v) 30 basis points in the case of the 2050 Notes. The redemption dates of each of the N&B Senior Notes are provided in the table below:

Notes	Redemption Date
2025 Notes	September 1, 2025
2027 Notes	August 15, 2027
2030 Notes	August 1, 2030
2040 Notes	May 15, 2040
2050 Notes	June 1, 2050

On or after the applicable redemption dates, each series of the N&B Senior Notes may be redeemed by the issuer at a redemption price equal to 100% of the principal amount of the N&B Senior Notes to be redeemed, plus accrued and unpaid interest on the notes to be redeemed to, but excluding, the redemption date.

Outstanding Borrowings

The following table shows the contractual maturities of the Company's long-term debt as of December 31, 2022.

(DOLLARS IN MILLIONS)	Payments Due by Period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Total Outstanding Borrowings	\$ 10,580	\$ 300	\$ 2,156	\$ 2,674	\$ 5,450

NOTE 10. INCOME TAXES

Earnings before income taxes consisted of the following:

(DOLLARS IN MILLIONS)	December 31,		
	2022	2021	2020
U.S. loss before taxes	\$ (1,918)	\$ (493)	\$ (142)
Foreign income before taxes	293	847	583
Total (loss) income before taxes	\$ (1,625)	\$ 354	\$ 441

The income tax provision consisted of the following:

(DOLLARS IN MILLIONS)	December 31,		
	2022	2021	2020
Current tax provision			
Federal	\$ 102	\$ (5)	\$ (9)
State and local	49	13	1
Foreign	325	303	150
Total current tax provision	476	311	142
Deferred tax provision			
Federal	(77)	(121)	(8)
State and local	(111)	(34)	(2)
Foreign	(49)	(81)	(58)
Total deferred tax benefit	(237)	(236)	(68)
Total provision for income taxes	\$ 239	\$ 75	\$ 74

Effective Tax Rate Reconciliation

Reconciliation between the U.S. federal statutory income tax rate to the actual effective tax rate was as follows:

	December 31,		
	2022	2021	2020
Statutory tax rate	21.0 %	21.0 %	21.0 %
Tax effect of non-deductible goodwill impairment	(29.1)	—	—
Difference in effective tax rate on foreign earnings and remittances ⁽¹⁾	—	8.0	(6.9)
Tax benefit from supply chain optimization	0.8	(5.8)	(5.0)
Unrecognized tax benefit, net of reversals	0.9	0.7	5.7
Tax impact on gains on business disposal	(5.9)	4.0	—
Deferred taxes on deemed repatriation ⁽²⁾	(5.6)	2.7	(0.2)
Global intangible low-taxed income	(0.8)	4.1	5.3
Foreign-derived intangible income	1.1	(1.6)	(0.3)
U.S. foreign tax credit - general limitation	0.1	(3.1)	(1.9)
Research and development credit	0.8	(1.4)	(1.0)
Acquisition costs	—	2.4	1.0
Establishment (release) of valuation allowance on state deferred	—	(3.0)	(0.4)
State and local taxes including rate changes ⁽³⁾	4.3	(4.8)	(0.6)
Other, net	(2.3)	(2.0)	0.1
Effective tax rate	<u>(14.7)%</u>	<u>21.2 %</u>	<u>16.8 %</u>

(1) For 2021, the rate includes rate change impacts related to the Netherlands and United Kingdom.

(2) For 2022, the rate includes establishment of the “held for sale” deferred tax liabilities due to a change in assertion.

(3) For 2022, the rate includes rate change impacts related to the remeasurement of the state tax rate on deferred taxes.

The effective tax rate reflects the recording of non-tax-deductible impairment charges related to goodwill in the Health & Biosciences operating segment and the tax effects of the divestiture of the Microbial Control business unit.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”) that significantly revised the U.S. tax code effective January 1, 2018. The Tax Act created significant international tax provisions, including global intangible low-taxed income (“GILTI”). The Company has elected to treat GILTI as a current period cost if and when incurred. This tax position resulted in approximately a net \$112 million income tax expense for the year ended December 31, 2022, offset in part by approximately \$99 million in foreign tax credits.

The U.S. consolidated group has historically generated taxable income after the inclusion of foreign dividends which has allowed the Company to realize its federal deferred tax assets. Foreign dividends are now subject to a 100% dividends received deduction under the Tax Act and do not serve as a source of federal taxable income. However, as of December 31, 2022, the U.S. consolidated group is in a cumulative income position. It is expected to continue to be in a cumulative income position primarily due to the inclusion of GILTI and expects to realize tax benefits from the reversal of its temporary differences, including capitalized research and experimental expenditures.

Further, as of December 31, 2022, the Company has maintained a valuation allowance of approximately \$1 million on certain state tax attributes based on a state taxable income forecast. The main inputs into the forecast are the 2022 taxable income projections. Changes in the performance of the North American business, the Company’s transfer pricing policies and adjustments to the Company’s U.S. tax profile could impact the estimate.

Deferred Taxes

The deferred tax assets and liabilities consisted of the following amounts:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Employee and retiree benefits	\$ 61	\$ 148
Credit and net operating loss carryforwards	315	312
Amortizable research and development expenses	84	42
Interest limitation	3	43
Inventory	19	32
Lease obligations	151	189
Other, net	140	79
Gross deferred tax assets	773	845
Property, plant and equipment, net	(229)	(265)
Intangible assets ⁽¹⁾	(2,049)	(2,486)
Right-of-use assets	(151)	(187)
Loss on foreign currency translation	(23)	(30)
Deferred taxes on deemed repatriation	(166)	(81)
Gross deferred tax liabilities	(2,618)	(3,049)
Valuation allowance	(262)	(232)
Total net deferred tax liabilities	\$ (2,107)	\$ (2,436)

(1) Includes deferred taxes on intangible assets owned by a fully consolidated partnership.

Net operating loss carryforwards were approximately \$301 million and \$272 million at December 31, 2022 and 2021, respectively. If unused, approximately \$98 million will expire between 2023 and 2042. The remainder, totaling approximately \$203 million, may be carried forward indefinitely. Tax credit carryforwards were approximately \$14 million and \$40 million at December 31, 2022 and 2021, respectively. If unused, the \$14 million will expire between 2023 and 2042.

Of the \$315 million deferred tax asset for net operating loss carryforwards and credits at December 31, 2022, the Company considers it unlikely that a portion of the tax benefit will be realized. Accordingly, a valuation allowance of approximately \$261 million on net operating loss carryforwards and \$1 million of tax credits has been established against these deferred tax assets.

Uncertain Tax Positions

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,		
	2022	2021	2020
Balance of unrecognized tax benefits at beginning of year	\$ 130	\$ 99	\$ 75
Gross amount of increases in unrecognized tax benefits as a result of positions taken during a prior year ⁽¹⁾	1	42	11
Gross amount of decreases in unrecognized tax benefits as a result of positions taken during a prior year	(18)	(3)	—
Gross amount of increases in unrecognized tax benefits as a result of positions taken during the current year	31	5	24
The amounts of decreases in unrecognized benefits relating to settlements with taxing authorities	(27)	(1)	(2)
Reduction in unrecognized tax benefits due to the lapse of applicable statute of limitation	(5)	(12)	(9)
Balance of unrecognized tax benefits at end of year	\$ 112	\$ 130	\$ 99

(1) For 2021, the amount includes positions related to N&B opening balance sheet amounts.

At December 31, 2022, 2021 and 2020, there were approximately \$98 million, \$130 million and \$98 million, respectively, of unrecognized tax benefits recorded to Other liabilities. There was approximately \$14 million recorded to Other current liabilities for 2022, less than \$1 million recorded to Other current liabilities for 2021 and approximately \$1 million recorded to Other current liabilities for 2020. If these unrecognized tax benefits were recognized, all the benefits and related interest and penalties would be recorded as a benefit to income tax expense.

The Company decreased its liabilities for interest and penalties by approximately \$1 million, net, for the year ended December 31, 2022, and increased its liabilities for interest and penalties by approximately \$19 million and \$3 million, net, for the years ended December 31, 2021 and 2020, respectively. At December 31, 2022, 2021 and 2020, the Company had accrued approximately \$31 million, \$36 million and \$17 million, respectively, of interest and penalties classified as Other liabilities, \$4 million classified as Other current liabilities for December 31, 2022 and less than \$1 million classified as Other current liabilities for December 31, 2021 and 2020.

As of December 31, 2022, the Company's aggregate provision for unrecognized tax benefits, including interest and penalties, was approximately \$147 million associated with various tax positions principally asserted in foreign jurisdictions.

The Company's reversal of uncertain tax positions due to the expiration of related statutes of limitations over the next 12 months was estimated to be approximately \$18 million, which has been classified as current. The total changes to the uncertain tax positions over the next 12 months is impracticable to estimate and is dependent on the resolution of new or existing tax disputes.

Other

Tax benefits credited to Shareholders' equity were not material for the years ended December 31, 2022, 2021 and 2020 associated with stock option exercises and PRSU dividends.

The Company regularly repatriates earnings from non-U.S. subsidiaries. As the Company repatriates these funds to the U.S., they will be required to pay income taxes in certain U.S. states and applicable foreign withholding taxes during the period when such repatriation occurs. Accordingly, as of December 31, 2022, the Company had a deferred tax liability of approximately \$166 million for the effect of repatriating the funds to the U.S., attributable to various non-U.S. subsidiaries. There is no deferred tax liability associated with non-U.S. subsidiaries where we intend to indefinitely reinvest the earnings to fund local operations and/or capital projects.

The Company has ongoing income tax audits and legal proceedings which are at various stages of administrative or judicial review, of which the material items are discussed below. In addition, the Company has other ongoing tax audits and legal proceedings that relate to indirect taxes, such as value-added taxes, capital tax, sales and use and property taxes, which are discussed in Note 19.

The Company also has several other tax audits in process and has open tax years with various taxing jurisdictions that range primarily from 2012 to 2021. Based on currently available information, the Company does not believe the ultimate outcome of any of these tax audits and other tax positions related to open tax years, when finalized, will have a material impact on its results of operations and financial position.

NOTE 11. NET (LOSS) INCOME PER SHARE

Basic and diluted net (loss) income per share is based on the weighted average number of shares outstanding. A reconciliation of shares used in the computation of basic and diluted net (loss) income per share is as follows:

<i>(AMOUNTS IN MILLIONS EXCEPT PER SHARE AMOUNTS)</i>	December 31,		
	2022	2021	2020
Net (Loss) Income			
Net (loss) income attributable to IFF shareholders	\$ (1,871)	\$ 270	\$ 363
Adjustment related to (increase) decrease in redemption value of redeemable non-controlling interests in excess of earnings allocated	3	(2)	2
Net (loss) income attributable to IFF shareholders	<u>\$ (1,868)</u>	<u>\$ 268</u>	<u>\$ 365</u>
Shares			
Weighted average common shares outstanding (basic) ⁽¹⁾	255	243	112
Adjustment for assumed dilution ⁽²⁾ :			
Stock options and restricted stock awards	—	—	1
SPC portion of the TEUs	—	—	1
Weighted average shares assuming dilution (diluted)	<u>255</u>	<u>243</u>	<u>114</u>
Net (Loss) Income per Share			
Net (loss) income per share - basic ⁽³⁾	\$ (7.32)	\$ 1.11	\$ 3.25
Net (loss) income per share - diluted ⁽⁴⁾	(7.32)	1.10	3.21

(1) On September 15, 2021, additional shares of IFF's common stock were issued in settlement of the SPC portion of the TEUs. For the year ended December 31, 2020, the TEUs were assumed to be outstanding at the minimum settlement amount for basic earnings per share ("EPS"). See below for additional information.

(2) Effect of dilutive securities includes dilution under stock plans and incremental impact of TEUs. See below for additional information.

(3) For the years ended December 31, 2022, 2021 and 2020, the basic net (loss) income per share cannot be recalculated based on the information presented in the table above due to the effects of rounding.

(4) For the years ended December 31, 2022 and 2020, the diluted net (loss) income per share cannot be recalculated based on the information presented in the table above due to the effects of rounding.

As of the effective time of the Merger, each issued and outstanding share of common stock of N&B (except for shares of common stock of N&B held by N&B as treasury stock or by DuPont, which were canceled and ceased to exist and no consideration was delivered in exchange therefor) was converted into the right to receive one share of common stock of IFF. The Merger was completed in exchange for 141,740,461 shares of IFF common stock, par value \$0.125 per share (or cash payment in lieu of fractional shares), which had been approved in the special shareholder meeting that occurred on August 27, 2020 where IFF shareholders voted to approve the issuance of shares of IFF common stock in connection with the N&B Transaction, pursuant to the Merger Agreement. The shares issued in the Merger represented approximately 55.4% of the common stock of IFF on a fully diluted basis, after giving effect to the Merger, as of February 1, 2021.

The Company issued 16,500,000 TEUs, consisting of a prepaid SPC and a senior amortizing note, for net proceeds of approximately \$800 million on September 17, 2018. On September 14, 2021, the Company notified holders of the TEUs that the final settlement rate in respect of each SPC was 0.330911 shares of IFF's common stock. On September 15, 2021, 5,460,031 shares of IFF's common stock were issued in settlement of the SPCs. The SPC conversion factor is based on the VWAP per share of the Company's common stock. For purposes of calculating basic net income per share, the settlement rate of 0.330911 shares per SPC, the final settlement rate, was used on December 31, 2021 and 0.313400 shares per SPC was used on December 31, 2020. For purposes of calculating diluted earnings per share, the settlement rate of 0.330911 shares per SPC, the final settlement rate, was used on December 31, 2021 and 0.383900 shares per SPC was used on December 31, 2020.

The Company has issued shares of Purchased Restricted Stock Units ("PRsUs") which contain non-forfeitable rights to dividends and thus are considered participating securities which are required to be included in the computation of basic and diluted earnings per share pursuant to the two-class method. The two-class method was not presented since there was no difference between basic net (loss) income per share for both common shareholders and PRsU holders as of December 31, 2022, 2021 and 2020, and there was no difference between diluted net loss per share for both common shareholders and PRsU holders as of December 31, 2022. The difference between diluted net income per share for both common shareholders and PRsU holders was less than \$0.01 and \$0.04 per share as of December 31, 2021 and 2020. In addition, for each year, the number of PRsUs outstanding as of December 31, 2022, 2021 and 2020 was immaterial. Net loss allocated to such PRsUs during 2022 was not material and net income allocated to such PRsUs during 2021 and 2020 was not material.

There were approximately 0.3 million potentially dilutive securities excluded from the computation of diluted net loss per share for the year ended December 31, 2022 because there was a net loss attributable to IFF for the period and, as such, the inclusion of these securities would have been anti-dilutive.

For the year ended December 31, 2022, there were approximately 0.3 million share equivalents that had an anti-dilutive effect and therefore were excluded from the computation of diluted net loss per share. There were no share equivalents excluded from the computation of diluted net income per share for the years ended December 31, 2021 and 2020.

NOTE 12. SHAREHOLDERS' EQUITY

Dividends

Cash dividends declared per share were \$3.20, \$3.12 and \$3.04 for the years ended December 31, 2022, 2021 and 2020, respectively. The Consolidated Balance Sheets reflect \$206 million of dividends payable at December 31, 2022. This amount relates to a cash dividend of \$0.81 per share declared in December 2022 and paid in January 2023. Dividends declared, but not paid as of December 31, 2021 and December 31, 2020 were \$201 million (\$0.79 per share) and \$82 million (\$0.77 per share), respectively.

Share Repurchases

In December 2012, the Board of Directors authorized a \$250 million share repurchase program, which commenced in the first quarter of 2013. In August 2015, the Board of Directors approved an additional \$250 million share repurchase authorization and extension through December 31, 2017. Based on the total remaining amount of \$56 million available under the amended repurchase program as of October 31, 2017, the Board of Directors re-approved on November 1, 2017 a \$250 million share repurchase authorization and extension for a total value of \$300 million available under the program.

As of May 7, 2018, the Company has suspended its share repurchases. On November 1, 2022, the share repurchase program expired.

NOTE 13. STOCK COMPENSATION PLANS

The Company has various equity plans under which its officers, senior management, other key employees and Board of Directors may be granted options to purchase IFF common stock or other forms of stock-based awards.

The cost of all employee stock-based awards are principally recognized on a straight-line attribution basis over their respective vesting periods, net of estimated forfeitures. Total stock-based compensation expense included in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income was as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,		
	2022	2021	2020
Equity-based awards	\$ 49	\$ 54	\$ 36
Liability-based awards	2	8	4
Total stock-based compensation	51	62	40
Less tax benefit	(8)	(13)	(8)
Total stock-based compensation, net of tax	\$ 43	\$ 49	\$ 32

The shareholders of the Company approved the Company's 2021 Stock Award and Incentive Plan (the "2021 Plan") on May 5, 2021. The 2021 Plan replaced the Company's 2015 Stock Award and Incentive Plan (the "2015 Plan") and the Company's 2010 Stock Award and Incentive Plan (the "2010 Plan"), and provides the source for future deferrals of cash into deferred stock under the Company's Deferred Compensation Plan (with the Deferred Compensation Plan being deemed a subplan under the 2010 Plan for the sole purpose of funding deferrals under the IFF Share Fund).

Under the 2021 Plan, a total of 2,290,000 shares were authorized for issuance. At December 31, 2022, 1,403,092 shares were subject to outstanding awards and 1,777,205 shares remained available for future awards under all of the Company's equity award plans, including the 2015 Plan and 2010 Plan (excluding shares not yet issued under open cycles of the Company's Long-Term Incentive Plan).

The Company offers a Long-Term Incentive Plan ("LTIP") for senior management. The targeted payout is principally 50% cash and 50% IFF common stock at the end of the three-year cycle.

For the 2020-2022 cycle, the LTIP awards are earned based on the achievement of: (i) an annual Leverage Ratio for 2020 (representing one-sixth of the award value), (ii) a 2-year cumulative Leverage Ratio for 2021-2022 (representing one-third of the award value) and (iii) Relative TSR targets (representing one-half of the award value). For the 2021-2023 cycle, the LTIP awards are earned based on the achievement of: (i) an annual Leverage Ratio for 2021, 2022 and 2023 (representing one-half of the award value) and (ii) Relative TSR targets (representing one-half of the award value). For the 2022-2024 cycle, the LTIP awards are earned based on the achievement of: (i) 3-year cumulative Return on Invested Capital (“ROIC”) (representing one-half of the award value) and (ii) Relative TSR targets (representing one-half of the award value).

The Leverage Ratio measures Net debt as compared to a measure profitability. The ROIC measures adjusted net operating profit after tax against average invested capital. When the award is granted, 50% of the target dollar value of the award is converted to a number of “notional” shares based on the closing price at the beginning of the cycle. For those shares whose payout is based on Relative TSR, compensation expense is recognized using a graded-vesting attribution method, while compensation expense for the remainder of the performance shares (Leverage Ratio or ROIC targets for the applicable cycle) is recognized on a straight-line basis over the vesting period based on the probable outcome of the performance condition.

The 2018-2020 cycle concluded at the end of 2020 and an aggregate 7,484 shares of common stock were issued in March 2021. The 2019-2021 cycle concluded at the end of 2021 and no shares of common stock were issued in March 2022. The 2020-2022 cycle concluded at the end of 2022 and no shares of common stock will be issued in March 2023.

In 2006, the Board of Directors approved the Equity Choice Program (the “Program”) for senior management. This program continues under the 2015 Plan. Eligible employees can choose from among three equity alternatives and will be granted such equity awards up to certain dollar awards depending on the participant’s employment grade level. A participant may choose among (1) Stock-Settled Appreciation Rights (“SSARs”), (2) Restricted Stock Units (“RSUs”) or (3) PRSUs.

Transaction with Nutrition and Biosciences, Inc.

In connection with the Merger, N&B employees’ outstanding (unvested and/or vested and unexercised) equity awards were converted into equity awards denominated in shares of the Company’s common stock based on a defined exchange ratio. N&B employees’ equity awards were converted into 335,347 IFF stock options, 258,572 IFF RSU awards and 5,816 IFF SAR awards.

For converted RSU awards, the fair value of the equity award is based on the Closing Date market price of IFF stock. For converted stock options and SAR awards, the exercise price per share of the converted award is equal to the exercise price per share of the N&B award immediately prior to the Merger divided by the exchange ratio. The fair value of the IFF stock options and SAR awards that the Company issued in connection with the Merger was estimated using the Black Scholes model.

The converted awards were generally issued with the same terms and conditions as were applicable prior to the Transaction. At the Closing Date, approximately \$25 million of the fair value of the replacement awards granted to N&B employees was attributable to pre-combination service and was included in the purchase price. As of December 31, 2022, post-combination expense of approximately \$11 million is expected to be recognized related to the replacement awards over the remaining post-combination service period, approximately up to three years.

SSARs and Options

SSARs are a contractual right to receive the value, in shares of Company stock, of the appreciation in our stock price from the grant date to the date the SSARs are exercised by the participant. SSARs granted become exercisable on the third anniversary of the grant date and have a maximum term of seven years. SSARs do not require a financial investment by the SSARs grantee. Stock options require the participant to pay the exercise price at the time they exercise their stock options. No stock options were granted in 2022, 2021 or 2020.

SSARs and options activity was as follows:

<i>(SHARE AMOUNTS IN THOUSANDS)</i>	Shares Subject to SSARs/Options	Weighted Average Exercise Price	SSARs/ Options Exercisable
December 31, 2021	287	\$ 107.48	235
Granted	134	126.91	
Exercised	(84)	106.66	
Canceled	(6)	117.04	
December 31, 2022	331	\$ 115.35	182
Expected to Vest at December 31, 2022	142	\$ 122.27	

The weighted average exercise price of SSARs and options exercisable at December 31, 2022, 2021 and 2020 were \$109.50, \$109.77 and \$118.10, respectively.

SSARs and options outstanding at December 31, 2022 was as follows:

<u>Price Range</u>	<u>Number Outstanding (in thousands)</u>	<u>Weighted Average Remaining Contractual Life (in years)</u>	<u>Weighted Average Exercise Price</u>	<u>Aggregate Intrinsic Value (in millions)</u>
Over \$65	331	5.65	\$ 115.35	\$ 2

SSARs and options exercisable as of December 31, 2022 was as follows:

<u>Price Range</u>	<u>Number Exercisable (in thousands)</u>	<u>Weighted Average Remaining Contractual Life (in years)</u>	<u>Weighted Average Exercise Price</u>	<u>Aggregate Intrinsic Value (in millions)</u>
Over \$65	182	5.05	\$ 109.50	\$ 2

The total intrinsic value of options/SSARs exercised during 2022 was approximately \$2 million, \$3 million for 2021 and was not material for 2020.

As of December 31, 2022, the total unrecognized compensation cost related to non-vested SSARs granted was approximately \$4 million; such cost is expected to be recognized over a weighted average period of approximately 1.91 years.

Restricted Stock Units

The Company has granted RSUs to eligible employees and members of the Board of Directors. The Company has granted both time-based RSUs, which contain no performance criteria provisions, and performance-based RSUs. Such RSUs are subject to forfeitures or adjustments if certain conditions are not met, including service period or pre-established cumulative performance targets. RSUs principally vest 100% at the end of three years. An RSU's fair value is calculated based on the market price of the Company's stock at date of grant, with an adjustment to reflect the fact that such awards do not participate in dividend rights. The aggregate fair value is amortized to expense ratably over the vesting period.

RSU activity was as follows:

<u>(SHARE AMOUNTS IN THOUSANDS)</u>	<u>Number of Shares</u>	<u>Weighted Average Grant Date Fair Value Per Share</u>
December 31, 2021	777	\$ 126.20
Granted	556	115.13
Vested	(322)	124.62
Forfeited	(58)	129.36
Change due to performance conditions, net	(16)	120.48
December 31, 2022	937	\$ 120.81

The total fair value of RSUs that vested during the year ended December 31, 2022 was approximately \$40 million.

As of December 31, 2022, there was approximately \$58 million of total unrecognized compensation cost related to non-vested RSUs granted under the equity incentive plans; such cost is expected to be recognized over a weighted average period of approximately 1.98 years.

Purchased Restricted Stock Units

The grant of awards under the Program provided for eligible employees to purchase shares of IFF common stock and deposit them into an escrow account. For each share deposited in escrow by the eligible employee, the Company matched with the grant of a restricted stock unit. The shares of restricted stock units generally vest on the third anniversary of the grant date, are subject to continued employment and other specified conditions, and pay dividends if and when paid by the Company. Holders of restricted stock units have, in most instances, all of the rights of shareholders, except that they may not sell, assign, pledge or otherwise encumber such shares. PRSUs pay dividend equivalents and do not have voting rights.

The following table summarizes the Company's PRSU activity for the years ended December 31, 2022, 2021 and 2020:

<i>(DOLLARS IN MILLIONS)</i>	Issued Shares	Aggregate Purchase Price	Covered Shares
2022	43,690	\$ 6	21,845
2021	61,870	\$ 9	30,935
2020	66,160	\$ 9	33,080

PRSU activity was as follows:

<i>(SHARE AMOUNTS IN THOUSANDS)</i>	Number of Shares	Weighted Average Grant Date Fair Value Per Share
December 31, 2021	155	\$ 138.36
Granted	44	126.49
Vested	(95)	138.06
Forfeited	(14)	135.50
December 31, 2022	90	\$ 133.36

The total fair value of PRSUs that vested during the year ended December 31, 2022 was approximately \$13 million.

As of December 31, 2022, there was approximately \$4 million of total unrecognized compensation cost related to non-vested PRSUs granted under the equity incentive plans; such cost is expected to be recognized over a weighted average period of approximately 1.87 years.

Liability Awards

The Company has granted cash-settled RSUs ("Cash RSUs") to eligible employees that are paid out 100% in cash upon vesting. Such RSUs are subject to forfeiture if certain conditions are not met. Cash RSUs principally vest 100% at the end of three years and contain no performance criteria provisions. A Cash RSU's fair value is calculated based on the market price of the Company's stock at the date of the closing period and is accounted for as a liability award. The aggregate fair value is amortized to expense ratably over the vesting period.

Cash RSU activity was as follows:

<i>(SHARE AMOUNTS IN THOUSANDS)</i>	Cash RSUs	Weighted Average Fair Value Per Share
December 31, 2021	116	\$ 150.65
Granted	43	104.84
Vested	(38)	130.67
Forfeited	(2)	107.00
December 31, 2022	119	\$ 104.84

The total fair value of Cash RSUs that vested during the year ended December 31, 2022 was approximately \$5 million.

As of December 31, 2022, there was approximately \$5 million of total unrecognized compensation cost related to non-vested Cash RSUs granted under the equity incentive plans; such cost is expected to be recognized over a weighted average period of approximately 1.81 years. The aggregate compensation cost will be adjusted based on changes in the Company's stock price.

NOTE 14. SEGMENT INFORMATION

The Company is organized into four reportable operating segments: Nourish, Health & Biosciences, Scent and Pharma Solutions. These segments align with the internal structure to manage these businesses. The Company's Chief Operating Decision Maker regularly reviews financial information to allocate resources and assess performance utilizing these segments.

Nourish is comprised of three business units, Ingredients, Flavors and Food Designs, with a diversified portfolio across natural and plant-based specialty food ingredients, flavor compounds, and savory solutions and inclusions, respectively. Ingredients provide texturizing solutions to the food industry, food protection solutions used in food and beverage products, specialty soy and pea protein with value-added formulations, emulsifiers and sweeteners. Flavors provide a range of flavor compounds and natural taste solutions that are ultimately used by IFF's customers in savory products, beverages, sweets, and dairy products. Flavors also provide value-added spices and seasoning ingredients for meat, food service, convenience, alternative protein and culinary products. Food Designs provide savory solution products such as spices, sauces, marinades and mixtures. Additionally, Food Designs provide inclusion products that help with taste and texture by, among other things, combining flavorings with fruit, vegetables, and other natural ingredients for a wide range of food products, such as health snacks, baked goods, cereals, pastries, ice cream and other dairy products.

Health & Biosciences is comprised of five business units, Health, Cultures & Food Enzymes, Home & Personal Care, Animal Nutrition and Grain Processing, with a biotechnology-driven portfolio of products that serve the health and wellness, food, consumer and industrial markets. Products within this portfolio range from enzymes, food cultures, probiotics and specialty ingredients for non-food applications. Health provides ingredients for dietary supplements, food and beverage, specialized nutrition and pharma. Cultures & Food Enzymes provide products that aim to serve the global demand for healthy, natural, clean label and fermented food for fresh dairy, cheese, bakery and brewing products. This is accomplished by providing IFF's customers with products that allow for extended shelf life and stability, which help to improve customers' products and performance. The business unit's enzyme solution also allows IFF's customers to provide low sugar, high fiber and lactose-free dairy products. Home & Personal Care produces enzymes for detergents, cleaning and textile processing products in the laundry, dishwashing, textiles and industrials and personal care markets that help to enhance product and process performances. Animal Nutrition produces enzymes that help to improve the product and process performance of animal feed products, which aim to lessen environmental impact by reducing farm waste. Grain Processing produces enzymes for biofuel production and carbohydrate processing.

Scent is comprised of (1) Fragrance Compounds, which are ultimately used by IFF's customers in two broad categories: Fine Fragrances, including perfumes and colognes, and Consumer Fragrances, including fragrance compounds for personal care (e.g., soaps), household products (e.g., detergents and cleaning agents) and beauty care, including toiletries; (2) Fragrance Ingredients, consisting of synthetic and natural ingredients that can be combined with other materials to create unique fine fragrance and consumer fragrance compounds; and (3) Cosmetic Active Ingredients, consisting of active and functional ingredients, botanicals and delivery systems to support our customers' cosmetic and personal care product lines. Major fragrance customers include the cosmetics industry, including perfume and toiletries manufacturers, and the household products industry, including manufacturers of soaps, detergents, fabric care, household cleaners and air fresheners.

Pharma Solutions is comprised of a vast portfolio including cellulose and seaweed-based pharmaceutical excipients, used to improve the functionality and delivery of active pharmaceutical ingredients, including controlled or modified drug release formulations, and enabling the development of more effective pharmaceutical finished dosage formats. Pharma Solutions excipients are used in prescription and over-the-counter pharmaceuticals and dietary supplements. Pharma Solutions products also serve a variety of other specialty and industrial end-uses including coatings, inks, electronics, agriculture, and consumer products.

Beginning the first quarter of 2021, the Company's Chief Operating Decision Maker evaluates the performance of these reportable operating segments based on Segment Adjusted Operating EBITDA, which is defined as (Loss) Income Before Taxes before depreciation and amortization expense, interest expense, restructuring and other charges and certain non-recurring items. Prior period amounts have been recast to reflect any necessary changes in segment profitability measures.

Reportable segment information is as follows:

	December 31,		
	2022	2021	2020
<i>(DOLLARS IN MILLIONS)</i>			
Net sales			
Nourish	\$ 6,829	\$ 6,264	\$ 2,886
Health & Biosciences	2,339	2,329	134
Scent	2,301	2,254	2,064
Pharma Solutions	971	809	—
Consolidated	<u>\$ 12,440</u>	<u>\$ 11,656</u>	<u>\$ 5,084</u>

	December 31,	
	2022	2021
<i>(DOLLARS IN MILLIONS)</i>		
Segment assets		
Nourish	\$ 17,008	\$ 17,449
Health & Biosciences	10,877	14,774
Scent	4,310	4,078
Pharma Solutions	3,212	3,357
Consolidated	<u>\$ 35,407</u>	<u>\$ 39,658</u>

	December 31,		
	2022	2021	2020
<i>(DOLLARS IN MILLIONS)</i>			
Segment Adjusted Operating EBITDA:			
Nourish	\$ 1,176	\$ 1,172	\$ 599
Health & Biosciences	634	625	40
Scent	423	463	416
Pharma Solutions	222	165	—
Total	2,455	2,425	1,055
Depreciation & Amortization	(1,179)	(1,156)	(325)
Interest Expense	(336)	(289)	(132)
Other Income, net	37	58	7
Acquisition Related Costs (a)	4	—	—
Restructuring and Other Charges	(12)	(41)	(17)
Gains (Losses) on Sale of Fixed Assets	3	1	(4)
Impairment of Goodwill (b)	(2,250)	—	—
Impairment of Long-Lived Assets (c)	(120)	—	—
Shareholder Activism Related Costs (d)	(3)	(7)	—
Business Divestiture Costs (e)	(110)	(42)	—
Employee Separation Costs (f)	(11)	(29)	(3)
Strategic Initiative Costs (g)	(3)	—	—
Global Shared Services Implementation Costs (h)	(5)	—	—
Frutarom Acquisition Related Costs (i)	(1)	(2)	(1)
Compliance Review & Legal Defense Costs (j)	—	—	(3)
N&B Inventory Step-Up Costs	—	(368)	—
N&B Transaction Related Costs (k)	—	(91)	(29)
Integration Related Costs (l)	(94)	(105)	(107)
(Loss) Income Before Taxes	<u>\$ (1,625)</u>	<u>\$ 354</u>	<u>\$ 441</u>

(a) Represents costs related to the acquisition of Health Wright Products, primarily consulting and legal fees, offset in part by earn out adjustments.

(b) Represents costs related to the impairment of goodwill in the Health & Biosciences reporting unit.

(c) Represents costs related to the impairment of intangible and fixed assets of an asset group that operates primarily in Russia.

(d) Represents shareholder activist related costs, primarily professional fees.

(e) Represents costs, including establishment of deferred tax liabilities, related to the Company's sales and planned sales of businesses, primarily legal and professional fees.

(f) Represents costs related to severance, including accelerated stock compensation expense, for certain employees and executives who have been separated or will separate from the Company.

(g) Represents costs related to the Company's strategic assessment and business portfolio optimization efforts, primarily consulting fees.

(h) Represents costs related to the Company's efforts of restructuring the Global Shared Services Centers, primarily consulting fees.

- (i) Represents transaction-related costs and expenses related to the acquisition of Frutarom, primarily includes earn-out payments, net of adjustments.
- (j) Costs related to reviewing the nature of inappropriate payments and review of compliance in certain other countries. In addition, includes legal costs for related shareholder lawsuits.
- (k) Represents transaction costs and expenses related to the transaction with N&B, primarily legal and professional fees.
- (l) Represents costs related to integration activities since 2018, primarily for Frutarom and N&B. For 2022, represents costs primarily related to external consulting fees and internal integration costs, including salaries of individuals who are fully dedicated to integration efforts. For 2021 and 2020, represents costs primarily related to performance stock awards and consulting fees for advisory services.

The Company has not disclosed revenues at a lower level than provided herein, such as revenues from external customers by product, as it is impracticable for it to do so.

The Company had no customers that accounted for greater than 10% of consolidated net sales in 2022, 2021 and 2020.

Long-lived assets, net, by country, consisted as follows:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
United States	\$ 1,771	\$ 2,041
China	258	259
Denmark	250	251
Finland	212	196
France	187	188
Germany	181	156
Other	1,344	1,277
Consolidated	<u>\$ 4,203</u>	<u>\$ 4,368</u>

Segment capital expenditures and depreciation and amortization consisted as follows:

<i>(DOLLARS IN MILLIONS)</i>	Capital Expenditures			Depreciation and Amortization		
	2022	2021	2020	2022	2021	2020
Nourish	\$ 215	\$ 183	\$ 98	\$ 596	\$ 594	\$ 211
Health & Biosciences	160	139	7	363	353	36
Scent	56	41	87	81	84	78
Pharma Solutions	73	30	—	139	125	—
Consolidated	<u>\$ 504</u>	<u>\$ 393</u>	<u>\$ 192</u>	<u>\$ 1,179</u>	<u>\$ 1,156</u>	<u>\$ 325</u>

Net sales are attributed to individual regions based upon the destination of product delivery and are as follows:

<i>(DOLLARS IN MILLIONS)</i>	Net Sales by Geographic Area		
	2022	2021	2020
Europe, Africa and Middle East	\$ 4,219	\$ 4,093	\$ 1,987
Greater Asia	2,876	2,728	1,162
North America	3,853	3,499	1,228
Latin America	1,492	1,336	707
Consolidated	<u>\$ 12,440</u>	<u>\$ 11,656</u>	<u>\$ 5,084</u>

<i>(DOLLARS IN MILLIONS)</i>	Net Sales by Geographic Area		
	2022	2021	2020
Net sales related to the U.S.	\$ 3,611	\$ 3,211	\$ 1,093
Net sales attributed to all foreign countries	8,829	8,445	3,991

No non-U.S. country had net sales greater than 6% of total consolidated net sales for 2022 and net sales greater than 7% and 6% of total consolidated net sales for 2021 and 2020, respectively.

NOTE 15. EMPLOYEE BENEFITS

The Company has pension and/or other retirement benefit plans covering approximately one-fifth of active employees. In 2007, the Company amended its U.S. qualified and non-qualified pension plans under which accrual of future benefits was suspended for all participants that did not meet the rule of 70 (age plus years of service equal to at least 70 as of December 31, 2007). Pension benefits are generally based on years of service and compensation during the final years of employment. Plan assets consist primarily of equity securities and corporate and government fixed income securities. Substantially all pension benefit costs are funded as accrued; such funding is limited, where applicable, to amounts deductible for income tax purposes. Certain other retirement benefits are provided by general corporate assets.

In connection with the Merger with N&B, as of the Closing Date, the Company assumed responsibility for approximately 20 additional defined benefit plans and recognized liabilities in the aggregate amount of \$221 million.

The Company sponsors a qualified defined contribution plan covering substantially all U.S. employees. Under this plan, the Company matches 100% of participants' contributions up to 4% of compensation and 75% of participants' contributions from over 4% to 8%. Employees that are still eligible to accrue benefits under the pension plans are limited to a 50% match of up to 6% of the participants' compensation.

In addition to pension benefits, certain health care and life insurance benefits are provided to qualifying U.S. employees upon retirement from IFF. Such coverage is provided through insurance plans with premiums based on benefits paid. The Company does not generally provide health care or life insurance coverage for retired employees of foreign subsidiaries; such benefits are provided in most foreign countries by government-sponsored plans, and the cost of these programs is not material.

The Company offers a non-qualified Deferred Compensation Plan ("DCP") for certain key employees and non-employee directors. Eligible employees and non-employee directors may elect to defer receipt of salary, incentive payments and Board of Directors' fees into participant-directed investments which are generally invested by the Company in individual variable life insurance contracts it owns that are designed to informally fund savings plans of this nature. The cash surrender value of life insurance is based on the net asset values of the underlying funds available to plan participants. At December 31, 2022 and December 31, 2021, the Consolidated Balance Sheets reflect liabilities of approximately \$53 million and \$64 million, respectively, related to the DCP in Other liabilities and approximately \$25 million and \$26 million, respectively, included in Capital in excess of par value related to the portion of the DCP that will be paid out in IFF shares.

The total cash surrender value of life insurance contracts the Company owns in relation to the DCP and post-retirement life insurance benefits amounted to \$45 million and \$52 million at December 31, 2022 and 2021, respectively, and are recorded in Other assets in the Consolidated Balance Sheets.

The plan assets and benefit obligations of the defined benefit pension plans are measured at December 31 of each year.

	U.S. Plans			Non-U.S. Plans		
	2022	2021	2020	2022	2021	2020
<i>(DOLLARS IN MILLIONS)</i>						
Components of net periodic benefit cost						
Service cost for benefits earned ⁽¹⁾	\$ 1	\$ 1	\$ 1	\$ 34	\$ 41	\$ 24
Interest cost on projected benefit obligation ⁽²⁾	15	71	17	17	10	13
Expected return on plan assets ⁽²⁾	(21)	(106)	(28)	(42)	(55)	(46)
Net amortization of deferrals ⁽²⁾	8	29	8	11	19	15
Settlements and curtailments ⁽²⁾	—	—	—	—	(10)	5
Net periodic benefit cost (income)	3	(5)	(2)	20	5	11
Defined contribution and other retirement plans	33	36	13	29	33	7
Total expense	\$ 36	\$ 31	\$ 11	\$ 49	\$ 38	\$ 18
Changes in plan assets and benefit obligations recognized in OCI						
Net actuarial (gain) loss	\$ —	\$ 12		\$ (143)	\$ (135)	
Recognized actuarial loss	(8)	(9)		(12)	(10)	
Prior service cost	—	—		—	(2)	
Recognized prior service (cost) credit	—	—		1	1	
Currency translation adjustment	—	—		(27)	(16)	
Total (gain) loss recognized in OCI (before tax effects)	\$ (8)	\$ 3		\$ (181)	\$ (162)	

(1) Included as a component of Operating Profit.

(2) Included as a component of Other Income (Expense), net.

	Postretirement Benefits		
	2022	2021	2020
<i>(DOLLARS IN MILLIONS)</i>			
Components of net periodic benefit cost			
Service cost for benefits earned	\$ 1	\$ 1	\$ 1
Interest cost on projected benefit obligation	1	7	2
Net amortization and deferrals	(5)	(20)	(5)
Total credit	\$ (3)	\$ (12)	\$ (2)
Changes in plan assets and benefit obligations recognized in OCI			
Net actuarial loss	\$ (16)	\$ (3)	
Recognized actuarial loss	(1)	(2)	
Recognized prior service credit	6	6	
Total recognized in OCI (before tax effects)	\$ (11)	\$ 1	

The weighted-average actuarial assumptions used to determine expense at December 31 of each year are:

	U.S. Plans			Non-U.S. Plans		
	2022	2021	2020	2022	2021	2020
Discount rate	2.86 %	2.51 %	3.26 %	1.43 %	0.85 %	1.49 %
Expected return on plan assets	3.80 %	3.80 %	5.60 %	3.52 %	4.21 %	4.62 %
Rate of compensation increase	3.25 %	3.25 %	3.25 %	2.72 %	2.56 %	2.46 %

Changes in the postretirement benefit obligation and plan assets, as applicable, are detailed in the following table:

<i>(DOLLARS IN MILLIONS)</i>	U.S. Plans		Non-U.S. Plans		Postretirement Benefits	
	2022	2021	2022	2021	2022	2021
Benefit obligation at beginning of year	\$ 662	\$ 682	\$ 1,501	\$ 1,294	\$ 66	\$ 69
Service cost for benefits earned	1	1	34	42	1	1
Interest cost on projected benefit obligation	15	12	17	10	2	1
Actuarial (gain) loss	(139)	(5)	(468)	(146)	(16)	(4)
Plan amendments	—	—	—	(2)	—	—
Adjustments for expense/tax contained in service cost	—	—	(2)	(2)	—	—
Plan participants' contributions	—	—	4	4	—	—
Benefits paid	(38)	(37)	(32)	(34)	(2)	(4)
Curtailments/settlements	—	—	(21)	(39)	—	—
Translation adjustments	—	—	(104)	(93)	—	—
Acquisitions/Transferred Liabilities	—	—	—	465	—	3
Other	(1)	9	1	2	(1)	—
Benefit obligation at end of year	\$ 500	\$ 662	\$ 930	\$ 1,501	\$ 50	\$ 66
Fair value of plan assets at beginning of year	\$ 649	\$ 678	\$ 1,320	\$ 1,145		
Actual return on plan assets	(118)	3	(286)	25		
Employer contributions	5	5	31	32		
Participants' contributions	—	—	4	4		
Benefits paid	(38)	(37)	(32)	(34)		
Settlements	—	—	(21)	(24)		
Translation adjustments	—	—	(96)	(74)		
Acquisitions/Transferred Assets	—	—	—	247		
Other	—	—	—	(1)		
Fair value of plan assets at end of year	\$ 498	\$ 649	\$ 920	\$ 1,320		
Funded status at end of year	\$ (2)	\$ (13)	\$ (10)	\$ (181)		

The amounts recognized in the balance sheet are detailed in the following table:

<i>(DOLLARS IN MILLIONS)</i>	U.S. Plans		Non-U.S. Plans	
	2022	2021	2022	2021
Other assets	\$ 51	\$ 53	\$ 129	\$ 83
Other current liabilities	(6)	(5)	(1)	(2)
Retirement liabilities	(47)	(61)	(138)	(262)
Net amount recognized	\$ (2)	\$ (13)	\$ (10)	\$ (181)

The amounts recognized in AOCI are detailed in the following table:

<i>(DOLLARS IN MILLIONS)</i>	U.S. Plans		Non-U.S. Plans		Postretirement Benefits	
	2022	2021	2022	2021	2022	2021
Net actuarial (gain) loss	\$ 129	\$ 137	\$ 110	\$ 291	\$ (3)	\$ 14
Prior service cost (credit)	—	—	(3)	(3)	(9)	(15)
Total AOCI (before tax effects)	\$ 129	\$ 137	\$ 107	\$ 288	\$ (12)	\$ (1)

	U.S. Plans		Non-U.S. Plans	
	2022	2021	2022	2021
<i>(DOLLARS IN MILLIONS)</i>				
Accumulated Benefit Obligation — end of year	\$ 495	\$ 654	\$ 870	\$ 1,410
Information for Pension Plans with an ABO in excess of Plan Assets:				
Projected benefit obligation	\$ 49	\$ 63	\$ 169	\$ 944
Accumulated benefit obligation	49	62	150	330
Fair value of plan assets	—	—	86	840
Weighted-average assumptions used to determine obligations at December 31				
Discount rate	5.42 %	2.86 %	4.02 %	1.43 %
Rate of compensation increase	3.75 %	3.25 %	3.00 %	2.72 %

	U.S. Plans		Non-U.S. Plans		Postretirement Benefits
<i>(DOLLARS IN MILLIONS)</i>					
Estimated Future Benefit Payments					
2023	\$	39	\$	34	\$ 3
2024		39		34	3
2025		39		36	4
2026		40		38	4
2027		39		39	4
2028 - 2032		188		223	18
Contributions					
Required Company Contributions in the Following Year (2023)	\$	5	\$	32	\$ —

The Company considers a number of factors in determining and selecting assumptions for the overall expected long-term rate of return on plan assets. The Company considers the historical long-term return experience of its assets, the current and expected allocation of its plan assets and expected long-term rates of return. The Company derives these expected long-term rates of return with the assistance of its investment advisors. The Company bases its expected allocation of plan assets on a diversified portfolio consisting of domestic and international equity securities, fixed income, property and alternative asset classes. The asset allocation is monitored on an ongoing basis.

The Company considers a variety of factors in determining and selecting its assumptions for the discount rate at December 31. For the U.S. plans, the discount rate was based on the internal rate of return for a portfolio of high quality bonds rated Aa or higher by either Moody's or Standard & Poor's with maturities that are consistent with the projected future benefit payment obligations of the plan. For the Non-U.S. Plans, the discount rates were determined by region and are based on high quality long-term corporate bonds. Consideration has been given to the duration of the liabilities in each plan when selecting the bonds to be used in determining the discount rate. The rate of compensation increase for all plans and the medical cost trend rate for the applicable U.S. plans are based on plan experience.

The percentage of assets in the Company's pension plans, by type, is as follows:

	U.S. Plans		Non-U.S. Plans	
	2022	2021	2022	2021
Cash and cash equivalents	2 %	1 %	3 %	6 %
Equities	47 %	45 %	18 %	18 %
Fixed income	51 %	54 %	37 %	34 %
Property	— %	— %	9 %	6 %
Alternative and other investments	— %	— %	33 %	36 %

With respect to the U.S. plans, the expected return on plan assets was determined based on an asset allocation model using the current target allocation, real rates of return by asset class and an anticipated inflation rate. The target investment allocation is 10% equity securities and 90% fixed income securities.

The expected annual rate of return for the non-U.S. plans employs a similar set of criteria adapted for local investments, inflation rates and in certain cases specific government requirements. The target asset allocation, for the non-U.S. plans, consists of approximately: 35% in fixed income securities; 35% in alternative investments; 15% in equity securities; and 15% in properties.

The following tables present the Company's plan assets for the U.S. and non-U.S. plans using the fair value hierarchy as of December 31, 2022 and 2021. The plans' assets were accounted for at fair value and are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement requires judgment, and may affect the valuation of fair value assets and their placement within the fair value hierarchy levels. For more information on a description of the fair value hierarchy, see Note 16.

U.S. Plans for the Year Ended December 31, 2022				
<i>(DOLLARS IN MILLIONS)</i>	Level 1	Level 2	Level 3	Total
Cash Equivalents	\$ —	\$ 9	\$ —	\$ 9
Fixed Income Securities				
Government & Government Agency Bonds	—	6	—	6
Corporate Bonds	—	73	—	73
Municipal Bonds	—	5	—	5
Assets measured at net asset value⁽¹⁾				404
Total	<u>\$ —</u>	<u>\$ 93</u>	<u>\$ —</u>	<u>\$ 497</u>
Receivables				\$ 1
Total				<u>\$ 498</u>

U.S. Plans for the Year Ended December 31, 2021				
<i>(DOLLARS IN MILLIONS)</i>	Level 1	Level 2	Level 3	Total
Cash Equivalents	\$ —	\$ 5	\$ —	\$ 5
Fixed Income Securities				
Government & Government Agency Bonds	—	15	—	15
Corporate Bonds	—	77	—	77
Municipal Bonds	—	4	—	4
Assets measured at net asset value⁽¹⁾				547
Total	<u>\$ —</u>	<u>\$ 101</u>	<u>\$ —</u>	<u>\$ 648</u>
Receivables				\$ 1
Total				<u>\$ 649</u>

(1) Investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in the table above are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the Consolidated Balance Sheets. The total amount measured at net asset value includes approximately \$234 million and \$294 million in pooled equity funds and \$170 million and \$253 million in fixed income mutual funds for the years ended December 31, 2022 and 2021, respectively.

Non-U.S. Plans for the Year Ended December 31, 2022				
<i>(DOLLARS IN MILLIONS)</i>	Level 1	Level 2	Level 3	Total
Cash	\$ 14	\$ 9	\$ —	\$ 23
Equity Securities				
U.S. Large Cap	73	—	—	73
U.S. Mid Cap	6	—	—	6
Non-U.S. Large Cap	79	—	—	79
Non-U.S. Mid Cap	4	—	—	4
Non-U.S. Small Cap	1	—	—	1
Emerging Markets	7	—	—	7
Fixed Income Securities				
U.S. Corporate Bonds	35	—	—	35
Non-U.S. Treasuries/Government Bonds	144	—	—	144
Non-U.S. Corporate Bonds	34	75	—	109
Non-U.S. Asset-Backed Securities	—	46	—	46
Non-U.S. Other Fixed Income	2	—	—	2
Alternative Types of Investments				
Insurance Contracts	—	177	—	177
Derivative Financial Instruments	—	56	—	56
Absolute Return Funds	4	2	—	6
Other	—	64	3	67
Property				
Non-U.S. Property	4	—	81	85
Total	<u>\$ 407</u>	<u>\$ 429</u>	<u>\$ 84</u>	<u>\$ 920</u>

Non-U.S. Plans for the Year Ended December 31, 2021				
<i>(DOLLARS IN MILLIONS)</i>	Level 1	Level 2	Level 3	Total
Cash	\$ 37	\$ 36	\$ —	\$ 73
Equity Securities				
U.S. Large Cap	100	—	—	100
Non-U.S. Large Cap	104	—	—	104
Non-U.S. Mid Cap	1	—	—	1
Non-U.S. Small Cap	1	—	—	1
Emerging Markets	30	—	—	30
Fixed Income Securities				
U.S. Corporate Bonds	42	—	—	42
Non-U.S. Treasuries/Government Bonds	162	—	—	162
Non-U.S. Corporate Bonds	58	137	—	195
Non-U.S. Asset-Backed Securities	—	51	—	51
Non-U.S. Other Fixed Income	2	—	—	2
Alternative Types of Investments				
Insurance Contracts	—	265	—	265
Derivative Financial Instruments	—	91	—	91
Absolute Return Funds	4	110	—	114
Other	—	2	10	12
Property				
Non-U.S. Property	5	—	72	77
Total	<u>\$ 546</u>	<u>\$ 692</u>	<u>\$ 82</u>	<u>\$ 1,320</u>

Cash and cash equivalents are primarily held in registered money market funds which are valued using a market approach based on the quoted market prices of identical instruments. Other cash and cash equivalents are valued daily by the fund using a market approach with inputs that include quoted market prices for similar instruments.

Equity securities are primarily valued using a market approach based on the quoted market prices of identical instruments. Pooled funds are typically common or collective trusts valued at their net asset values (NAVs).

Fixed income securities are primarily valued using a market approach with inputs that include broker quotes and benchmark yields.

Derivative instruments are valued by the custodian using closing market swap curves and market derived inputs.

Property values are primarily based on valuation of the underlying investments, which include inputs such as cost, discounted future cash flows, independent appraisals and market comparable data.

Hedge funds are valued based on valuation of the underlying securities and instruments within the funds. Quoted market prices are used when available and NAVs are used for unquoted securities within the funds.

Absolute return funds are actively managed funds mainly invested in debt and equity securities and are valued at their NAVs.

The following table presents a reconciliation of Level 3 non-U.S. plan assets held during the year ended December 31, 2022:

	Non-U.S. Plans		
	Property	Hedge Funds	Total
<i>(DOLLARS IN MILLIONS)</i>			
Ending balance as of December 31, 2021	\$ 72	\$ 10	\$ 82
Actual return on plan assets	(2)	(1)	(3)
Purchases, sales and settlements	11	(6)	5
Ending balance as of December 31, 2022	\$ 81	\$ 3	\$ 84

The following weighted average assumptions were used to determine the postretirement benefit expense and obligation for the years ended December 31:

	Expense		Liability	
	2022	2021	2022	2021
Discount rate	2.90 %	2.60 %	5.40 %	2.90 %
Current medical cost trend rate	6.75 %	7.00 %	6.50 %	6.75 %
Ultimate medical cost trend rate	4.75 %	4.75 %	4.75 %	4.75 %
Medical cost trend rate decreases to ultimate rate in year	2030	2030	2030	2030

The following table presents the sensitivity of disclosures to changes in selected assumptions for the year ended December 31, 2022:

<i>(DOLLARS IN MILLIONS)</i>	U.S. Pension Plans		Non-U.S. Pension Plans		Postretirement Benefit Plan	
25 Basis Point Decrease in Discount Rate						
Change in PBO	\$	12	\$	38		N/A
Change in ABO		11		37		1
Change in pension expense		—		5		—
25 Basis Point Decrease in Long-Term Rate of Return						
Change in pension expense		1		3		N/A

The Company contributed \$31 million to its non-U.S. pension plans in 2022. No contributions were made to the Company's qualified U.S. pension plans in 2022. The Company made \$5 million in benefit payments with respect to its non-qualified U.S. pension plan. In addition, \$2 million of payments were made with respect to the Company's other postretirement plans.

NOTE 16. FINANCIAL INSTRUMENTS
Fair Value

Accounting guidance on fair value measurements specifies a hierarchy of valuation techniques based on whether the inputs to those valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's market assumptions. These two types of inputs create the following fair value hierarchy:

- Level 1 — Quoted prices for *identical* instruments in active markets.
- Level 2 — Quoted prices for *similar* instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets.
- Level 3 — Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

This hierarchy requires the Company to use observable market data, when available, and to minimize the use of unobservable inputs when determining fair value. The Company determines the fair value of structured liabilities (where performance is linked to structured interest rates, inflation or currency risks) using the LIBOR swap curve and forward interest and exchange rates at period end. Such instruments are classified as Level 2 based on the observability of significant inputs to the model. The Company does not have any instruments classified as Level 3, other than those included in pension asset trusts included in Note 15. These valuations take into consideration the Company's credit risk and its counterparties' credit risk.

The carrying value and the estimated fair values of financial instruments at December 31 consisted of the following:

<i>(DOLLARS IN MILLIONS)</i>	2022		2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
LEVEL 1				
Cash and cash equivalents ⁽¹⁾	\$ 483	\$ 483	\$ 711	\$ 711
LEVEL 2				
Credit facilities and bank overdrafts ⁽²⁾	106	106	7	7
Derivatives				
Derivative assets ⁽³⁾	20	20	—	—
Derivative liabilities ⁽³⁾	56	56	7	7
Commercial paper ⁽²⁾	187	187	324	324
Long-term debt:				
2022 Notes ⁽⁴⁾	—	—	300	300
2023 Notes ⁽⁴⁾	300	298	300	308
2024 Euro Notes ⁽⁴⁾	532	519	565	585
2025 Notes ⁽⁴⁾	1,000	884	1,001	968
2026 Euro Notes ⁽⁴⁾	845	774	900	960
2027 Notes ⁽⁴⁾	1,215	1,006	1,218	1,180
2028 Notes ⁽⁴⁾	398	380	397	452
2030 Notes ⁽⁴⁾	1,510	1,188	1,511	1,466
2040 Notes ⁽⁴⁾	774	535	775	762
2047 Notes ⁽⁴⁾	495	390	494	585
2048 Notes ⁽⁴⁾	787	685	786	1,026
2050 Notes ⁽⁴⁾	1,571	1,021	1,572	1,556
2024 Term Loan Facility ⁽⁵⁾	625	625	625	625
2026 Term Loan Facility ⁽⁵⁾	625	625	625	625

(1) The carrying amount of cash and cash equivalents approximates fair value due to the short maturity of those instruments.

(2) The carrying amount approximates fair value as the interest rate is reset frequently based on current market rates as well as the short maturity of those instruments.

- (3) The carrying amount approximates fair value as the instruments are marked-to-market and held at fair value on the Consolidated Balance Sheets.
- (4) The fair value of the Note is obtained from pricing services engaged by the Company, and the Company receives one price for each security. The fair value provided by the pricing services are estimated using pricing models, where the inputs to those models are based on observable market inputs or recent trades of similar securities. The inputs to the valuation techniques applied by the pricing services are typically benchmark yields, benchmark security prices, credit spreads, reported trades and broker-dealer quotes, all with reasonable levels of transparency.
- (5) The carrying amount approximates fair value as the Term Loans were assumed at fair value and the interest rate is reset frequently based on current market rates.

Derivatives

Forward Currency Forward Contracts

The Company periodically enters into foreign currency forward contracts with the objective of reducing exposure to cash flow volatility associated with its intercompany loans, foreign currency receivables and payables and anticipated purchases of certain raw materials used in operations. These contracts generally involve the exchange of one currency for a second currency at a future date, have maturities not exceeding twelve months and are with counterparties which are major international financial institutions.

Commodity Contracts

The Company utilizes options that are not designated as hedging instruments to reduce exposure to commodity price fluctuations on purchases of inventory such as soybeans, soybean oil and soybean meal.

Cash Flow Hedges

Through the third quarter of 2021, the Company maintained several forward currency contracts which qualified as cash flow hedges. The objective of these hedges is to protect against the currency risk associated with forecasted U.S. dollar ("USD") denominated raw material purchases made by Euro ("EUR") functional currency entities which result from changes in the EUR/USD exchange rate. The effective portions of cash flow hedges are recorded in other comprehensive income ("OCI") as a component of Gains (losses) on derivatives qualifying as hedges in the accompanying Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income. Realized gains/(losses) in accumulated other comprehensive income (loss) ("AOCI") related to cash flow hedges of raw material purchases are recognized as a component of Cost of goods sold in the accompanying Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income in the same period as the related costs are recognized.

There were no cash flow hedges as of December 31, 2022 and December 31, 2021.

Hedges Related to Issuances of Debt

Subsequent to the issuance of the 2021 Euro Notes and 2026 Euro Notes during the third quarter of 2018, the Company designated the debt as a hedge of a portion of its net European investments. Accordingly, the change in the value of the debt that is attributable to foreign exchange movements is recorded in OCI as a component of foreign currency translation adjustments in the accompanying Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income.

Subsequent to the issuance of the 2024 Euro Notes during the first quarter of 2016, the Company designated the debt as a hedge of a portion of its net European investments. Accordingly, the change in the value of the debt that is attributable to foreign exchange movements is recorded in OCI as a component of foreign currency translation adjustments in the accompanying Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income.

During the first quarter of 2016, the Company entered into and terminated two Euro interest rate swap agreements to hedge the anticipated issuance of fixed-rate debt. These swaps were designated as cash flow hedges. The effective portions of cash flow hedges are recorded in OCI as a component of Losses on derivatives qualifying as hedges in the accompanying Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income. The Company incurred a loss of €3 million (\$3 million) due to the termination of these swaps. The loss is being amortized as interest expense over the life of the 2024 Euro Notes as discussed in Note 9.

During the fourth quarter of 2016 and the first quarter of 2017, the Company entered into interest rate swap agreements to hedge the anticipated issuance of fixed-rate debt, which are designated as cash flow hedges. The various hedge instruments were settled upon issuance of the debt on May 18, 2017 and resulted in a loss of approximately \$5 million. As discussed in Note 9, the loss is being amortized as interest expense over the life of the 2047 Notes.

Cross Currency Swaps

During the third quarter of 2022, the Company entered into a transaction to unwind the fourteen outstanding EUR/USD cross currency swaps designated as net investment hedges issued between the third quarter of 2019 and the first quarter of 2022. The Company received proceeds of approximately \$183 million, including \$11 million of interest income. The gain arising from the termination of the swaps has been included as a component of Accumulated other comprehensive loss.

Following the unwinding of the existing swaps, during the third quarter of 2022, the Company entered into twelve new EUR/USD cross currency swaps, with a notional value of \$1.400 billion that mature through November 2030. The swaps all qualified as net investment hedges in order to mitigate a portion of the Company's net European investments from foreign currency risk. As of December 31, 2022, the twelve remaining swaps were in a net liability position with an aggregate fair value of \$37 million which were classified as Other assets and Other liabilities on the Consolidated Balance Sheets. Changes in fair value related to cross currency swaps are recorded in OCI.

The following table shows the notional amount of the Company's derivative instruments outstanding as of December 31, 2022 and December 31, 2021:

<i>(DOLLARS IN MILLIONS)</i>	December 31,	
	2022	2021
Foreign currency contracts ⁽¹⁾	\$ 92	\$ 46
Commodity contracts ⁽¹⁾	(1)	10
Cross currency swaps	1,400	300

(1) Foreign currency contracts and commodity contracts are presented net of contracts bought and sold.

The following tables show the Company's derivative instruments measured at fair value (Level 2 of the fair value hierarchy) as reflected in the Consolidated Balance Sheets as of December 31, 2022 and December 31, 2021:

<i>(DOLLARS IN MILLIONS)</i>	December 31, 2022		
	Fair Value of Derivatives Designated as Hedging Instruments	Fair Value of Derivatives Not Designated as Hedging Instruments	Total Fair Value
Derivative assets⁽¹⁾			
Foreign currency contracts	\$ —	\$ 1	\$ 1
Cross currency swaps	19	—	19
Total derivative assets	\$ 19	\$ 1	\$ 20
Derivative liabilities⁽²⁾			
Cross currency swaps	\$ 56	\$ —	\$ 56

<i>(DOLLARS IN MILLIONS)</i>	December 31, 2021		
	Fair Value of Derivatives Designated as Hedging Instruments	Fair Value of Derivatives Not Designated as Hedging Instruments	Total Fair Value
Derivative liabilities⁽²⁾			
Foreign currency contracts	\$ —	\$ 2	\$ 2
Cross currency swaps	5	—	5
Total derivative liabilities	\$ 5	\$ 2	\$ 7

(1) Derivative assets are recorded to Other assets in the Consolidated Balance Sheets.

(2) Derivative liabilities are recorded as Other current liabilities in the Consolidated Balance Sheets.

The following table shows the effect of the Company's derivative instruments which were not designated as hedging instruments in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the years ended December 31, 2022 and December 31, 2021:

<i>(DOLLARS IN MILLIONS)</i>	Amount of Gain (Loss) For the year ended December 31,		Location of Gain (Loss) Recognized in Income on Derivative
	2022	2021	
Foreign currency contracts	\$ 7	\$ 6	Other (income) expense, net

These net gains (losses) mostly offset any recognized gains (losses) arising from the revaluation of the related intercompany loans during the same respective periods.

The following table shows the effect of the Company's derivative instruments designated as cash flow and net investment hedging instruments, net of tax, in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income for the years ended December 31, 2022 and December 31, 2021:

<i>(DOLLARS IN MILLIONS)</i>	Amount of Gain (Loss) Recognized in OCI on Derivative and Non-Derivative (Effective Portion)		Location of Gain (Loss) Reclassified from AOCI into Income (Effective Portion)	Amount of Gain (Loss) Reclassified from AOCI into Income (Effective Portion)	
	For the years ended December 31,			For the years ended December 31,	
	2022	2021		2022	2021
Derivatives in Cash Flow Hedging Relationships:					
Foreign currency contracts	\$ —	\$ 7	Cost of goods sold	\$ —	\$ (6)
Interest rate swaps ⁽¹⁾	—	1	Interest expense	—	(1)
Derivatives in Net Investment Hedging Relationships:					
Cross currency swaps	(16)	14	N/A	—	—
Non-Derivatives in Net Investment Hedging Relationships:					
2024 Euro Notes	27	38	N/A	—	—
2021 Euro Notes & 2026 Euro Notes	43	72	N/A	—	—
Total	\$ 54	\$ 132		\$ —	\$ (7)

(1) Interest rate swaps were entered into as pre-issuance hedges for the Company's bond offerings.

The ineffective portion of the above noted cash flow hedges and net investment hedges was not material for the years ended December 31, 2022 and 2021.

At December 31, 2022, based on current market rates, the Company does not expect any derivative losses (net of tax), included in AOCI, to be reclassified into earnings within the next 12 months.

NOTE 17. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The following tables present changes in the accumulated balances for each component of other comprehensive income (loss), including current period other comprehensive income (loss) and reclassifications out of accumulated other comprehensive income (loss):

<i>(DOLLARS IN MILLIONS)</i>	Foreign Currency Translation Adjustments	(Losses) Gains on Derivatives Qualifying as Hedges	Pension and Postretirement Liability Adjustment	Total
Accumulated other comprehensive (loss) income, net of tax, as of December 31, 2021	\$ (1,133)	\$ 1	\$ (291)	\$ (1,423)
OCI before reclassifications	(904)	—	148	(756)
Amounts reclassified from AOCI	—	—	10	10
Net current period other comprehensive income (loss)	(904)	—	158	(746)
Accumulated other comprehensive (loss) income, net of tax, as of December 31, 2022	\$ (2,037)	\$ 1	\$ (133)	\$ (2,169)

<i>(DOLLARS IN MILLIONS)</i>	Foreign Currency Translation Adjustments	(Losses) Gains on Derivatives Qualifying as Hedges	Pension and Postretirement Liability Adjustment	Total
Accumulated other comprehensive (loss) income, net of tax, as of December 31, 2020	\$ (285)	\$ (7)	\$ (406)	\$ (698)
OCI before reclassifications	(848)	1	97	(750)
Amounts reclassified from AOCI	—	7	18	25
Net current period other comprehensive income (loss)	(848)	8	115	(725)
Accumulated other comprehensive (loss) income, net of tax, as of December 31, 2021	\$ (1,133)	\$ 1	\$ (291)	\$ (1,423)

<i>(DOLLARS IN MILLIONS)</i>	Foreign Currency Translation Adjustments	(Losses) Gains on Derivatives Qualifying as Hedges	Pension and Postretirement Liability Adjustment	Total
Accumulated other comprehensive (loss) income, net of tax, as of December 31, 2019	\$ (373)	\$ 2	\$ (346)	\$ (717)
OCI before reclassifications	88	(5)	(74)	9
Amounts reclassified from AOCI	—	(4)	14	10
Net current period other comprehensive income (loss)	88	(9)	(60)	19
Accumulated other comprehensive (loss) income, net of tax, as of December 31, 2020	\$ (285)	\$ (7)	\$ (406)	\$ (698)

The following table provides details about reclassifications out of Accumulated other comprehensive loss to the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income:

<i>(DOLLARS IN MILLIONS)</i>	Year Ended December 31,			Affected Line Item in the Consolidated Statements of (Loss) Income and Comprehensive (Loss) Income
	2022	2021	2020	
(Losses) gains on derivatives qualifying as hedges				
Foreign currency contracts	\$ —	\$ (7)	\$ 6	Cost of goods sold
Interest rate swaps	—	(1)	(1)	Interest expense
Tax	—	1	(1)	Provision for income taxes
Total	\$ —	\$ (7)	\$ 4	Total, net of income taxes
(Losses) gains on pension and postretirement liability adjustments				
Prior service cost	\$ 7	\$ 7	\$ 7	(1)
Actuarial losses	(21)	(38)	(30)	(1)
Other items	—	17	—	(2)
Tax	4	(4)	9	Provision for income taxes
Total	\$ (10)	\$ (18)	\$ (14)	Total, net of income taxes

- (1) The amortization of prior service cost and actuarial loss is included in the computation of net periodic benefit cost. Refer to Note 15 to the Consolidated Financial Statements for additional information regarding net periodic benefit cost.
- (2) Represents certain amounts of pension income that were corrected in 2021.

NOTE 18. CONCENTRATIONS OF CREDIT RISK

The Company does not have significant concentrations of risk in financial instruments. Temporary investments are made in a well-diversified portfolio of high-quality, liquid obligations of government, corporate and financial institutions. There are also limited concentrations of credit risk with respect to trade receivables because the Company has a large number of customers who are spread across many industries and geographic regions. The Company's larger customers are each spread across many sub-categories of its segments and geographical regions. The Company had no customer that accounted for more than 10% of its consolidated net sales for the years ended 2022, 2021 and 2020.

NOTE 19. COMMITMENTS AND CONTINGENCIES

Guarantees and Letters of Credit

The Company has various bank guarantees, letters of credit and surety bonds which are available for use to support its ongoing business operations, satisfy governmental requirements associated with pending litigation in various jurisdictions and the payment of customs duties.

At December 31, 2022, the Company had total bank guarantees, commercial guarantees, standby letters of credit and surety bonds of approximately \$434 million with various financial institutions. Included in the above aggregate amount was a total of approximately \$14 million for other assessments in Brazil for various income tax and indirect tax disputes related to fiscal years 1998-2011. There was a total of approximately \$116 million outstanding under the bank guarantees, standby letters of credit and commercial guarantees as of December 31, 2022.

In order to challenge the assessments in these cases in Brazil, the Company has been required to, and has separately pledged assets, principally property, plant and equipment, to cover assessments in the amount of approximately \$8 million as of December 31, 2022.

Lines of Credit

The Company has various lines of credit which are available to support its ongoing business operations. As of December 31, 2022, the Company had available lines of credit of approximately \$1.859 billion with various financial institutions, in addition to the \$902 million of capacity under the Credit Facility. There were total draw downs of approximately \$297 million pursuant to these lines of credit as of December 31, 2022, including approximately \$187 million related to the issuance of commercial paper and \$100 million related to borrowings under the Amended Revolving Credit Facility. Refer to Note 9 for additional information.

Litigation

The Company assesses contingencies related to litigation and/or other matters to determine the degree of probability and range of possible loss. A loss contingency is accrued in the Company's Consolidated Financial Statements if it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Because litigation is inherently unpredictable and unfavorable resolutions could occur, assessing contingencies is highly sensitive and requires judgments about future events. On at least a quarterly basis, the Company reviews contingencies related to litigation to determine the adequacy of accruals. The amount of ultimate loss may differ from these estimates and further events may require the Company to increase or decrease the amounts it has accrued on any matter.

Periodically, the Company assesses its insurance coverage for all known claims, where applicable, taking into account aggregate coverage by occurrence, limits of coverage, self-insured retentions and deductibles, historical claims experience and claims experience with its insurance carriers. The liabilities are recorded at management's best estimate of the probable outcome of the lawsuits and claims, taking into consideration the facts and circumstances of the individual matters as well as past experience on similar matters. At each balance sheet date, the key issues that management assesses are whether it is probable that a loss as to asserted or unasserted claims has been incurred and if so, whether the amount of loss can be reasonably estimated. The Company records the expected liability with respect to claims in Other liabilities and expected recoveries from its insurance carriers in Other assets. The Company recognizes a receivable when it believes that realization of the insurance receivable is probable under the terms of the insurance policies and its payment experience to date.

Litigation Matters

On August 12, 2019, Marc Jansen filed a putative securities class action against IFF, its then Chairman and CEO, and its then-CFO, in the United States District Court for the Southern District of New York. The lawsuit was filed after IFF disclosed that preliminary results of investigations indicated that Frutarom businesses operating principally in Russia and Ukraine had made improper payments to representatives of customers. On March 16, 2020, an amended complaint was filed, which added Frutarom and certain former officers of Frutarom as defendants. The amended complaint alleges, among other things, that defendants made materially false and misleading statements or omissions concerning IFF's acquisition of Frutarom, the integration of the two companies, and the companies' financial reporting and results. The amended complaint asserts claims under Section 10(b) of the Securities Exchange Act of 1934 and SEC Rule 10b-5, and under the Israeli Securities Act-1968, against all defendants, and under Section 20(a) of the Securities Exchange Act of 1934 against the individual defendants, on behalf of a putative class of persons and entities who purchased or otherwise acquired IFF securities on the New York Stock Exchange between May 7, 2018 and August 12, 2019 and persons and entities who purchased or otherwise acquired IFF securities on the Tel Aviv Stock Exchange between October 9, 2018 and August 12, 2019. The amended complaint seeks an award of unspecified compensatory damages, costs, and expenses. IFF, its officers, and Frutarom filed a motion to dismiss the case on June 26, 2020, which was granted on March 30, 2021. On April 28, 2021, lead plaintiffs filed a notice of appeal to the United States Court of Appeals for the Second Circuit. Lead plaintiffs are pursuing the appeal only against Frutarom and certain former officers of Frutarom. The parties have submitted their briefs to the Court of Appeals. The Second Circuit held oral argument on February 10, 2022. On September 30, 2022, the Second Circuit affirmed the dismissal of Plaintiffs' claims. On October 14, 2022, Plaintiffs filed a Petition for Rehearing *En Banc*, which the Second Circuit denied on January 4, 2023.

Two motions to approve securities class actions were filed in the Tel Aviv District Court, Israel, in August 2019, similarly alleging, among other things, false and misleading statements largely in connection with IFF's acquisition of Frutarom and the above-mentioned improper payments. One motion ("Borg") asserts claims under the U.S. federal securities laws against IFF, its former Chairman and CEO, and its former CFO. On November 8, 2020, IFF and its officers filed their response to the Borg motion. On April 20, 2021, Mr. Borg filed a motion to stay the proceeding pending an appellate decision in the U.S. proceeding. On June 15, 2021, August 11, 2021, November 9, 2021, January 9, 2022, April 7, 2022 and July 10, 2022, the U.S. lead plaintiffs filed update notices with the Israeli court regarding the appeal in the U.S. proceeding. The other motion ("Oman") (following an initial amendment) asserted claims under the Israeli Securities Act-1968 against IFF, its former Chairman and CEO, and its former CFO, and against Frutarom and certain former Frutarom officers and directors, as well as claims under the Israeli Companies Act-1999 against certain former Frutarom officers and directors. On February 17, 2021, the court granted a motion by the Oman plaintiff to remove IFF and its officers from the motion and to add factual allegations from the US amended complaint. The amended Oman motion was filed on July 4, 2021. On August 29, 2021, the former Frutarom officers and certain former Frutarom directors filed a motion to dismiss the case. On September 30, 2021, Frutarom notified the court that it joins the legal arguments made in the motion to dismiss. On February 22, 2022, the court denied the motion to dismiss. On July 14, 2022, the court approved the parties' motion to mediate the dispute, which postpones all case deadlines until after the mediation. Also stayed is a request to appeal the court's denial of the motion to dismiss filed by the former Frutarom officers and certain former Frutarom directors. The parties held the first of multiple mediation meetings on September 13, 2022 and November 22, 2022.

On October 29, 2019, IFF and Frutarom filed a claim in the Tel Aviv District Court, Israel, against Ori Yehudai, the former President and CEO of Frutarom, and against certain former directors of Frutarom, challenging the bonus of US \$20 million granted to Yehudai in 2018. IFF and Frutarom allege, among other things, that Yehudai was not entitled to receive the bonus because he breached his fiduciary duty by, among other things, knowing of the above-mentioned improper payments and failing to prevent them from being made. The parties agreed, pursuant to the court's recommendation, to attempt to resolve the dispute through mediation, and a court decision is pending with regard to the order in which this claim and the class action described below will be heard.

On March 11, 2020, an IFF shareholder filed a motion to approve a class action in Israel against, among others, Frutarom, Yehudai, and Frutarom's former board of directors, alleging that former minority shareholders of Frutarom were harmed as a result of the US \$20 million bonus paid to Yehudai. The parties to this motion agreed to attempt to resolve the dispute through mediation to take place regarding the aforesaid claim against Yehudai. On July 27, 2021, counsel to the movant in the class action filed a notice with the court that the mediation process ended without an agreement. On August 26, 2021, a motion to dismiss the class action application was filed by Yehudai and certain former directors of Frutarom. On September 9, 2021, an additional motion to dismiss was filed by other former directors of Frutarom together with ICC Industries, Inc. and its affiliates. On December 9, 2021, the court denied the motions to dismiss. Responses to the class action motion were filed in May 2022, and applicant's response was filed in December 2022.

Investigation

On June 3, 2020, the Israel Police's National Fraud Investigation Unit and the Israeli Securities Authority commenced an investigation into Frutarom and certain of its former executives, based on suspected bribery of foreign officials, money laundering, and violations of the Israeli Securities Act-1968. As part of the investigation, the National Fraud Investigation Unit and the Israeli Securities Authority have provided IFF and Frutarom with various orders, mainly requesting that IFF and Frutarom provide certain documents and materials. In addition, a seizure of assets was imposed on Frutarom and certain of its affiliates. IFF has been working to ensure compliance with such orders, all in accordance with, and subject to, Israeli law. On August 25, 2021, the Israeli Police informed Frutarom that they have decided to remove the temporary criminal seizure of assets order from the real estate assets of Frutarom and its related companies, which was done in parallel with the transfer of the case to the District Attorney's Office in Israel.

China Facilities

Hangzhou Ingredients Plant

As previously disclosed, in 2014 the Company agreed to relocate an ingredients facility in Hangzhou, China to Jiande, China. In connection with such relocation, the Company entered into a land swap and relocation agreement with the local authority pursuant to which the Company agreed to transfer ownership of the land underlying the facility in exchange for various elements of compensation, including cash and land use rights for the new facility. The Company initially determined that the gain, if any, would be recognized upon final transfer of ownership. During the fourth quarter of 2019, the Company completed the final environmental cleanup activities and transferred ownership of the land to the local authority. The amount of the gain ultimately recognized in the fourth quarter of 2019 was \$4 million. The amount was recorded as a component of Other income, net.

The net book value of the plant in Jiande, China was approximately \$59 million as of December 31, 2022.

Guangzhou Taste Plant

During the fourth quarter of 2016, the Company was notified that certain governmental authorities have begun to evaluate a change in the zoning of the Guangzhou Taste plant. The zoning, if changed, would prevent the Company from continuing to manufacture product at the existing plant. The ultimate outcome of any change that the governmental authorities may propose, the timing of such a change, and the nature of any compensation arrangements that might be provided to the Company are uncertain. To address the governmental authorities' requirements, the Company has been transferring certain production capabilities from the Guangzhou Taste plant to a newly built facility in Zhangjiagang.

The net book value of the Guangzhou and Zhangjiagang Taste plants was approximately \$51 million and \$37 million, respectively, as of December 31, 2022.

Guangzhou Scent Plant

During the second quarter of 2019, the Company was notified that certain governmental authorities had changed the zoning where the Guangzhou Scent plant is located. The zoning change did not affect the current operations but prevents expansions or other increases in the operating capacity of the plant. The Company believes that it is possible that the zoning may be enforced in the future such that it would not be able to continue manufacturing at the existing site. The ultimate outcome of any change that the governmental authorities may propose, the timing of such a change, and the nature of any compensation arrangements that might be provided to the Company are uncertain.

The net book value of the Guangzhou Scent plant was approximately \$7 million as of December 31, 2022.

Zhejiang Ingredients Plant

In the fourth quarter of 2017, the Company concluded discussions with the government regarding the relocation of its Fragrance Ingredients plant in Zhejiang and, based on the agreements reached, expects to receive total compensation payments up to approximately \$50 million. The relocation compensation will be paid to the Company over the period of the relocation. The Company received payments totaling \$30 million through the end of 2019. In the third quarter of 2020, the Company received a payment of approximately \$13 million. A final payment is expected to be received in March 2023 upon final delivery of the land to the government.

Production at the facility ceased during 2019. In the second quarter of 2020, the Company transferred ownership of the site to the government. The land remediation activities have been completed in November 2022, however the Company is still in process of completing the final land restoration activities in order to restore the land to its original height, per the government's request. This process is expected to be completed in February 2023 and final delivery of the land to the government is expected to be completed in March 2023.

During the second quarter of 2020, the remaining net book value of the plant was written off. Products previously manufactured at the Zhejiang Ingredients plant are now being produced at the Company's Ingredients plant in Jiande.

Total China Operations

The total net book value of all plants in China was approximately \$243 million as of December 31, 2022.

If the Company is required to close a plant, or operate one at significantly reduced production levels on a permanent basis, the Company may be required to record charges that could have a material impact on its consolidated financial results of operations, financial position and cash flows in future periods.

Environmental Proceedings

The Company is reporting the following environmental matter in compliance with SEC requirements to disclose environmental proceedings where a governmental authority is a party and that involve potential monetary sanctions of \$300,000 or greater. On May 27, 2022, the Solae, LLC Memphis site ("Solae") was served an Administrative Order and Assessment (the "Order") by the City of Memphis related to alleged wastewater discharge violations. Solae submitted an appeal of the Order on June 24, 2022. Discussions with the City regarding potential resolution of the violations and penalties related to said violations are ongoing. Additionally, the Solae facility has undertaken capital project efforts, some of which began prior to the issuance of the Order, that are anticipated to address, on a schedule consistent with the Order, deadlines for attaining compliance with current wastewater permit requirements. This matter is not expected to have a material adverse effect on the Company's financial position, cash flows or results of operations.

Other Contingencies

The Company has contingencies involving third parties (such as labor, contract, technology or product-related claims or litigation) as well as government-related items in various jurisdictions in which it operates pertaining to such items as value-added taxes, other indirect taxes, customs and duties and sales and use taxes. It is possible that cash flows or results of operations, in any period, could be materially affected by the unfavorable resolution of one or more of these contingencies.

The most significant government-related contingencies exist in Brazil. With regard to the Brazilian matters, the Company believes it has valid defenses for the underlying positions under dispute; however, in order to pursue these defenses, the Company is required to, and has provided, bank guarantees and pledged assets in the aggregate amount of approximately \$22 million. The Brazilian matters take an extended period of time to proceed through the judicial process and there are a limited number of rulings to date.

Brazil Tax Credits

In 2017 the Brazilian Supreme Court ("BSC") ruled that Brazilian tax authorities should not include a value added tax known as "ICMS" in the calculation of certain indirect taxes ("PIS/COFINS"). By removing the ICMS from the calculation of the indirect tax base, the Court effectively eliminated a "tax on tax". The Brazilian tax authorities filed an appeal seeking clarification of certain matters, including the amount of ICMS to which taxpayers would be entitled in order to reduce their indirect tax base (i.e. the gross rate or the net rate).

In light of the BSC's decision, in November 2017, the Company filed suit consistent with the BSC decision to require that ICMS be excluded from the PIS/COFINS calculation and received a favorable preliminary decision that was confirmed by the BSC in September 2018. This preliminary ruling granted the Company the right to prospectively exclude ICMS amounts from the PIS/COFINS calculation, but left open the issue of whether the Company could recover the gross or net amount of ICMS amounts paid on PIS/COFINS for the period from November 2011 to December 2018.

In January 2020, the Company was informed of a favorable ruling from the Brazilian tax authorities confirming that the Company was entitled to recover the overpayments of certain indirect taxes (known as PIS/COFINS) for the period from November 2011 to December 2018, plus interest on the amount of the overpayments. The overpayments arose from the inclusion of a value added tax known as ICMS in the calculation of the PIS/COFINS tax. The ruling did not, however, settle the question of whether the Company is eligible to recover overpayments based on the gross or the net amount of ICMS amounts paid on PIS/COFINS. The Company calculated the amount of overpayments using the gross method which yields a higher amount than the application of the net method. A final ruling on the gross versus net amount issue was made by the BSC who affirmed the use of the gross calculation with respect to claims submitted prior to March 2017. Although the Company had not submitted a claim until after March 2017, the Company believes that the Supreme Court, whilst confirming the use of the gross method of calculation, does not override the January 2020 ruling by the Brazilian tax authorities with respect to the timeframe for the calculation.

In addition to the \$8 million recognized in the fourth quarter of 2019, during the first quarter of 2020 the Company recognized \$4 million as an additional recovery on the existing claim. During 2020, the Company also recognized \$3 million related to a claim from another of its subsidiaries in Brazil. The income was recognized as a reduction in Selling and Administrative expenses.

Avicel® PH NF (Pharma Solutions)

The Company has determined that certain grades of microcrystalline cellulose (Avicel® PH 101, 102, and 200 NF and Avicel® RC-591 NF) were found to be out-of-specification. The Company does not expect the OOS conductivity issue to affect the functionality of Avicel® NF grades or to pose a human health hazard. Corrective actions have been implemented to improve operational and laboratory conditions. Based on the information available, as of December 31, 2022, payments associated with the issue were approximately \$34 million, and the Company has a current accrual of approximately \$19 million. The total amount of exposure may increase if additional customers present claims or other exposures are identified.

Other

The Company determines estimates of reasonably possible losses or ranges of reasonably possible losses in excess of related accrued liabilities, if any, when it has determined that either a loss is reasonably possible or a loss in excess of accrued amounts is reasonably possible and the amount of losses or range of losses is determinable. For all third party contingencies (including labor, contract, technology, tax, product-related claims and business litigation), the Company currently estimates that the aggregate range of reasonably possible losses in excess of any accrued liabilities is \$0 to approximately \$46 million. The estimates included in this amount are based on the Company's analysis of currently available information and, as new information is obtained, these estimates may change. Due to the inherent subjectivity of the assessments and the unpredictability of outcomes of legal proceedings, any amounts accrued or included in this aggregate amount may not represent the ultimate loss to the Company from the matters in question. Thus, the Company's exposure and ultimate losses may be higher or lower, and possibly significantly so, than the amounts accrued or the range disclosed above.

NOTE 20. REDEEMABLE NON-CONTROLLING INTERESTS

Through certain subsidiaries of the Company's Frutarom acquisition, there are certain non-controlling interests that carry redemption features. The non-controlling interest holders have the right, over a stipulated period of time, to sell their respective interests to Frutarom, and Frutarom has the option to purchase these interests (subject to the same timing). In most cases, these options carry similar price and conditions of exercise, and will be settled on a pre-agreed formula based on a multiple of the average EBITDA of consecutive quarters to be achieved during the period ending prior to the exercise date.

The following table sets forth the details of the Company's redeemable non-controlling interests:

<i>(DOLLARS IN MILLIONS)</i>	Redeemable Non-controlling Interests
Balance at December 31, 2019	\$ 99
Impact of foreign exchange translation	13
Share of profit or loss attributable to redeemable non-controlling interests	3
Redemption value adjustment for the current period	(2)
Measurement period adjustments	(1)
Dividends paid	(2)
Exercises of redeemable non-controlling interests	(12)
Balance at December 31, 2020	\$ 98
Impact of foreign exchange translation	1
Share of profit or loss attributable to redeemable non-controlling interests	6
Redemption value adjustment for the current period	2
Dividends paid	(2)
Balance at December 31, 2021	\$ 105
Impact of foreign exchange translation	(6)
Share of profit or loss attributable to redeemable non-controlling interests	4
Redemption value adjustment for the current period	5
Exercises of redeemable non-controlling interests	(49)
Balance at December 31, 2022	\$ 59

NOTE 21. ASSETS HELD FOR SALE

During the fourth quarter of 2022, the Company announced it had entered into an agreement to sell a portion of its Savory Solutions business, which is part of the Nourish segment. In addition, in the first quarter of 2023, the Company announced it had entered into an agreement to sell its Flavor Specialty Ingredients business within the Scent segment. Both transactions are subject to customary closing conditions and are expected to close in the second quarter and third quarter of 2023, respectively.

The sales do not constitute a strategic shift of the Company's operations and do not, and will not, have major effects on the Company's operations and financial results; therefore, the transactions do not meet the discontinued operations criteria.

It was determined that the assets and liabilities of these businesses met the criteria to be presented as "held for sale." As a result, as of December 31, 2022, such assets and liabilities were classified as held for sale and are reported on the Consolidated Balance Sheets. The Company expects that the sale proceeds less costs to sell will exceed the preliminary estimate of the carrying value of the net assets for both businesses. The carrying value is subject to change based on developments leading up to the closing date.

Included in the Company's Consolidated Balance Sheets as of December 31, 2022 are the following carrying amounts of the assets and liabilities held for sale:

<i>(DOLLARS IN MILLIONS)</i>	December 31, 2022	
Assets		
Cash and cash equivalents	\$	52
Trade receivables, net		85
Inventories		157
Property, plant and equipment, net		92
Goodwill		348
Other intangible assets, net		428
Operating lease right-of-use assets		13
Other assets		25
Total assets held-for-sale	\$	1,200
Liabilities		
Accounts payable	\$	56
Deferred tax liability ⁽¹⁾		92
Other liabilities		64
Total liabilities held-for-sale	\$	212

(1) The Company is currently analyzing the tax impact of the sale transaction and has included preliminary numbers for the deferred tax liability, which are subject to further updates.

Microbial Control

During the third quarter of 2021, the Company announced it had entered into an agreement to sell its Microbial Control business unit, which is a part of the Health & Biosciences segment. The Company acquired the Microbial Control business unit as part of the Merger with N&B. See Note 4 for additional information.

Included in the Company's Consolidated Balance Sheets as of December 31, 2021 are the following carrying amounts of the assets and liabilities held for sale:

<i>(DOLLARS IN MILLIONS)</i>	December 31, 2021	
Assets		
Trade receivables, net	\$	63
Inventories		125
Property, plant and equipment, net		30
Goodwill		536
Other intangible assets, net		349
Operating lease right-of-use assets		5
Other assets		14
Total assets held-for-sale	\$	<u>1,122</u>
Liabilities		
Accounts payable	\$	69
Deferred tax liability		24
Other liabilities		8
Total liabilities held-for-sale	\$	<u>101</u>

(a)(3) EXHIBITS

**Exhibit
Number Description**

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- 2.1 [Agreement and Plan of Merger, dated May 7, 2018, by and among the Registrant, Frutarom Industries Ltd. and Icon Newco Ltd., incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on May 9, 2018.](#)
 - 2.2 [Amendment No. 1 to Agreement and Plan of Merger, dated August 25, 2018, by and among International Flavors & Fragrances, Inc., Frutarom Industries Ltd. and Icon Newco Ltd. incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on August 27, 2018.](#)
 - 2.3 [Agreement and Plan of Merger, dated December 15, 2019, by and among DuPont de Nemours Inc., Nutrition & Biosciences, Inc., International Flavors & Fragrances Inc. and Neptune Merger Sub I Inc., incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on December 18, 2019.](#)
 - 2.4 [Separation and Distribution Agreement, dated as of December 15, 2019, by and among DuPont de Nemours Inc., Nutrition & Biosciences, Inc. and International Flavors & Fragrances Inc., incorporated by reference to Exhibit 2.2 to the Registrant's Current Report on Form 8-K filed on December 18, 2019.](#)
 - 2.4(i) [Amendment No. 1 to the Separation and Distribution Agreement, dated January 22, 2021, by and among DuPont de Nemours, Inc., Nutrition & Biosciences, Inc., International Flavors & Fragrances Inc. and Neptune Merger Sub II LLC, incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on January 25, 2021.](#)
 - 2.4(ii) [Amendment No. 2 to the Separation and Distribution Agreement, dated February 1, 2021, by and among DuPont de Nemours, Inc., Nutrition & Biosciences, Inc., International Flavors & Fragrances Inc. and Neptune Merger Sub II LLC, incorporated by reference to Exhibit 2.4 to the Registrant's Current Report on Form 8-K filed on February 3, 2021.](#)
 - 3.1 [Restated Certificate of Incorporation of the Registrant, incorporated by reference to Exhibit 10\(g\) to the Registrant's Quarterly Report on Form 10-Q filed on August 12, 2002.](#)
 - 3.2 [Bylaws of International Flavors & Fragrances Inc., effective as of December 13, 2022, incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on December 19, 2022.](#)
 - 4.1 [Indenture, dated as of April 4, 2013, between the Registrant and U.S. Bank National Association, as Trustee \(including the form of Notes\), incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on April 4, 2013.](#)
 - 4.2 [Indenture, dated as of March 2, 2016, between the Registrant and U.S. Bank National Association, as Trustee \(including the form of Debt Security\), incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-3 \(Registration No. 333-209889\) filed on March 2, 2016.](#)
 - 4.3 [First Supplemental Indenture, dated as of March 14, 2016, between the Registrant and U.S. Bank National Association, as Trustee \(including the form of Notes\), incorporated by reference to Exhibit 4.7 to the Registrant's Current Report on Form 8-K filed on March 14, 2016.](#)
 - 4.4 [Second Supplemental Indenture, dated as of May 18, 2017, between the Registrant and U.S. Bank National Association, as Trustee \(including the form of Notes\), incorporated by reference to Exhibit 4.7 to the Registrant's Current Report on Form 8-K filed on May 18, 2017.](#)
 - 4.5 [Third Supplemental Indenture, dated as of September 17, 2018, between International Flavors & Fragrances Inc. and U.S. Bank National Association, as trustee, incorporated by reference to Exhibit 4.5 to the Registrant's Current Report on Form 8-K filed on September 17, 2018.](#)
 - 4.6 [Form of Amortizing Note, incorporated by reference to Exhibit 4.5 to the Registrant's Current Report on Form 8-K filed on September 17, 2018.](#)
 - 4.7 [Purchase Contract Agreement, dated September 17, 2018, between International Flavors & Fragrances Inc. and U.S. Bank National Association, as purchase contract agent, as attorney-in-fact for holders of the purchase contracts referred to therein and as trustee under the indenture referred to therein, incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on September 17, 2018.](#)
 - 4.8 [Form of Unit, incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on September 17, 2018.](#)
 - 4.9 [Form of Purchase Contract, incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on September 17, 2018.](#)
 - 4.10 [Fourth Supplemental Indenture, dated as of September 25, 2018, between International Flavors & Fragrances Inc. and U.S. Bank National Association, as trustee, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 25, 2018.](#)
 - 4.11 [Form of Global Note for the 2021 Notes, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 25, 2018.](#)
 - 4.12 [Form of Global Note for the 2026 Notes, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 25, 2018.](#)

**Exhibit
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- 4.13 [Fifth Supplemental Indenture, dated as of September 26, 2018, between International Flavors & Fragrances Inc. and U.S. Bank National Association, as trustee, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 26, 2018.](#)
 - 4.14 [Form of Global Note for the 2020 Notes, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 26, 2018.](#)
 - 4.15 [Form of Global Note for the 2028 Notes, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 26, 2018.](#)
 - 4.16 [Form of Global Notes for the 2048 Notes, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on September 26, 2018.](#)
 - 4.17 [Indenture, dated as of September 16, 2020, between the N&B and U.S. Bank National Association, as Trustee \(including the form of Notes\), incorporated by reference to Exhibit 99.16 to the Registrant's Registration Statement on Form S-4 \(Registration No. 333-238072\) filed on October 5, 2020.](#)
 - 4.18 [First Supplemental Indenture, dated as of February 1, 2021, among Nutrition & Biosciences, Inc., International Flavors & Fragrances Inc. and U.S. Bank National Association, as Trustee, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on February 4, 2021.](#)
 - 4.19 [Second Supplemental Indenture, dated as of March 4, 2021, among Nutrition & Biosciences, Inc., International Flavors & Fragrances Inc. and U.S. Bank National Association, as trustee, incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on March 4, 2021.](#)
 - 4.20 [Icon Debt Assumption Supplement, dated as of March 4, 2021, among Neptune Merger Sub II LLC \(as successor by merger to Nutrition & Biosciences, Inc.\) and International Flavors & Fragrances Inc., and as acknowledged by Morgan Stanley Senior Funding, Inc., as administrative agent, incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed on March 4, 2021.](#)
 - 4.21 [Description of Securities, incorporated by reference to Exhibit 4.17 to the Registrant's Annual Report on Form 10-K filed on March 3, 2020.](#)

 - *10.1 [Letter Agreement, dated as of May 26, 2014, between the Registrant and Andreas Fibig, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 28, 2014.](#)

 - *10.2 [Letter Agreement between International Flavors & Fragrances Inc. and Franklin K. Clyburn, Jr., effective January 18, 2022, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on January 20, 2022.](#)

 - *10.3 [Supplemental Retirement Plan, incorporated by reference to Exhibit 10.5 to the Registrant's Annual Report on Form 10-K filed on February 27, 2008.](#)

 - *10.4 [2021 Stock Award and Incentive Plan, incorporated by reference to Annex 1 to the Registrant's Proxy Statement filed with the Commission on March 23, 2021.](#)

 - *10.5 [Form of Restricted Stock Units Agreement – Non-Employee Director under the 2021 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.5 to the Registrant's Annual Report on Form 10-K, filed on February 28, 2022.](#)

 - *10.6 [Form of Restricted Stock Units Award Agreement under the 2021 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.6 to the Registrant's Annual Report on Form 10-K, filed on February 28, 2022.](#)

 - *10.7 [Form of Equity Choice Program Award Agreement under the 2021 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.7 to the Registrant's Annual Report on Form 10-K, filed on February 28, 2022.](#)

 - *10.8 [Form of Performance-Based Restricted Stock Units Award Agreement under the 2021 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.8 to the Registrant's Annual Report on Form 10-K, filed on February 28, 2022.](#)

 - *10.9 [2015 Stock Award and Incentive Plan, as amended and restated February 7, 2017, incorporated by reference to Exhibit 10.13 to the Registrant's Annual Report on Form 10-K filed on February 28, 2017.](#)

 - *10.10 [Form of Annual Incentive Plan Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed on May 12, 2015.](#)

 - *10.11 [Form of Long-Term Incentive Plan Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed on May 12, 2015.](#)

 - *10.12 [Form of Equity Choice Program Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed on May 12, 2015.](#)

**Exhibit
Number Description**

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- *10.13 [Form of Restricted Stock Units Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed on May 12, 2015.](#)
 - *10.14 [Form of Non-Employee Director Restricted Stock Units Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q filed on May 12, 2015.](#)
 - *10.15 [Form of Equity Choice Program Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed on November 9, 2015.](#)
 - *10.16 [Form of Long-Term Incentive Plan Award Agreement under the 2015 Stock Award and Incentive Plan, incorporated by reference to Exhibit 10.25 to the Registrant's Annual Report on Form 10-K filed on March 1, 2016.](#)
 - *10.17 [Amended and Restated Executive Severance Policy, as amended through and including November 1, 2017, incorporated by reference to Exhibit 10.17 to the Registrant's Annual Report on Form 10-K filed on February 27, 2018 \(the "Executive Severance Policy"\).](#)
 - *10.18 [Amendment to the Executive Severance Policy dated November 3, 2020, incorporated by reference to Exhibit 10.18 to the Registrant's Annual Report on Form 10-K filed on February 22, 2021.](#)
 - *10.19 [Form of Director/Officer Indemnification Agreement, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on July 28, 2008.](#)
 - *10.20 [Form of Executive Death Benefit Program - Plan Agreement, incorporated by reference to Exhibit 10.27 to the Registrant's Annual Report on Form 10-K filed on February 28, 2012.](#)
 - *10.21(i) [Deferred Compensation Plan, as amended and restated December 12, 2011, incorporated by reference to Exhibit 10.28 to the Registrant's Annual Report on Form 10-K filed on February 28, 2012 \(the "Deferred Compensation Plan"\).](#)
 - *10.21(ii) [First Amendment to the Deferred Compensation Plan dated as of December 31, 2020, incorporated by reference to Exhibit 10.22 to the Registrant's Annual Report on Form 10-K filed on February 22, 2021.](#)
 - *10.22 [Deferred Compensation Plan \(the "2023 Deferred Compensation Plan"\), incorporated by reference to Exhibit 4.3 to the Registrant's Registration Statement on Form S-8 filed on November 29, 2022.](#)
 - 10.23(i) [Credit Agreement, dated as of November 9, 2011, amended and restated as of December 2, 2016, among the Registrant, International Flavors & Fragrances \(Luxembourg\) S.à.r.l., International Flavors & Fragrances \(Nederland\) Holding B.V., International Flavors & Fragrances I.F.F. \(Nederland\) B.V. and International Flavors & Fragrances \(Greater Asia\) PTE. Ltd., as borrowers, the banks, financial institutions and other institutional lenders party thereto, and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.28 to the Registrant's Current Report on Form 8-K filed on December 5, 2016.](#)
 - 10.23(ii) [Amendment No. 1 to Credit Agreement, dated as of May 21, 2018, among the Registrant, International Flavors & Fragrances \(Nederland\) Holding B.V., International Flavors & Fragrances I.F.F. \(Nederland\) B.V. and International Flavors & Fragrances \(Greater Asia\) PTE. Ltd., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 24, 2018.](#)
 - 10.23(iii) [Amendment No. 2 to Credit Agreement, dated as of June 6, 2018, among the Registrant, International Flavors & Fragrances \(Nederland\) Holding B.V., International Flavors & Fragrances I.F.F. \(Nederland\) B.V. and International Flavors & Fragrances \(Greater Asia\) PTE. Ltd., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on June 8, 2018.](#)
 - 10.23(iv) [Amendment No. 3 to Credit Agreement, dated as of July 13, 2018, among the Registrant, International Flavors & Fragrances \(Nederland\) Holding B.V., International Flavors & Fragrances I.F.F. \(Nederland\) B.V. and International Flavors & Fragrances \(Greater Asia\) PTE. Ltd., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed on August 7, 2018.](#)
 - 10.23(v) [Amendment No. 4 to Credit Agreement, dated as of January 17, 2020 among International Flavors & Fragrances Inc., International Flavors & Fragrances \(Nederland\) Holding B.V., International Flavors & Fragrances I.F.F. \(Nederland\) B.V. and International Flavors & Fragrances \(Greater Asia\) PTE. Ltd., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on January 22, 2020.](#)
 - 10.23(vi) [Second Amended and Restated Credit Agreement, dated as of August 25, 2020 among International Flavors & Fragrances Inc., International Flavors & Fragrances \(Nederland\) Holding B.V. and International Flavors & Fragrances I.F.F. \(Nederland\) B.V., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on August 28, 2020.](#)

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- 10.23(vii) [Third Amended and Restated Credit Agreement, dated as of July 28, 2021 among International Flavors & Fragrances Inc., International Flavors & Fragrances \(Nederland\) Holding B.V. and International Flavors & Fragrances I.F.F. \(Nederland\) B.V., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on 8-K filed on July 28, 2021.](#)
- 10.23(viii) [Amendment No.1 to Third Amended and Restated Credit Agreement, dated as of August 4, 2022, among the Registrant, International Flavors & Fragrances \(Nederland\) Holding B.V. and International Flavors & Fragrances I.F.F. \(Nederland\) B.V., as borrowers, the lenders signatory thereto and Citibank, N.A., as administrative agent, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on August 8, 2022.](#)
- 10.24(i) [Term Loan Credit Agreement, dated as of June 6, 2018, among the Registrant, as borrower, the lenders signatory thereto and Morgan Stanley Senior Funding, Inc. as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on June 8, 2018.](#)
- 10.24(ii) [Amendment No. 1. to Credit Agreement, dated as of July 13, 2018, among the Registrant, as borrower, the lenders signatory thereto and Morgan Stanley Senior Funding, Inc. as administrative agent, incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed on August 7, 2018.](#)
- 10.24(iii) [Amendment No. 2 to Credit Agreement, dated as of January 17, 2020 among International Flavors & Fragrances Inc., as borrower, the lenders signatory thereto and Morgan Stanley Senior Funding, Inc. as administrative agent, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report filed on Form 8-K filed on January 22, 2020.](#)
- 10.24(iv) [Amendment No. 3 to Credit Agreement, dated as of August 25, 2020 among International Flavors & Fragrances Inc., as borrower, the lenders signatory thereto and Morgan Stanley Senior Funding, Inc. as administrative agent, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on August 28, 2020.](#)
- 10.25 [Employee Matters Agreement, dated as of December 15, 2019, by and among DuPont de Nemours Inc., Nutrition & Biosciences, Inc. and International Flavors & Fragrances Inc., incorporated by reference to the Registrant's Current Report on Form 8-K filed on December 18, 2019.](#)
- 10.25(i) [Amendment to the Employee Matters Agreement, dated January 22, 2021, by and among International Flavors & Fragrances Inc., DuPont de Nemours, Inc. and Nutrition & Biosciences, Inc., incorporated by reference to the Registrant's Current Report on Form 8-K filed on January 25, 2021.](#)
- 10.26(i) [Term Loan Credit Agreement, dated as of May 15, 2020 among International Flavors & Fragrances Inc., as borrower, the lenders signatory thereto and China Construction Bank Corporation, New York Branch, as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 21, 2020.](#)
- 10.26(ii) [Amendment No. 1 to Credit Agreement, dated as of August 25, 2020, among the Company, as borrower, the lenders signatory thereto and China Construction Bank Corporation, New York Branch as administrative agent, incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed on August 28, 2020.](#)
- 10.26(iii) [Amendment No. 2 to Term Loan Credit Agreement, dated as of August 4, 2022, among International Flavors & Fragrances Inc., as borrower, the lenders signatory thereto and Morgan Stanley Senior Funding, Inc., as administrative agent, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on August 8, 2022.](#)
- 10.27 [Term Loan Credit Agreement, dated as of January 17, 2020, by and among Nutrition & Biosciences, Inc., as borrower, and Morgan Stanley Senior Funding Inc., as administrative agent, and the other lenders party thereto, incorporated by reference to Exhibit 99.14 to the Registrant's Form S-4 Registration Statement filed on October 5, 2020.](#)
- 10.27(i) [Amendment No. 1 to Credit Agreement, dated as of August 25, 2020, by and among Nutrition & Biosciences, Inc., the lenders signatory thereto and Morgan Stanley Senior Fund, Inc., as administrative agent, incorporated by reference to Exhibit 99.15 to the Registrant's Form S-4 Registration Statement filed on October 5, 2020.](#)
- 10.28 [Co-Operation Agreement, dated as of March 7, 2021, incorporated by reference to the Registrant's Current Report on Form 8-K filed on March 8, 2021.](#)
- 10.29 [Tax Matters Agreement, dated as of February 1, 2021, by and among DuPont de Nemours, Inc., Nutrition & Biosciences, Inc. and International Flavors & Fragrances Inc., incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on February 4, 2021.](#)
- 10.30 [Intellectual Property Cross-License Agreement, dated as of February 1, 2021, by and between Nutrition & Biosciences, Inc. and DuPont de Nemours, Inc., incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed on February 4, 2021.](#)

**Exhibit
Number Description**

21	List of Principal Subsidiaries.
23	Consent of PricewaterhouseCoopers LLP.
31.1	Certification of Frank Clyburn pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Glenn Richter pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certification of Frank Clyburn and Glenn Richter pursuant to 18 U.S.C. Section 1350 as adopted pursuant to the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extensions Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

* Management contract or compensatory plan or arrangement

ITEM 16. FORM 10-K SUMMARY.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

INTERNATIONAL FLAVORS & FRAGRANCES INC.

By: _____ /s/ Glenn Richter
Name: **Glenn Richter**
Title: *Executive Vice President and Chief Financial & Business Transformation Officer*

Dated: February 27, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Frank Clyburn</u> Frank Clyburn	Chief Executive Officer and Director (Principal Executive Officer)	February 27, 2023
<u>/s/ Glenn Richter</u> Glenn Richter	Executive Vice President and Chief Financial & Business Transformation Officer (Principal Financial Officer)	February 27, 2023
<u>/s/ Beril Yildiz</u> Beril Yildiz	Senior Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	February 27, 2023
<u>/s/ Dale F. Morrison</u> Dale F. Morrison	Chairman of the Board, Director	February 27, 2023
<u>/s/ Kathryn J. Boor</u> Kathryn J. Boor	Director	February 27, 2023
<u>/s/ Edward D. Breen</u> Edward D. Breen	Director	February 27, 2023
<u>/s/ Barry A. Bruno</u> Barry A. Bruno	Director	February 27, 2023
<u>/s/ Mark Costa</u> Mark Costa	Director	February 27, 2023
<u>/s/ Carol Anthony (John) Davidson</u> Carol Anthony (John) Davidson	Director	February 27, 2023
<u>/s/ Roger W. Ferguson, Jr.</u> Roger W. Ferguson, Jr.	Director	February 27, 2023
<u>/s/ John F. Ferraro</u> John F. Ferraro	Director	February 27, 2023
<u>/s/ Christina Gold</u> Christina Gold	Director	February 27, 2023
<u>/s/ Matthias Heinzl</u> Matthias Heinzl	Director	February 27, 2023
<u>/s/ Gary Hu</u> Gary Hu	Director	February 27, 2023
<u>/s/ Stephen Williamson</u> Stephen Williamson	Director	February 27, 2023
<u>/s/ Dawn C. Willoughby</u> Dawn C. Willoughby	Director	February 27, 2023

INTERNATIONAL FLAVORS & FRAGRANCES INC. AND SUBSIDIARIES
SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS AND RESERVES
(IN MILLIONS)

For the Year Ended December 31, 2022							
	Balance at beginning of period	Additions (deductions) charged to costs and expenses	Acquisitions	Accounts written off	Translation adjustments	Other	Balance at end of period
Allowance for doubtful accounts	\$ 46	\$ 19	\$ —	\$ —	\$ (12)	\$ —	\$ 53
Valuation allowance on credit and operating loss carryforwards and other net deferred tax assets	232	51	—	—	(21)	—	262
For the Year Ended December 31, 2021							
	Balance at beginning of period	Additions charged to costs and expenses	Acquisitions	Accounts written off	Translation adjustments	Other⁽¹⁾	Balance at end of period
Allowance for doubtful accounts	\$ 21	\$ 6	\$ —	\$ (1)	\$ —	\$ 20	\$ 46
Valuation allowance on credit and operating loss carryforwards and other net deferred tax assets	257	(18)	9	—	(16)	—	232
For the Year Ended December 31, 2020							
	Balance at beginning of period	Additions charged to costs and expenses	Acquisitions	Accounts written off	Translation adjustments	Other	Balance at end of period
Allowance for doubtful accounts	\$ 16	\$ 6	\$ —	\$ (1)	\$ —	\$ —	\$ 21
Valuation allowance on credit and operating loss carryforwards and other net deferred tax assets	204	35	—	—	18	—	257

(1) The amount relates to adjustment to allowances for bad debts as a result of purchase price allocation related to the Merger with N&B.

LIST OF SUBSIDIARIES OF INTERNATIONAL FLAVORS & FRAGRANCES INC.

(the "Company")

Name of Entity	Jurisdiction
International Flavors & Fragrances S.R.L.	Argentina
Danisco Argentina S.A.	Argentina
Solae Argentina S.A.	Argentina
Enzymotec Australia Pty Ltd	Australia
Taura Natural Ingredients Holdings Pty Limited	Australia
Bush Boake Allen Australia Pty Ltd	Australia
IFF Australia Holdings Pty Limited	Australia
International Flavours & Fragrances (Australia) Pty Ltd	Australia
Lucas Meyer Cosmetics Australia Pty Ltd	Australia
Southern Cross Botanicals Pty Ltd	Australia
Danisco Australia Pty Limited	Australia
KELP INDUSTRIES PTY. LTD.	Australia
Nutrition & Biosciences Australia Pty Ltd	Australia
Solae Australia Pty Limited	Australia
Frutarom GmbH	Austria
Frutarom Savory Solutions Austria GmbH	Austria
world wide Wiberg GmbH	Austria
Danisco Austria GmbH	Austria
PTI-BEL TUE	Belarus
Frutarom Belgium N.V.	Belgium
Taura Natural Ingredients NV	Belgium
TNI Investments NV	Belgium
Danisco Ingredients Belgium N.V.	Belgium
Genencor International BV	Belgium
Solae Belgium N.V.	Belgium
Bremil Industria E Comercio de Ingredientes Alimenticios Ltda ⁽¹⁾	Brazil
Bremil S/A Industria de Produtos Alimenticios ⁽²⁾	Brazil
Envoltec Industria de Embalagens Ltda ⁽³⁾	Brazil
Frutarom do Brazil Industria e Comercio Ltda.	Brazil
Sabormax Industria de Alimentos E Representacao Ltda ⁽⁴⁾	Brazil
Frutarom do Brasil GRU Indsutria e Comercio Ltda	Brazil
Bush Boake Allen Do Brasil Indústria e Comércio Ltda.	Brazil
IFF Essências e Frangrâncias Ltda.	Brazil
Danisco Brasil Ltda.	Brazil
Dupont Nutrition Brasil Ingredientes Ltda	Brazil
Nutrition & Biosciences Brasil Ingredientes Ltda.	Brazil
Protein Technologies International Do Brasil Ltda	Brazil
Solae Do Brasil Holdings Ltda	Brazil
Solae Do Brasil Indústria E Comércio De Alimentos Ltda	Brazil
Solae Investimentos Ltda	Brazil
Fragrance Resources Asia Pacific Limited	British Virgin Islands
IFF (BVI) Limited	British Virgin Islands

Name of Entity	Jurisdiction
1456111 Ontario Limited	Canada
Les Ingrédients Alimentaires BSA Inc.	Canada
Wiberg Canada Inc.	Canada
Wiberg Corporation	Canada
International Flavors & Fragrances (Canada) Ltd.	Canada
Lucas Meyer Cosmetics Canada Inc.	Canada
Danisco Canada Inc.	Canada
Frutarom Chile S.A.	Chile
Bush Boake Allen Chile S.A.	Chile
International Flavors & Fragrances I.F.F. (Chile) Limitada	Chile
Danisco Chile S.A.	Chile
Fangchen International Trading Ltd ⁽⁵⁾	China
Frutarom F&F Trading (Shanghai) Co., Ltd.	China
Frutarom Flavors (Kushan) Co., Ltd.	China
Inventive Food Technology (ZQ) Ltd.	China
Pucheng Yongfang Fragrance Technology Co., Ltd. ⁽⁶⁾	China
Tastepoint Flavors (Shanghai) Co., Ltd.	China
Fragrance Resources (Shanghai) Co., Ltd	China
IFF Bio Technology (Nanjing) Co., Ltd.	China
IFF Flavors & Fragrances (Hangzhou) Trading Co., Ltd.	China
International Flavors & Fragrances (China) Ltd.	China
International Flavors & Fragrances (Hangzhou) Co., Ltd. ⁽⁷⁾	China
International Flavors & Fragrances (Zhangjiagang) Co., Ltd.	China
International Flavors & Fragrances (Zhejiang) Co., Ltd.	China
Danisco (China) Co., Ltd.	China
Danisco (China) Holding Company Limited	China
Danisco (Zhangjiagang) Textural Ingredients Co., Ltd.	China
Danisco Biosciences (Shanghai) Co., Ltd.	China
DuPont (Shanghai) Enterprise Co., Ltd.	China
Danisco Health Foods (Beijing) Co., Ltd.	China
Danisco Shineway Luohe Food Company Limited ⁽⁸⁾	China
Danisco Shineway Luohe Soy Industry Company Limited ⁽⁹⁾	China
Genencor (China) Bio-Products Co., Ltd.	China
Solae Trading (Shanghai) Co., Ltd.	China
International Flavors and Fragrances Colombia S.A.S.	Colombia
Danisco Colombia Ltda.	Colombia
Specialty Products Balkans d.o.o.	Croatia
Alpris Holdings Ltd.	Cyprus
Vantodio Holdings Limited	Cyprus
Tastepoint CZ, s.r.o.	Czech Republic
Danisco Czech Republic, a.s.	Czech Republic
Cometra ApS	Denmark
DuPont Nutrition Biosciences ApS	Denmark
Solae Denmark ApS	Denmark
FYMSA del Caribe, S.R.L. ⁽¹⁰⁾	Dominican Republic

Name of Entity	Jurisdiction
MISR Company for Aromatic Products (S.A.E.)	Egypt
Danisco Egypt Trading LLC	Egypt
Aromco Ltd.	England
Dandy Lions Limited	England
Flavours and Essences UK Limited	England
FoodBlenders Limited	England
Frutarom – Etol (UK) Limited	England
Frutarom (UK) Ltd.	England
Frutarom UK Investments Limited	England
Hagelin Flv (UK) Ltd.	England
Redbrook (UK) Limited	England
Savoury Flavours (Holding) Limited	England
Savoury Flavours Ltd.	England
Unique Ingredients Limited	England
A. Boake, Roberts And Company (Holding), Limited	England
Bush Boake Allen Enterprises Limited	England
Bush Boake Allen Holdings (U.K.) Limited	England
Bush Boake Allen Limited	England
International Flavours & Fragrances (CIL) Limited	England
International Flavours & Fragrances (GB) Holdings Limited	England
International Flavours & Fragrances (Pension Trustees) Limited	England
International Flavours & Fragrances I.F.F. (Great Britain) Limited	England
Danisco Holdings (UK) Ltd.	England
Danisco UK Ltd.	England
DuPont Nutrition Manufacturing UK Limited	England
Solae (UK) Limited	England
Danisco Sweeteners Oy	Finland
Finnfeeds Finland Oy	Finland
Finnfeeds Oy	Finland
Genencor International Oy	Finland
Rene Laurent SAS	France
Atelier du Parfumeur IFF Grasse SAS	France
Institut Européen de Biologie Cellulaire	France
International Flavors & Fragrances France Holding I SAS	France
International Flavors & Fragrances France Holding III SAS	France
International Flavors & Fragrances IFF (France)	France
Lucas Meyer Cosmetics	France
Danisco France SAS	France
Nutrition & Biosciences (France) SAS	France
extrakt chemie Dr. Bruno Stellmach GmbH	Germany
Frutarom Germany GmbH	Germany
Frutarom Production GmbH	Germany
Frutarom Savory Solutions Germany GmbH	Germany
IFF Fragrance GmbH	Germany
International Flavors & Fragrances IFF (Deutschland) G.M.B.H.	Germany

Name of Entity	Jurisdiction
Leagel GmbH ⁽¹¹⁾	Germany
Danisco Deutschland GmbH	Germany
DDP Specialty Products Germany GmbH & Co. KG	Germany
DSP Germany N&B Real Estate GmbH & Co. KG	Germany
N&B Produktions- und Verwaltungs-GmbH	Germany
N&B Real Estate Verwaltungs-GmbH	Germany
Solae Deutschland GmbH	Germany
Danisco Nutrition & Bioscience Greece Ltd	Greece
Aroma S.A.	Guatemala
Manseg S.A.	Guatemala
Danisco Centro America S.A.	Guatemala
Danisco Guatemala S.A.	Guatemala
Frutarom (Asia Pacific) Limited	Hong Kong
Inventive Technology Ltd.	Hong Kong
Prowin International Ltd.	Hong Kong
VAYA Pharma Hong Kong Ltd	Hong Kong
International Flavors & Fragrances (Hong Kong) Limited	Hong Kong
Nutrition & Biosciences Hong Kong Limited	Hong Kong
IFF Hungary Global Korlátolt Felelősségű Társaság	Hungary
International Flavors & Fragrances I.F.F. (Hungary) Korlátolt Felelősségű Társaság	Hungary
Nutrition & Biosciences Hungary Kft.	Hungary
Thorverk Ltd / Thorungaverksmiðjan hf. / Þörungaverksmiðjan hf. ⁽¹²⁾	Iceland
Sonarome Private Limited ⁽¹³⁾	India
International Flavours & Fragrances India Private Limited ⁽¹⁴⁾	India
Danisco (India) Private Limited	India
Danisco Nutrition and Biosciences India Private Limited	India
Solae Company India Private Limited	India
P.T. Essence Indonesia	Indonesia
PT. INTERNATIONAL FLAVORS FRAGRANCES INDONESIA	Indonesia
Redbrook Blentech Limited	Ireland
Redbrook Ingredient Services Limited	Ireland
Aromatics Holdings Limited	Ireland
Irish Flavours and Fragrances Limited	Ireland
DuPont Nutrition Ireland	Ireland
DuPont Nutrition Manufacturing Ireland Limited	Ireland
Arvin Company	Isle of Man
Belden Company	Isle of Man
Frutarom (UK) Holdings Limited	Israel
Frutarom Global Ltd.	Israel
Frutarom Industries Ltd.	Israel
Frutarom Ltd.	Israel
Nutra-Lease Ltd. ⁽¹⁵⁾	Israel
BKF Vision Ltd	Israel
International Flavors & Fragrances I.F.F. (Israel) Ltd.	Israel
International Flavors and Fragrances Ingredients Ltd	Israel

Name of Entity	Jurisdiction
K - Vision Consulting and Investments Ltd	Israel
M.P. Equity Holdings Ltd	Israel
Frutarom Italy S.r.l	Italy
WIBERG Italia S.r.l.	Italy
International Flavors e Fragrances IFF (Italia) S.R.L.	Italy
Danisco Italy S.p.A.	Italy
Nutrition & Biosciences Italy S.r.l.	Italy
International Flavors & Fragrances (Japan) Ltd.	Japan
Danisco Japan Limited	Japan
Nutrition & Biosciences Japan K.K.	Japan
PTI Astana LLC	Kazakhstan
Frutarom Kenya Limited	Kenya
DuPont de Nemours Kenya Limited	Kenya
IFF (Korea) Inc.	Korea
Danisco Nutrition & Biosciences Korea Ltd.	Korea
Frutarom Finance EUR AG	Lichtenstein
International Flavors & Fragrances (Luxembourg) S.à r.l.	Luxembourg
International Flavors & Fragrances Ardenne S.à r.l.	Luxembourg
Nutrition & Bioscience (Luxembourg) S.à r.l.	Luxembourg
L'Atelier Vanille Madagascar	Madagascar
International Flavors & Fragrances (Malaysia) Sdn. Bhd.	Malaysia
Danisco Malaysia Sdn. Bhd.	Malaysia
International Flavours & Fragrances (Mauritius) Ltd	Mauritius
Genencor Mauritius Ltd	Mauritius
Frutarom Flavors Mexico S.A. de C.V.	Mexico
Proveedores de Ingeniería Alimentaria, S.A. de C.V. (“PIASA”) ⁽¹⁶⁾	Mexico
Representaciones FYMSA, S.A. de C.V (FYMSA) ⁽¹⁷⁾	Mexico
Frutarom Mexico S.A.	Mexico
Bush Boake Allen Controladora, S.A. DE C.V.	Mexico
International Flavors & Fragrances (Mexico), SA de CV	Mexico
Danisco Mexicana S.A. de C.V.	Mexico
Dupont Nutrition Mexicana S.A De C.V.	Mexico
Dupont Nutrition Mexico S.A De C.V.	Mexico
Solae De Mexico S. A. De C.V.	Mexico
PTI-MOL LLC	Moldova
ERELEM	Morocco
International Flavors & Fragrances (Myanmar) Limited	Myanmar
Frutarom Netherlands B.V.	Netherlands
Bush Boake Allen Benelux B.V.	Netherlands
International Flavors & Fragrances (Nederland) Holding B.V.	Netherlands
International Flavors & Fragrances I.F.F. (Nederland) B.V.	Netherlands
Danisco Holland B.V.	Netherlands
Danisco Zaandam BV	Netherlands
DuPont LA Holding I B.V.	Netherlands
Genencor International Holding B.V.	Netherlands

Name of Entity	Jurisdiction
Genencor International B.V.	Netherlands
IB EMEA Holding 2 B.V.	Netherlands
MC (Netherlands) B.V.	Netherlands
N&B EMEA Holding B.V.	Netherlands
N&B International Holding B.V.	Netherlands
N&B Services B.V.	Netherlands
N&H EMEA Holding 1 B.V.	Netherlands
N&H EMEA Holding 2 B.V.	Netherlands
N&H EMEA Holding B.V.	Netherlands
N&H International Holding 1 B.V.	Netherlands
New Asia Holdco B.V.	Netherlands
Nutrition & Biosciences Netherlands B.V.	Netherlands
Solae Overseas B.V.	Netherlands
SP EMEA Holding 8 B.V.	Netherlands
Taura Natural Ingredients Limited	New Zealand
International Flavours & Fragrances (NZ) Limited	New Zealand
Danisco New Zealand Limited	New Zealand
Nutrition & Biosciences New Zealand Limited	New Zealand
Frutarom Nigeria Limited	Nigeria
IFF West Africa Limited	Nigeria
Du Pont de Nemours Nigeria Limited	Nigeria
Etol Skopje DRUŠTVO ZA TRGOVIJA ETOL UVOZ-IZVOZ DOOEL	North Macedonia
Ingredients dooel Skopje	North Macedonia
DuPont Nutrition Norge AS	Norway
Nutrition & Bioscience Pakistan (Private) Ltd	Pakistan
Frutarom Perú S.A. (Montana Food activity)	Peru
Danisco Perú S.A.C	Peru
International Flavors & Fragrances (Philippines), Inc.	Philippines
DuPont Nutrition Philippines Inc.	Philippines
Amco SP Z.O.O	Poland
Tastepoint Polska Z.o.o.	Poland
International Flavors & Fragrances (Poland) Sp. z o.o.	Poland
Danisco Poland Sp. z.o.o	Poland
Chemical Process Materials and Equipment S.A.	Republic of Panama
International Aroma Group	Republic of Panama
Mark Services Holdings Inc.	Republic of Panama
Frutarom (Marketing) S.R.L.	Romania
Frutarom Etol RO SRL	Romania
ETOL-RUS, Ltd.	Russia
OOO Wiberg Rus	Russia
Platinum Absolut LLC	Russia
PTI Center LLC	Russia
LLC PTI Group of companies (short name GK PTI)	Russia
PTI-NN LLC	Russia
“Tastepoint OOO” (Tastepoint Russia Ltd)	Russia

Name of Entity	Jurisdiction
Tekhnomol Soya Products LLC	Russia
International Flavors & Fragrances I.F.F. (Rus)	Russia
ZAO Danisco (Closed Joint Stock Company “Danisco”)	Russia
Leagel S.r.l. ⁽¹⁸⁾	San Marino
Tastepoint JVE d.o.o. Novi Sad	Serbia
Enzymotec Singapore Pte Ltd	Singapore
Vaya Pharma Pte Ltd ⁽¹⁹⁾	Singapore
International Flavors & Fragrances (Greater Asia) Pte. Ltd.	Singapore
Danisco Singapore Pte. Ltd.	Singapore
ETOL SK, s.r.o.	Slovakia
Etol Proizvodnja Arom D.O.O	Slovenia
Tastepoint d.o.o.	Slovenia
VITIVA proizvodnja in storitve d.d. (Short name: VITIVA d.d.)	Slovenia
Tastepoint SA (Pty) Ltd	South Africa
Unique Flavors Proprietary Limited	South Africa
Unique Food Solutions Proprietary Limited	South Africa
International Flavors and Fragrances IFF (South Africa) (Proprietary) Limited	South Africa
Danisco South Africa (Pty) Ltd.	South Africa
DuPont Protein Technologies International Sales, LLC	South Africa
IFF Murcia Natural Ingredients, S.L.U	Spain
IFF Benicarló, S.L.	Spain
IFF Latin American Holdings (España), S.L.	Spain
International Flavors & Fragrances I.F.F. (España), S.A.	Spain
DuPont Nutrition and Biosciences Ibérica S.L.U.	Spain
IFF Lanka Private Limited	Sri Lanka
International Flavors & Fragrances I.F.F. (Norden) AB	Sweden
Speximo AB	Sweden
Danisco Cultor Sweden AB	Sweden
Nutrition & Biosciences (Sweden) AB	Sweden
Frutarom Savory Solutions Switzerland AG	Switzerland
Frutarom Switzerland Finance CHF AG	Switzerland
Frutarom Switzerland Finance GBP AG	Switzerland
Frutarom Switzerland Finance MXN AG	Switzerland
Frutarom Switzerland Finance USD AG	Switzerland
Frutarom Switzerland Ltd.	Switzerland
Danisco Cultor (Switzerland) AG	Switzerland
Danisco Switzerland AG	Switzerland
Nutrition & Biosciences (Switzerland) GmbH	Switzerland
Solae Europe Sarl	Switzerland
International Flavors & Fragrances Taiwan Limited	Taiwan
The Mighty Company Limited ⁽²⁰⁾	Thailand
International Flavours & Fragrances (Thailand) Limited	Thailand
DuPont Nutrition (Thailand) Ltd.	Thailand
Nutrition & Bioscience (Thailand) Co., Ltd.	Thailand
DuPont Nutrition (Thailand) Ltd. - Branch	Thailand

Name of Entity	Jurisdiction
Etol Aroma Ve Baharat Gıda Ürünleri San.ve Tic.a.Ş.	Turkey
Frutarom Gıda Ürünleri Sanayi Ve Ticaret Limited Sirketi	Turkey
WIBERG Baharat Sanayi Ve Ticaret Anonim Şirketi	Turkey
IFF Aroma Esans Sanayi Ve Ticaret Anonim Şirketi	Turkey
IFF Turkey Aroma ve Esans Ürünleri Satis Ticaret Anonim Sirketi	Turkey
Danisco Dis Ticaret Limited Sirketi	Turkey
DuPont Nutrition Dis Ticaret Limited Sirketi	Turkey
Frutarom Etol Ukraine LLC.	Ukraine
Frutarom Savory Solutions Ukraine	Ukraine
PARMA FA	Ukraine
PTI-Ukraine LLC	Ukraine
Danisco Ukraine LLC	Ukraine
International Flavors & Fragrances (Middle East) FZ-LLC	United Arab Emirates
CitraSource Holdings, L.L.C.	United States
Crestmont Investment Co.	United States
Eden Essentials, Inc.	United States
Enzymotec USA Inc.	United States
Flavor Systems International, Inc.	United States
Frutarom USA Holding, Inc.	United States
Frutarom USA Inc.	United States
FYMSA Real Estate LLC ⁽²¹⁾	United States
Grow Company Inc.	United States
International Frutarom Corporation	United States
PIASA USA, LLC ⁽²²⁾	United States
Taura Natural Ingredients (North America) Inc.	United States
The Foote & Jenks Corporation	United States
UFC America Inc.	United States
Vaya Pharma Inc	United States
W.W. Holdings Inc.	United States
Wiberg Corporation of California	United States
Asian Investments, Inc.	United States
Bush Boake Allen Inc.	United States
Columbia PhytoTechnology LLC	United States
iDrug Delivery, Inc. ⁽²³⁾	United States
IFF Augusta Holdings LLC	United States
IFF Chemical Holdings Inc.	United States
IFF International Inc.	United States
IFF Worldwide LLC	United States
International Flavors & Fragrances (Caribe) Inc.	United States
International Flavors & Fragrances Holdings, LLC	United States
MC (US) 1 LLC	United States
Neptune Merger Sub II LLC	United States
Tastepoint Inc.	United States
The Additive Advantage LLC	United States
van Ameringen-Haebler, Inc.	United States

Name of Entity	Jurisdiction
Health Wright Products, LLC	United States
Sweeteners (US) LLC	United States
Agtech Products, Inc.	United States
Butamax Advanced Biofuels, LLC	United States
Danisco Holding USA Inc.	United States
Danisco US Inc.	United States
Danisco USA Inc.	United States
IFF Acquisition, LLC	United States
DuPont Danisco Cellulosic Ethanol LLC	United States
IFF Electronics Holding, LLC	United States
DuPont Nutrition USA, Inc.	United States
IFF Protein Technologies International Sales, LLC	United States
IFF S&C Holding, LLC	United States
IFF US Holding, LLC	United States
Finnsugar Bioproducts, Inc.	United States
Genencor International Wisconsin, Inc.	United States
Genentech Ventures, Inc. GTVI	United States
MC (US) 2 LLC	United States
Nutrition & Biosciences USA 1, LLC	United States
Nutrition & Biosciences USA 3, LLC	United States
Nutrition & Biosciences USA 4, Inc.	United States
PM Taiwan, Inc.	United States
Pointer Specialty Chemicals, LLC	United States
Solae Holdings LLC	United States
Solae, LLC	United States
SP Holding IB, Inc.	United States
SP Nutrition and Health (Singapore), Inc.	United States
Specialty Products N&H, Inc.	United States
Specialty Products US, LLC	United States
PTI CA LLC	Uzbekistan
Venezuelan Protein Technologies International - Pti, C.A.	Venezuela
International Flavors & Fragrances (Vietnam) Limited Liability Company	Vietnam
Nutrition & Biosciences Vietnam Company Limited	Vietnam
Bush Boake Allen Zimbabwe (Private) Limited	Zimbabwe
International Flavors & Fragrances (Zimbabwe) (Private) Ltd.	Zimbabwe

The companies listed above constitute all subsidiaries of the Company as of February 27, 2023. Except as otherwise indicated, such subsidiaries are wholly owned, directly or indirectly, by the Company.

- (1) 51% of the voting stock of Bremil Industria E Comercio de Ingredientes Alimenticios Ltda is owned indirectly by the Company.
- (2) 51% of the voting stock of Bremil S/A Industria de Produtos Alimenticios is owned indirectly by the Company.
- (3) 51% of the voting stock of Envolvec Industria de Embalagens Ltda is owned indirectly by the Company.
- (4) 51% of the voting stock of Sabormax Industria de Alimentos E Representacao Ltda is owned indirectly by the Company.
- (5) 62.3% of the voting stock of Fangchen International Trading Ltd is owned indirectly by the Company.
- (6) 62.3% of the voting stock of Pucheng Yongfang Fragrance Technology Co., Ltd. is owned indirectly by the Company.

- (7) 95% of the voting stock of International Flavors & Fragrances (Hangzhou) Co., Ltd. is owned indirectly by the Company.
- (8) 52% of the voting stock of Danisco Shineway Luohe Food Company Limited is owned indirectly by the Company.
- (9) 60% of the voting stock of Danisco Shineway Luohe Soy Industry Company Limited is owned indirectly by the Company.
- (10) 74.85% of the voting stock of FYMSA del Caribe, S.R.L is owned indirectly by the Company.
- (11) 70% of the voting stock of Leagel GmbH is owned indirectly by the Company.
- (12) 71.59% of the voting stock of Thorverk Ltd / Thorungaverksmiðjan hf. / Þörungaverksmiðjan hf. is owned indirectly by the Company.
- (13) 70% of the voting stock of Sonarome Private Limited is owned indirectly by the Company.
- (14) 93.36% of the voting stock of International Flavours & Fragrances India Private Limited is owned indirectly by the Company.
- (15) 56.9% of the voting stock of Nutra-Lease Ltd. is owned indirectly by the Company.
- (16) 75% of the voting stock of Proveedores de Ingeniería Alimentaria, S.A. de C.V. (“PIASA”) is owned indirectly by the Company.
- (17) 75% of the voting stock of Representaciones FYMSA, S.A. de C.V (FYMSA) is owned indirectly by the Company.
- (18) 70% of the voting stock of Leagel S.r.l. is owned indirectly by the Company.
- (19) 80% of the voting stock of Vaya Pharma Pte Ltd is owned indirectly by the Company.
- (20) 60% of the voting stock of The Mighty Company Limited is owned indirectly by the Company.
- (21) 75% of the voting stock of FYMSA Real Estate LLC is owned indirectly by the Company.
- (22) 75% of the voting stock of PIASA USA, LLC is owned indirectly by the Company.
- (23) 65% of the voting stock of iDrug Delivery, Inc. is owned indirectly by the Company.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-231270) and Form S-8 (No. 333-268580, No. 333-255780, No. 333-252650, No. 033-54423, No. 333-61072, No. 333-120158, No. 333-126421, and No. 333-203902) of International Flavors & Fragrances Inc. of our report dated February 27, 2023 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

New York, New York

February 27, 2023

CERTIFICATION

I, Frank Clyburn, certify that:

1. I have reviewed this Annual Report on Form 10-K of International Flavors & Fragrances Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2023

By: /s/ Frank Clyburn
Name: Frank Clyburn
Title: Chief Executive Officer

CERTIFICATION

I, Glenn Richter, certify that:

1. I have reviewed this Annual Report on Form 10-K of International Flavors & Fragrances Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2023

By: /s/ Glenn Richter
Name: Glenn Richter
Title: Executive Vice President and Chief Financial & Business Transformation Officer

