



2024 Annual Report

April 23, 2025

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2024

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: 001-32598



Entegris, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

41-1941551
(I.R.S. Employer
Identification No.)

129 Concord Road, Billerica, Massachusetts 01821
(Address of principal executive offices and zip code)

(978) 436-6500
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Exchange on which Registered
Common Stock, \$0.01 Par Value	ENTG	The Nasdaq Global Select Market

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 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 check mark if 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 voting and non-voting stock held by non-affiliates of the registrant, based on the last sale price of the Common Stock on June 28, 2024, the last business day of registrant’s most recently completed second fiscal quarter, was \$18.3 billion. Shares held by each officer and director of the registrant and by each person who owned 10 percent or more of the outstanding Common Stock have been excluded from this computation in that such persons may be deemed to be affiliates of the registrant. The determination of affiliate status for this purpose is not necessarily a conclusive determination for other purposes.

As of February 5, 2025, 151,126,743 shares of the registrant’s Common Stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s Definitive Proxy Statement for its 2025 Annual Meeting of Stockholders scheduled to be held on April 23, 2025 (the “2025 Proxy Statement”) which is scheduled to be filed with the Securities and Exchange Commission (the “SEC”) not later than 120 days after December 31, 2024, are incorporated by reference into Part III of this Annual Report on Form 10-K. With the exception of the portions of the 2025 Proxy Statement expressly incorporated into this Annual Report on Form 10-K by reference, such document shall not be deemed to constitute part of this Annual Report on Form 10-K.

Auditor Name	Auditor Location	Auditor Firm ID
KPMG LLP	Minneapolis, Minnesota	185

ENTEGRIS, INC.

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PART I

Item 1. Business.

OUR COMPANY

Entegris, Inc. (“Entegris”, “the Company”, “us”, “we”, or “our”) is a leading supplier of critical advanced materials and process solutions for the semiconductor and other high-technology industries. We leverage our unique breadth of capabilities to help our customers improve their productivity, product performance and technology in the most advanced manufacturing environments.

Semiconductors, or integrated circuits, are key components in electronic devices that continue to change the way we live, communicate and work. Products and emerging applications such as artificial intelligence, high-performance and cloud computing, smartphones, wearable technology, self-driving vehicles, the Internet of Things, gaming and virtual reality, and smart healthcare will require faster, more powerful, more compact and more energy efficient semiconductors. We believe these trends, combined with existing applications, will drive long-term secular growth for semiconductors, with semiconductor sales reaching approximately \$1 trillion by 2030, creating significant opportunities for our products.

To meet the demanding requirements of advanced products and applications, semiconductors have rapidly become increasingly complex, moving to smaller geometries and adopting new device architectures. These advancements are enabled by new and innovative materials and ensuring the purity of the materials and the cleanliness of wafers throughout the manufacturing process. We believe Entegris offers the industry’s most comprehensive electronic materials portfolio, with core capabilities in materials science and materials purity, and complementary solutions that enable faster time to yield. We believe these capabilities are critical enablers of our customers’ technology roadmaps. We expect these trends to translate into a higher served addressable market for our products and to expand Entegris’ content per semiconductor wafer, which we believe will allow us to achieve growth that outperforms our markets.

In the fourth quarter of 2024, the Company announced an internal reorganization, combining two complementary divisions into one and realigning its customer facing organization. Our business is now organized and operated in two operating segments as discussed below. The current annual and succeeding annual periods will disclose the reportable segments with prior periods recast to reflect the change. These segments share common business systems and processes, technology centers and technology roadmaps.

- The Materials Solutions segment, or MS, provides materials-based solutions, such as chemical vapor and atomic layer deposition materials, chemical mechanical planarization (“CMP”) slurries and pads, ion implantation specialty gases, formulated etch and clean materials, and other specialty materials that enable our customers to achieve better device performance and faster time to yield, while providing for lower total cost of ownership.
- The Advanced Purity Solutions segment, or APS, offers filtration, purification and contamination-control solutions that improve customers’ yield, device reliability and cost by ensuring the purity of critical liquid chemistries and gases and the cleanliness of wafers and other substrates used throughout semiconductor manufacturing processes, the semiconductor ecosystem and other high-technology industries.

With our complementary capabilities, we believe we are uniquely positioned to create new, co-optimized and increasingly integrated solutions for our customers, which should translate into improved device performance, lower cost of ownership and faster time to market. For example, we have the capabilities and core competencies to develop and co-optimize offerings solving customers’ complex manufacturing challenges across the deposition, CMP process and post-CMP modules, with solutions including advanced deposition materials, CMP slurries, pads and post-CMP cleaning chemistries (each from our MS segment), and CMP slurry filters, high-purity packaging and fluid monitoring systems (each from our APS segment).

ACQUISITIONS AND DIVESTITURES

On July 6, 2022, we completed the acquisition of CMC Materials, Inc. (now known as CMC Materials LLC) (“CMC Materials”). We acquired all of the issued and outstanding common shares of CMC Materials for \$133.00 in cash and 0.4506 shares of our common stock per share, representing a total purchase price (inclusive of debt retired and cash assumed) of \$6.0 billion (based on our closing price on June 30, 2022), including \$3.8 billion in cash paid to CMC Materials’ shareholders, the issuance of 12.9 million shares of our common stock (excluding unvested CMC stock options and unvested CMC Materials restricted stock units, restricted shares and performance share units equity awards assumed), \$0.9 billion of debt retired and approximately \$0.3 billion of acquired cash. We financed the cash portion of the purchase price through debt financing.

On February 10, 2023, the Company terminated a definitive agreement to sell its Pipeline and Industrial Materials (“PIM”) business, which became part of the Company with the acquisition of CMC Materials, to Infineum USA L.P. At the time of the termination, the transaction had not received clearance under the Hart-Scott-Rodino Antitrust Improvements Act of 1976.

On March 1, 2023, the Company completed the sale of QED Technologies International, Inc. (“QED”), which became part of the Company with the acquisition of CMC Materials, to an affiliate of Quad-C Management, Inc. for \$134.3 million.

On June 5, 2023, the Company terminated an Alliance Agreement (the “Alliance Agreement”) between the Company and MacDermid Enthone Inc., a global business unit of Element Solutions Inc (“MacDermid Enthone”). In connection with the termination of the Alliance Agreement, Entegris received net proceeds of approximately \$191.2 million.

On October 2, 2023, the Company completed the sale of its Electronic Chemicals (“EC”) business to FUJIFILM Holdings America Corporation (“Fujifilm”) for \$675.3 million. The EC business, which was a separate reporting unit within the MS reportable segment, was acquired by Entegris with the acquisition of CMC Materials in July 2022.

On March 1, 2024, the Company completed the sale of its Pipeline and Industrial Materials (“PIM”) business, to SCF Partners, Inc. The Company received gross cash proceeds of \$263.2 million, or net proceeds of \$256.2 million, and up to \$25.0 million in cash earn-out payments contingent upon the performance of the PIM business in 2025 and 2026.

THE SEMICONDUCTOR ECOSYSTEM

The manufacture of semiconductors requires hundreds of highly complex and sensitive manufacturing steps, during which a variety of materials are repeatedly applied to a silicon wafer to build integrated circuits on the wafer surface. The areas of the semiconductor ecosystem that rely most heavily on our products and solutions are described below.

Photolithography. Photolithography, a process repeated during semiconductor fabrication, is used to print complex circuit patterns onto the wafer. During this process, the wafer is coated with a thin film of light-sensitive material, called photoresist. Light is projected to expose the photoresist, which is then developed to create a pattern. Our product offerings that are used throughout the photolithography process include:

- Liquid filtration, high-purity packaging and high-precision dispense systems designed to ensure the pure, accurate and uniform distribution of contamination-free photoresists onto the wafer, enabling manufacturers to achieve optimum yields in the manufacturing process; and
- Gas microcontamination control solutions designed to eliminate airborne contaminants that can disrupt effective photolithography processes.

Etch and Resist Strip. During the etch process, specific areas of thin film that have been deposited on the surface of a wafer are removed to leave a desired circuit pattern. After the etch process, the hardened resist must be completely removed and the etched area must be cleaned, which requires the use of high-purity chemicals. Several of our products are utilized during and after the etch process, including:

- Selective etch chemistries to enable high aspect ratio structures, such as 3D-NAND devices and gate-all-around (“GAA”) features;
- Formulated cleaning solutions to remove photoresists and post-etch residues;
- Filters and purifiers, which help to ensure the purity of formulated cleaning chemistries and to achieve desired yields in the etch processing steps; and
- Precision-engineered coatings to provide barriers to corrosive chemistries in the etch environment, protect surfaces of equipment components from erosion and minimize particle generation.

Deposition. Deposition is a process during which certain materials are transferred to the surface of a wafer. Deposition processes include physical vapor deposition, or PVD, chemical vapor deposition, or CVD, and atomic-layer deposition, or ALD. We provide products that are used during deposition processes and that are critical to enabling new device architectures. These products, which are designed to ensure device performance and achieve desired manufacturing yields, include:

- Advanced precursor materials, which are utilized to meet the semiconductor industry's composition, uniformity and thickness requirements of deposited films; and
- Filtration and purification products, which are used to remove contaminants during the deposition process, consequently reducing defects on wafers.

Ion Implant. Ion implantation is a method repeated many times during semiconductor fabrication where dopants are introduced into a semiconductor wafer enhancing conductivity. Our products used during the ion implant process include:

- Implant process gases and mixtures in our Safe Delivery Source® (“SDS®”) and Vacuum Actuated Cylinders (“VAC®”) gas delivery systems, designed to ensure the safe, effective and efficient delivery of these materials; and
- Electrostatic chucks and proprietary low temperature plasma coating processes for core components, which are critical elements of ion implantation equipment.

Chemical Mechanical Planarization. CMP is a polishing process used by semiconductor manufacturers to planarize, or flatten, many of the layers of material that have been deposited on silicon wafers. Our offerings include:

- CMP slurries, used for polishing a wide range of materials used in semiconductors, including tungsten, dielectric materials, copper, tantalum (commonly referred to as “barrier”), molybdenum, aluminum, silicon carbide (“SiC”) and gallium nitride (“GaN”);
- CMP polishing pads, which are used in conjunction with slurries in the CMP process on a variety of polishing tools and wafers over a range of technology nodes and applications, including tungsten, copper, and dielectrics;
- Formulated cleaning chemistries, which remove residues from wafer surfaces after the CMP process;
- Filtration and purification solutions, which are used to remove select particles and contaminants from slurries and cleaning chemistries that can cause defects on a wafer's surface; and
- Process monitoring and control equipment, which maintain the integrity of the CMP slurries.

Wafer and Reticle Transport. Our products, such as our front-opening unified pods (“FOUPs”), wafer transport and process carriers, standard mechanical interface pods (“SMIF pods”) and extreme ultraviolet (“EUV”) reticle pods, protect wafers and reticles from damage or abrasion and ensure purity during transportation and automated processing. Protection of processed wafers is essential to our customers because wafer processing involves hundreds of steps and can take several weeks, making the scrapping of damaged wafers very costly.

Chemical Handling. Semiconductor manufacturing and other high-technology manufacturing processes utilize large volumes of high-purity and hazardous chemicals. We provide solutions for the handling and ensuring the purity of such chemicals, including:

- Ultra-high purity chemical container products, such as drums, flexible packaging and associated coded connection systems, which are designed to maintain chemical purity, maximize utilization and ensure safe transport, containment and dispense of valuable, ultra-clean process fluids, from bulk chemical manufacturing to point-of-use in the manufacturing process; and
- Ultra-pure valves, fittings, tubings and sensing and control products, which are used to distribute these chemicals around the fab and in wet process tools.

Wafer and Package Testing. We develop and manufacture high-performance consumable products for cleaning advanced probe cards and test sockets at semiconductor manufacturing facilities and innovative polymer products for semiconductor fabs that improve front-end tool uptime and reduce operating costs.

INDUSTRY TRENDS

Emerging and Existing Applications. The market for semiconductors has grown significantly over the past few decades. Although there have been and will likely continue to be periodic downturns, as parts of the industry have been experiencing recently, we expect the long-term growth trend to continue. We believe that artificial intelligence, high-performance and cloud computing, smartphones, wearable technology, self-driving vehicles, the Internet of Things, gaming and virtual reality, and smart healthcare will drive growth in the demand for semiconductors, drive wafer starts and create significant opportunities for our products. Existing applications in data processing, wireless communications, broadband infrastructure, personal computers, handheld electronic devices and other consumer electronics are also expected to drive demand for semiconductors, and in turn, for our products.

Manufacturing Complexity and Device Architectures. Emerging applications require more powerful, faster and more energy-efficient semiconductors. In response, semiconductor architectures are changing and dimensions are shrinking, with transistor design increasing in complexity, the use of extreme ultraviolet lithography, multilayered patterning, and vertical structures such as FinFET, 3D NAND and GAA devices. These advanced technologies and architectures require more process steps, new and innovative materials and more sophisticated contamination control solutions. For example, leading-edge semiconductor manufacturers are moving towards atomic layer scale. These advanced materials need to be supplied and delivered at increasing levels of purity and control, from point-of-production to point-of-dispense on the wafer to improve and maximize yields and minimize the risk of defects. We believe that the increase in process steps in lithography, deposition, CMP, etching and cleaning required to manufacture leading-edge semiconductors will increase the overall demand for our solutions.

New and Advanced Materials. New and advanced materials have played a significant role in enabling improved device performance, and we expect this trend to continue. As dimensions get smaller, more novel materials will be required to enable transistor connectivity. Our portfolio of critical materials includes advanced deposition materials, implant gases, CMP slurries, formulated cleaning chemistries, selective etch chemistries and high-purity wet chemicals. We believe our portfolio addresses many of the challenges our customers face as they introduce more complex architectures and search for new materials to improve the performance of their devices.

Materials Purity. Contamination control in a semiconductor fab is crucial for achieving acceptable device yields as feature size decreases and 3D structures proliferate. Our advanced filtration and purification products and solutions for air, bulk or specialty gas, and wet chemicals are designed to reduce defects and enable higher yields for our customers. We also have solutions, such as FOUPs and high-purity drums, that ensure the purity of and protect critical materials throughout the fabrication process, allowing our customers to store, process and transport critical materials in ultra-pure environments throughout the manufacturing process. We believe that the trend for greater materials purity will provide opportunities for us to provide innovative materials management, filtration, purification, transport and process solutions to semiconductor customers.

Geopolitical Implications of the Semiconductor Industry. We have seen, and expect to continue to see, certain governments foster and bolster domestic semiconductor manufacturing and the broader semiconductor ecosystem. Examples include the United States (“U.S.”) and European Union (“EU”) CHIPS Acts and similar initiatives in Japan and Korea. We have been proactively developing a manufacturing strategy to better serve our global customers as they build new fabs in various countries and seek reliable local supply chain partners. Recent examples of this strategy include our new facilities located in Kaohsiung Science Park (“KSP”) in Taiwan and in Colorado Springs, Colorado. Our KSP site, which opened in May 2023, will be our largest manufacturing facility and will enhance our ability to serve our customers efficiently and effectively in Taiwan and other Asia Pacific locations. We continue to make progress on our new state-of-the-art Colorado Springs manufacturing facility, which we expect to start production in the second half of 2025. In December 2024, we announced that we entered into a definitive agreement providing for up to \$77.0 million in funding under the CHIPS and Science Act in connection with our Colorado Springs facility, with installments of such award based on achievement of agreed-upon milestones. This new Colorado Springs facility is intended to increase our service levels to new fabs expected to be built in the U.S. and provide us with greater manufacturing resiliency in the form of enhanced business continuity plans.

See “Item 1A. Risk Factors” for a more detailed description of the geopolitical risks we face.

Reliance on Trusted Suppliers. Our customers require that their key materials suppliers demonstrate greater capabilities and resiliency in their processes, including sustainability, scalability, flexible manufacturing, quality control, supply chain management and the ability to effectively collaborate on solutions to problems. In response to these customer expectations, we seek to leverage our manufacturing, operational and technical capabilities, along with our broad technology portfolio, to become an increasingly important and strategic trusted partner to our customers. We have established tech centers and manufacturing capabilities in strategic locations to enable us to better collaborate with and serve our customers. Furthermore, as

we continue to achieve greater scale, for example, through the acquisition of CMC Materials, we believe we will better serve our customers, be able to invest more in engineering, research and development (“ER&D”) and bring complementary, co-optimized solutions to market faster than ever before.

Continued Consolidation. Our customer base within the semiconductor industry has consolidated in recent years through mergers and acquisitions. As a result, the importance of maintaining and developing strong and close relationships with our customers becomes even more essential. In addition, we seek to further broaden our customer base by leveraging our core capabilities, technologies, and expertise in serving semiconductor applications to address adjacent market opportunities, including in hydrogen purification, clean energy, batteries, light emitting diodes (“LEDs”), optical space systems and products for life sciences applications.

OUR COMPETITIVE STRENGTHS AND BUSINESS STRATEGY

We believe that our platform is well-positioned and sets us apart from our competitors for several reasons.

- In 2024, our revenue was predominantly unit driven or recurring in nature, from products repeatedly consumed as a result of the semiconductor manufacturing process. As a result, our revenue is generally more impacted by overall global semiconductor demand and global GDP growth, rather than the sales of semiconductor capital equipment, which has historically been more cyclical.
- Our solutions are increasingly specified into our customers’ manufacturing processes and tailored to meet our customers’ unique process conditions and technical roadmaps. We collaborate closely with our customers to create complementary solutions across platforms and modules allowing them to optimize value and accelerate time to yield. Therefore, switching away from our products may be costly and time-consuming for our customers and may introduce risk to their manufacturing yields.
- We have a broad product portfolio that is not overly concentrated on any single product or product platform. As of December 31, 2024, we offered over 21,000 standard and customized products, and in 2024 no single product platform represented more than 3% of our net sales.
- We have a broad and diverse customer base. As of December 31, 2024, our top ten customers make up 48% of our sales. Our customers include a cross-section of the semiconductor ecosystem, from chemical companies and equipment manufacturers to semiconductor fabs.
- We have streamlined our platform to focus on the core areas of our businesses that we believe have the greatest strategic value in supporting our customers and their technology roadmaps. To that end, as further described above, during 2023 and 2024, we completed the divestitures of QED, our EC business and our PIM business and terminated the Alliance Agreement with MacDermid Enthone.
- We intend to continue to further pay down our debt, while also investing in research and development and the advanced manufacturing capabilities necessary to maintain and expand our technology leadership and to drive organic growth.

Customers Collaboration. We believe the strong relationships we have with our customers, which include leading logic and memory semiconductor manufacturers, original equipment manufacturers (“OEMs”) and semiconductor materials suppliers, are critical to our long-term success. We have built strong relationships with our customers through our expansive global presence, which allows us to engage with our customers where they operate. For example, we chose to invest in our KSP manufacturing facility in Taiwan and in our new research center in South Korea to effectively collaborate with our customers locally in order to jointly uncover novel solutions for our customers’ yield, reliability and performance challenges. We are actively engaged with our key customers to design technology roadmaps specifically tailored to their short- and long-term strategic plans. These customer relationships provide us with collaboration opportunities at the early product design stage (in certain cases years ahead of commercialization), which facilitate our ability to introduce new products and applications that serve our customers’ needs. We intend to reinforce and further strengthen these relationships through, among other things, collaborations and joint development activity.

Supporting the Integration of New Materials. We understand the significant challenges our customers face as they introduce new materials into processes to manufacture increasingly advanced and complex semiconductor chips. New materials must outperform incumbent materials and deliver equivalent or higher yields without causing integration issues with other process

steps. For example, the decision to introduce a new material at the deposition stage of the semiconductor manufacturing process will impact CMP and the post-CMP cleans, etch and post-etch residue cleans, as well as the selection of filters in several other stages of the process. We believe one of our value propositions is our ability to both manufacture new materials and to support our customers in evaluating how those new materials interact with other stages in the manufacturing process. Specifically, we leverage our understanding of upstream and downstream interactions between unit process steps and tailor our product offerings to lower the risk of issues arising as a result of new material introduction into these processes. We believe this approach is critical for accelerating the introduction of new material innovations because it reduces development cycles of learning while accelerating the time to market and yield for our customers.

Technology Leadership and Strong, Diverse Portfolio. Our customers need a broad range of advanced, customized, reliable and cost-effective products and materials, as well as the technological and application expertise to enhance their productivity, quality and yield, especially as they move towards more advanced technology nodes. We believe our comprehensive offering provides us with a competitive advantage, allowing us to meet a broad range of their needs and to serve customers in many aspects of the semiconductor manufacturing ecosystem. To build upon our technology leadership, we have made, and plan to continue to make, significant investments in ER&D initiatives to continue to advance our technology and product offerings, increasingly focusing on meeting the needs of next generation technology nodes. We spent approximately \$316.1 million, \$277.3 million and \$229.0 million on such activities in 2024, 2023 and 2022, respectively, representing 9.8%, 7.9% and 7.0% of our net sales, in 2024, 2023 and 2022, respectively. We are committed to providing customers with innovative technologies and solutions for their evolving manufacturing needs. For example, we have introduced sub-5 nanometer filtration products, advanced deposition materials for next generation transistor and interconnect technologies, polishing slurry and pad solutions with post-cleaning formulations to meet the needs of advanced memory applications, selective etching formulations for advanced device applications, advanced reticle pods for EUV photolithography applications, advanced 300 millimeter wafer carriers and advanced coatings to meet the rigorous defectivity specifications for the manufacturing of advanced technology nodes.

Global Infrastructure. We have a global infrastructure of design, manufacturing, logistics, distribution, service and technical support facilities to meet the needs of our global customers. We further enhanced this footprint with the opening of a new manufacturing center of excellence in Taiwan, our KSP facility, in May 2023, which will become our largest manufacturing facility. In addition, we continue to make progress on our new state-of-the-art Colorado Springs manufacturing facility, which we expect to ramp production in the second half of 2025 and a new tech center in South Korea, which we expect to commence operations during the first half of 2025. Over the last several years we have also invested in expanding our capacity and capabilities at our existing facilities to meet existing and anticipated demand, including adding new capacity in liquid filtration in Billerica, Massachusetts and Yonezawa, Japan, in deposition materials in Toronto, Ontario, in materials handling in Chaska, Minnesota and JangAn, Korea, in CMP filter and CMP slurries in Taiwan, in SiC slurries in Aurora, Illinois and in solid precursors in Burnett, Texas.

Operational Excellence. Our customers are increasingly focused on the effectiveness, dependability, resiliency and consistency of their supply chains. Our strategy is to continue to develop and enhance our extensive supply chain and manufacturing capabilities into a competitive advantage by driving operational excellence, operating in a manner that ensures the safety of our employees and the quality of our products. As described above, we believe our significant investments in our new KSP facility in Taiwan and our facility in Colorado Springs, Colorado will enhance our operational excellence. To perform at the high level of our customers' expectations, we intend to continue to invest in the following priorities:

- Manufacturing equipment and facilities incorporating leading-edge process technology, including advanced cleanroom and cleaning procedures;
- Automated manufacturing, statistical process controls, quality and supply chain management systems; and
- A highly skilled and agile organization, capable of rapid design, prototyping and ramping to high volume manufacturing while promptly responding to new customer requirements and feedback.

Leveraging Our Collective Expertise. We leverage our expertise across our segments and broad portfolio of advanced materials, materials handling and purification capabilities to create innovative, new and co-optimized solutions to address unmet customer needs. For example, certain of our formulated cleaning chemistry products are developed and manufactured by our MS segment, with collaboration from our filtration expertise in our APS segment, packaged with our ultra-clean container and connector system, delivered to the process tools through fluid handling systems each from our APS segment, and, in the process tools, may be purified through systems produced by our APS segment. Another example of our internal collaboration and broad technical expertise is in our advanced deposition materials business, which requires comprehensive capabilities across several disciplines, including the synthesis of unique molecules, purification of these materials and the capability to

safely transport and deliver them onto the wafer, free from contaminants, at a high throughput. Furthermore, as the semiconductor industry looks to new interconnect metals like molybdenum, our portfolio of deposition precursors, CMP slurries and pads, post-CMP cleans and selective etch formulations, combined with our filtration, sensing, and delivery products will enable us to create complementary solutions and enable our customers to enhance their device performance and optimize time to yield.

Strategic Acquisitions, Partnerships and Related Transactions. We have completed the integration of CMC Materials into the Company and have streamlined our portfolio through the divestitures of QED, our EC business and our PIM business and the termination of the Alliance Agreement with MacDermid Enthone, with the proceeds of these transactions used for debt pay down. We expect to continue to pursue strategic acquisitions and business partnerships that enable us to address gaps in our product offerings, secure new customers, diversify into complementary product markets, broaden our technological capabilities and product offerings, access local or regional markets and achieve benefits of increased scale. We believe we have a strong track record of executing these transactions and their integration. Our acquisition of CMC Materials broadened our product and technology capabilities and increased our scale. In the years preceding the CMC Materials acquisition, we completed numerous small to mid-sized acquisitions, which strengthened and expanded our product portfolio. Further, we will reevaluate our existing businesses from time to time and may decide to sell, restructure or replace one or more businesses. Finally, we regularly evaluate opportunities for strategic alliances, joint development programs and other strategic investments to achieve a variety of objectives including expanding our manufacturing capacity, producing products closer to our customers, developing optimized products more quickly and developing new sources of supply to provide us with a competitive advantage.

Adjacent Markets. We leverage the expertise that we have gained from serving the semiconductor industry, as well as our core capabilities in material science and material purity, to develop product extensions for other industries that employ technologies and production processes that require materials integrity management, high-purity fluids and integrated dispense systems. We believe our products and technologies are well-suited to create innovation in industries like hydrogen purification, clean energy, batteries, LEDs, optical space systems and products for life sciences applications. We plan to continue identifying and selectively developing product extensions that address needs in adjacent markets and, in doing so, we seek to increase the total available market for our products and to increase our return on ER&D investments.

Corporate Social Responsibility. We seek to embed our corporate social responsibility (“CSR”) program into our business strategy and measure progress toward the 2030 goals we have established. Our program is built around the four core pillars of Innovation, Safety, Personal Development and Inclusion, and Sustainability. The program includes goals for each of the four pillars to guide us towards 2030. Our latest corporate social responsibility report released in 2024 provides a comprehensive overview of Entegris’ continued efforts to advance these goals. Recent accomplishments include continuing to achieve a “Gold” rating from EcoVadis with a ranking in the 98th percentile and an “A” rating from MSCI. The annual corporate social responsibility report is published on our website at <http://www.Entegris.com> under “About Us - Corporate Social Responsibility”.

OUR SEGMENTS

Following a change in our organization structure in the fourth quarter of 2024, our business is organized and operated in two segments: Materials Solutions, or MS, and Advanced Purity Solutions, or APS. These segments collaborate to create new and increasingly integrated solutions for our customers, such as leveraging the purification and handling expertise of the APS segment to ensure maximum purity and stability of CMP slurries and cleans solutions from the MS segment and leveraging the advanced materials expertise from the MS segment in formulated cleaning chemistries and in slurry formulation to develop differentiated filtration and purification solutions in the APS segment. The following is a detailed description of our segments.

MATERIALS SOLUTIONS SEGMENT

MS provides complementary materials solutions around the primary modules in the semiconductor manufacturing process and in the emerging area of advanced packaging, including deposition materials, integrated circuit CMP solutions, high-performance etch and clean chemistries, gases and materials, and safe and efficient materials delivery systems that enhance our customers’ product performance. Our ability to deliver advanced materials at high purity, together with critical products like CMP slurries and pads, enables our customers’ technical roadmap, improves device performance, enhances their yields and is critical to enabling the performance of leading-edge logic and memory devices. We believe the growing long-term demand in the advanced logic and memory market, the need to introduce new and innovative materials at advanced nodes with increasingly complex device design schemes and the importance of recess chemistries and specialized cleaning solutions will drive demand in our MS segment.

Deposition and Etch Solutions. We offer the following Deposition and Etch Solutions products:

Advanced Deposition Materials Products. Our advanced deposition materials include ultra-pure liquid and solid precursors, including organometallic and inorganic precursors for the deposition of molybdenum, tungsten, titanium, hafnium, zirconium, aluminum and other emerging metal and metal-based films. We also offer organosilane precursors for the deposition of silicon oxide, silicon nitride and advanced dielectric materials films as well as a variety of molecules required to enable area-selective deposition applications. These precursors are designed in close collaboration with OEM process tool manufacturers and device makers to produce application-specific solutions that are compatible with complex integrations of material solutions used to build the semiconductor device. We offer delivery systems and containers that allow for reliable storage and delivery of low volatility solid and liquid precursors required in atomic layer deposition processes. When combined with our proprietary corrosion-resistant coatings and filtration solutions, we believe our advanced deposition solutions enable the industry's highest purity levels, resulting in improved device performance.

Surface Preparation and Integration Products. We offer a range of materials used to prepare the surface of a semiconductor wafer during the manufacturing process and to integrate with materials being used on the wafer. We offer a broad range of cleaning solutions for applications such as semiconductor post-etch residue removal, wafer etching, organics removal, resist removal, edge bead removal and corrosion prevention. In addition, we offer selective etch products designed to enable advanced architectures such as 3D-NAND.

Dry Process Solutions. We offer the following Dry Process Solutions products:

Specialty Gases. Our specialty gas solutions provide advanced safety and process capabilities to semiconductor and display manufacturers. Our SDS cylinders safely store and deliver hazardous gases, such as arsine, phosphine, germanium tetrafluoride and boron trifluoride, at sub-atmospheric pressure through the use of our proprietary carbon-based adsorbent materials. These cylinders are designed to minimize potential leaks during transportation and use and allow more gas to be stored, providing significant safety, environmental and productivity benefits over traditional high-pressure cylinders. We also offer VAC, a complementary technology to SDS, where select implant gases and gas mixtures are stored under high pressure but are delivered sub-atmospherically.

Specialty Coatings. Our high-performance specialty coatings, such as our Pegasus™ and Cearus™ coatings, provide erosion resistance, minimize particle generation and prevent contamination on critical components in semiconductor environments and other high-technology manufacturing operations.

Advanced Cleaning Materials. We develop and manufacture high-performance consumable products for cleaning advanced probe cards and test sockets, designed to improve customer yields and throughput in wafer and package test operations at semiconductor device manufacturers, foundries, and outsourced semiconductor assembly and test ("OSAT") facilities.

Integrated Circuits ("IC") Polishing Solutions. Our IC Polishing Solutions enables us to fully leverage our capabilities as a CMP solutions provider to the semiconductor industry by providing the following products:

CMP Slurries. We develop, produce, and sell CMP slurries for polishing a wide range of materials used in semiconductor devices, including tungsten, dielectric materials, copper, barrier, aluminum, and other emerging materials used in semiconductor device fabrication. We believe that we are uniquely positioned to be able to develop and optimize new slurries that can be utilized on emerging materials used in semiconductor device fabrication, such as molybdenum and ruthenium.

CMP Pads. CMP pads are critical in the CMP process to flatten and polish wafers and can have a significant impact on process performance. Our CMP Pads, such as our NexPlanar™, Medea™ and Ultra pad products are designed to provide the exact hardness, pore sizes, compressibility, and groove patterns needed to meet and exceed the requirements of various CMP applications. Our Epic Power™ CMP Pads are designed for SiC wafers and offer a balance of best-in-class performance, quality, and cost of ownership.

Post-CMP Cleans and Brushes. Our post-CMP clean chemistry products, such as PlanarClean® and ESC 784, are designed to efficiently remove the abrasive slurry particles and organic residue from the wafer after the CMP process, removing residue that might affect yield while not contributing to contamination. In addition, our consumable polyvinyl alcohol roller brush products are used to clean the wafer following the CMP process.

Advanced Materials Markets (“AMM”). AMM focuses on developing and selling products to customers in new and emerging market areas outside of the semiconductor manufacturing process. AMM includes our POCO® premium graphite products, used to make precision consumable electrodes for electrical discharge machining, hot glass contact materials for glass product manufacturing and forming and other consumable products for various industrial applications, including aerospace, optical, medical devices, air bearings and printing. It also includes our slurry products used for polishing bare silicon wafers and other ultra-hard surface materials, including SiC and GaN substrates as well as disk substrates and magnetic heads used in hard disk drives, which are utilized in power electronics and advanced communications end-markets. AMM also provides specialty chemicals and specialty materials to enable advanced performance of product solutions in a wide range of end-markets, including aircraft, aerospace, wound care and medical devices.

ADVANCED PURITY SOLUTIONS SEGMENT

The APS segment is the segment resulting from combining the Microcontamination Control (“MC”) segment and the Advanced Materials Handling (“AMH”) segment, both of which offered highly complementary products with a core focus on ensuring critical materials purity. The APS segment offers solutions to ensure the purity of critical liquid chemistries, process gases, wafers and substrates in semiconductor manufacturing processes and other high-technology industries. Our liquid and gas filtration and purification products are critical to semiconductor manufacturing processes, including photolithography, deposition, planarization and surface etching and cleaning, because they remove nanometer-sized contaminants, directly reduce defects, improve manufacturing yield and enhance the long-term reliability of the semiconductor device. Our microenvironment solutions improve our customers’ yields by ensuring the purity of wafers and protecting them from contamination and damage during manufacturing and transportation, while our fluid management solutions ensure the purity and safe delivery of advanced chemicals from the chemical manufacturer to the point-of-use in the semiconductor fab.

We believe the value proposition of materials purity is increasing, in large part due to increasing manufacturing complexity, continuous node shrink in logic semiconductors and the ramp in the 3D NAND market, as the risk and cost of yield loss due to contamination grows.

Liquid Microcontamination Control Products. We offer a variety of products that control contaminants in our customers’ wet processes both in the fab environment and upstream at the chemical manufacturers. For example, our Torrento® series of filters is used for the filtration of aggressive acid and base chemistries for both semiconductor fabs as well as specialty chemical manufacturers, including our MS segment. Manufacturers of high purity chemicals and semiconductor fabs use our Trinzik® and Microgard™ products for the filtration of chemicals and ultra-pure water. Our Impact® series of filters are used in point-of-use photochemical dispense applications where the delivery of superior flow rate performance and reduced microbubble formation is critical. Our Protego® series of liquid purifier/filter products are used to reduce metallic contamination in chemical manufacturing and in critical wafer rinsing and drying applications by our customers. In addition, we provide membrane and liquid filtration offerings serving semiconductor, pharmaceutical and medical applications.

Gas Microcontamination Control Products. We offer a broad portfolio of products designed to remove particulate and molecular contaminants from controlled environments and gas streams in semiconductor, flat panel display and LED fabs. Our Wafergard® gas filters reduce outgassing and remove particle contamination. Our GateKeeper® gas purifiers and large facility-wide gas purification systems provide continuous purified gas supply to customer fabs from the point of creation on the gas pads to the point-of-use at the wafer by chemically reacting and absorbing contaminants, effectively removing gaseous contaminants down to part-per-trillion levels. Our Chambergard™ gas diffusers provide semiconductor equipment manufacturers with the capability to rapidly vent their tools to atmosphere to dramatically reduce process cycle times without adding particles to the wafers. In addition, our Vaporsorb products are used to eliminate airborne molecular contamination from critical process tool areas or cleanrooms in the fab. These products are used in or alongside critical processing tools to improve yield and reduce tool downtime.

Microenvironment Solutions. Our wafer carriers are high-purity “micro-environments” that carry wafers between manufacturing process steps. Each of these microenvironments is designed to protect the safety, security, and purity of the wafers throughout the fabrication life cycle. We lead the market for 300 millimeter FOUPs, wafer transport and process carriers and SMIF pods for 200 millimeter wafer applications. Our high-volume line of Ultrapak® products for wafers ranging from 100 to 200 millimeters ensure the clean and secure transport of wafers from the wafer manufacturers to the semiconductor fabs. We also offer a front-opening shipping box (“FOSB”) for the transportation and automated interface of 300 millimeter wafers. Our EUV reticle pod is designed to provide defect-free protection of EUV reticles during shipping, storage, handling, and vacuum-transferring operations.

Fluid Management Products. Our broad range of fluid management solutions maximize fab productivity, improve fab yields and reduce cost of ownership throughout bulk chemical delivery, CMP, wet etch and clean and lithography processes. Our broad portfolio of packaging and container products, from low-volume containers to transport high-value photoresist chemistries, such as our NOWPak® products, to large intermediate bulk containers, such as our FluoroPure® products, ensures the purity of the chemistries they contain. We are a leader in high-purity fluid handling products such as valves, fittings, tubing, piping and associated connection systems, such as our PrimeLock® connections, for high-purity chemical applications. Our proprietary digital flow control technology improves the uniformity of chemicals applied on wafers. For example, our IntelliGen® integrated, high-precision liquid dispense systems enable the uniform application of advanced chemistries during the wafer fabrication process, integrating our valve control expertise with filter device technologies, in order to conserve high-value chemistry and reduce defects on wafers. Our instrumentation solutions ensure consistency and monitoring of complex blended chemistries, such as our on-tool Accusizer® system, which performs automated online particle size and count analysis with applications in both semiconductor and life science industries, and our SemiChem® systems and our Invue® products, which measure chemical concentration in CMP slurries and formulated cleaning chemistries.

OUR CUSTOMERS AND MARKETS

Our customers include logic and memory semiconductor device manufacturers, semiconductor equipment makers, gas and chemical manufacturing companies and wafer grower companies serving the global semiconductor industry. We also sell our products to OSAT facilities, flat panel display equipment makers, panel manufacturers, manufacturers of hard disk drive components and devices and their related ecosystems.

Our other high-technology markets include manufacturers and suppliers in the solar and life science industries, electrical discharge machining customers, glass and glass container manufacturers, aerospace manufacturers and manufacturers of biomedical implantation devices.

Below is a table showing the percentage of our net sales to top customers and the percentage of our net sales that are international during the three most recent fiscal years.

	2024	2023	2022
Percentage of net sales to top customers:			
TSMC	16%	11%	12%
Remaining top ten customers	32%	32%	31%
Total top ten customers	48%	43%	43%
Percentage of net sales by market:			
Domestic/U.S.	21%	25%	24%
Foreign/International	79%	75%	76%

We may enter into supply agreements with our customers. These agreements typically do not contain any long-term purchase commitments. Instead, we work closely with our customers to develop non-binding forecasts of the future volume of orders. However, customers may cancel their orders, change production quantities from forecasted volumes or delay production for reasons beyond our control.

SALES, MARKETING AND SUPPORT

We sell our products worldwide, primarily through our direct sales force and strategic independent distributors located in all major semiconductor markets. We also use independent distributors in other market territories and for specific market segments. As of December 31, 2024, our sales and marketing force consisted of approximately 800 employees worldwide.

Our unique capabilities and long-standing industry relationships have provided us with the opportunity for significant collaboration with our customers at the product design stage, which has facilitated our ability to introduce new materials and new solutions that meet our customers' needs. We continuously seek to identify and address challenges our customers may have with choice, selection and integration of materials and risk of contamination in their processes that may be addressed by our solutions. Our sales representatives provide our customers with worldwide technical support and information about our solutions.

We believe that our technical and application support services are important to our sales and marketing efforts. These services include assisting in defining a customer’s needs, evaluating alternative products and materials, designing a specific system to perform the desired operation, training users and assisting customers in compliance with relevant government regulations. Additionally, our field application engineers, located in major markets we serve, work directly with our customers on product qualification and process improvements in their facilities. We maintain a network of service centers, applications laboratories and technology centers located in key markets internationally and in the U.S. to support our products and our customers with their advanced development needs, provide local technical service and application support and help ensure fast turnaround time.

COMPETITION

The market for our products and solutions is highly competitive. While price is an important factor, we compete primarily on the basis of the following factors:

technical expertise;	time to solution;
product quality and performance;	complementary solutions;
advanced manufacturing capabilities;	supply chain resiliency;
total cost of ownership;	breadth of geographic presence;
historical customer relationships;	customer collaboration, service and support; and
breadth of product offerings;	after-sales service.

We believe that we compete favorably with respect to the factors listed above. We believe that our key competitive strengths include our broad product offerings, our strong research and development infrastructure and investment, our manufacturing excellence, our advanced quality control systems, the low total cost of ownership of our products, our willingness to closely collaborate with our customers to create technical roadmaps aligned with their short- and long-term strategies, our ability to co-optimize our products and our applications expertise in semiconductor manufacturing processes. However, our competitive position varies depending on the market segment and specific product areas within these segments. While we have longstanding relationships with a number of semiconductor and other electronic device manufacturers, we still face significant competition from companies that also have longstanding relationships with other semiconductor and electronic device manufacturers and, as a result, have been able to have their products specified by those customers for use in their fabrication facilities.

The competitive landscape is varied, ranging from business segments within large multinational companies to small regional or regionally-focused companies. While product quality and technology remain critical, industry trends indicate a shift to localized, cost-competitive and consolidated supply chains. Because of the unique breadth of our capabilities, we believe that there are no global competitors that compete with us across the full range of our product offerings.

Notable competitors with respect to our reporting segments include:

<u>Advanced Purity Solutions</u>	<u>Materials Solutions</u>
Pall Corporation (part of Danaher Corporation)	EMD Performance Materials division of Merck KGaA
Shin-Etsu Polymer Co. Ltd.	Electronics & Industrial division of DuPont de Nemours, Inc.
Cobetter Filtration	Electronics Advanced Materials division of Air Liquide
Gudeng Precision Industrial	Linde plc
Aicello Corporation	Anji Microelectronics (Shanghai) Co., Ltd
	Mersen

ENGINEERING, RESEARCH AND DEVELOPMENT

We believe that technology is important to the success of our businesses. We plan to continue to devote significant resources to ER&D, balancing efforts between shorter-term market needs and longer-term investments. As of December 31, 2024, we had approximately 1,400 employees in ER&D. We have supplemented and may continue to supplement our internal research and development efforts by licensing technology from third parties and/or acquiring rights with respect to products incorporating externally owned technologies. Our ER&D expenses consist of personnel and other direct and indirect costs for internally funded project development, including the use of outside service providers.

We believe we have a rich pipeline of development projects. Our ER&D efforts focus on developing and improving our technology platforms for semiconductor and advanced processing applications and identifying and developing products for new applications, often working directly with our customers to address their particular needs.

We have ER&D capabilities in many locations where our customers operate, including Taiwan, South Korea, the U.S., Japan, Canada, China, Singapore and Malaysia. We use sophisticated methodologies to research, develop and characterize our materials and products. Our capabilities to test and characterize our materials and products are focused on continuously reducing risks and threats to the integrity of the critical materials that our customers use in their manufacturing processes.

In addition, we collaborate with leading universities and industry consortia, such as Stanford University, Yale University, the Massachusetts Institute of Technology (MIT), University of Illinois (Champaign Urbana), SUNY Albany, the Fraunhofer Institute, the Interuniversity Microelectronics Center (imec®) and CEA-LETI. We undertake this work to extend the reach of our internal ER&D and to gain access to leading ideas and concepts beyond the time horizon of our internal development activities.

PATENTS AND OTHER INTELLECTUAL PROPERTY RIGHTS

As of December 31, 2024, we owned approximately 4,500 active patents worldwide, of which about 800 were U.S. patents. Additionally, we owned about 2,300 pending patent applications globally. We also license certain patents owned by third parties. We rely on a combination of patent, copyright, trademark and trade secret laws and license agreements to establish and protect our proprietary rights. We seek to refresh our intellectual property on an ongoing basis through continued innovation. We also license and expect to continue to license technology used in the manufacture and distribution of products from third parties. However, we do not consider any particular Company patent or third-party license to be material to our business.

We vigorously protect and defend our intellectual property. We require each of our employees, including our executive officers, to enter into agreements with us pursuant to which the employee agrees to keep our proprietary information confidential and to assign to us inventions made during the course of employment. We also require outside scientific collaborators, sponsored researchers and other advisors and consultants who are provided confidential information to execute confidentiality agreements with us. These agreements generally provide that all confidential information developed or made known to the entity or individual during the course of the entity's or individual's relationship with the Company is to be kept confidential and not disclosed to third parties except in specific limited circumstances.

MANUFACTURING

Our customers rely on our solutions to ensure the integrity of the critical materials used in their manufacturing processes by providing purity, cleanliness, consistent performance, dimensional precision and stability. Our ability to meet our customers' expectations, combined with our substantial investments in worldwide manufacturing capacity and comprehensive supply chain strategy, positions us well to respond to the increasing demands from our customers for yield-enhancing materials and solutions.

To meet our customers' needs worldwide, we have established an extensive global manufacturing network with facilities in the U.S., Canada, China, Japan, Malaysia, Singapore, South Korea and Taiwan. Because we work in an industry where contamination control is paramount, we maintain Class 100 to Class 10,000 cleanrooms for manufacturing and assembly. We believe that our worldwide advanced manufacturing capabilities are important competitive advantages. These include:

engineered polymer conversion and processing;	specialty coating capabilities;
advanced membrane modification and cleaning;	solids and powders compounding and handling;
chemical formulation, blending, synthesis and purification;	graphite synthesis;
gas delivery systems;	blow molding;
high-purity gas handling and transfilling;	rotational molding;
high-purity materials packaging;	machining; and
membrane casting;	assembly.
cartridge manufacturing and assembly;	

We have made significant investments in systems and equipment to create innovative products and tool designs, including metrology and 3D printing capabilities for rapid analysis and prototype production. In addition, we use contract manufacturers for certain of our products both in the U.S. and Asia.

RAW MATERIALS

Our products are made from a wide variety of raw materials that are generally available from multiple sources of supply. Our strategy is to secure various sources of different raw materials, as appropriate, to enable the desired performance of our products, and monitor those sources as necessary to provide supply assurance. While we seek to have several sources of supply for raw materials, certain materials included in our products, such as certain filtration membranes and polymer resins in our APS segment and certain engineered abrasive particles, specialty and commodity chemicals and petroleum coke in our MS segment, are obtained from a single source, a limited group of suppliers or from suppliers in a single country. We have entered into multi-year supply agreements with certain suppliers for the purchase of raw materials in the interests of supply assurance and cost control.

GOVERNMENTAL REGULATION

Our operations are subject to federal, state and local regulatory requirements relating to export controls, environmental, waste management and health and safety matters, including measures relating to the release, use, storage, treatment, transportation, discharge, disposal and remediation of contaminants, hazardous substances and wastes, as well as practices and procedures applicable to the construction and operation of our plants. Although some risk of costs and liabilities related to these matters is inherent in our business, we believe that our business is operated in substantial compliance with applicable regulations. However, new, modified or more stringent requirements or enforcement policies could be adopted, which could adversely affect us. While we expect that capital expenditures will be necessary to ensure that our manufacturing facilities remain in compliance with environmental and health and safety laws, we do not expect these expenditures to be material.

See “Item 1A. Risk Factors” for a more detailed description of the regulatory risks we face.

HUMAN CAPITAL RESOURCES

We believe that our employees are a critical asset in achieving our mission of helping our customers improve their productivity, performance and technology by providing enhanced materials and process solutions for the most advanced manufacturing environments. In order to attract and retain top talent, we are focused on creating a diverse, inclusive and safe workplace. We are committed to providing competitive total rewards and quality development and training opportunities for our employees.

As of December 31, 2024, we had approximately 8,200 employees, of whom approximately 53%, 15%, 10%, 8%, 7%, 5% and 2% are located in North America, Southeast Asia, Taiwan, Japan, South Korea, China and Europe, respectively. Given the variability of business cycles in the semiconductor industry and the rapid response time required by our customers, it is critical that we be able to quickly adjust the size of our production staff to meet our customers’ demands and maximize efficiency and we use skilled temporary labor when possible. None of our employees are represented by a labor union or covered by a collective bargaining agreement other than statutorily-mandated programs in certain international jurisdictions. We believe that our labor relations have generally been good.

Culture. Our organization is built around what we refer to as our PACE values: our core values of treating people with respect and dignity, acting honestly and consistently, encouraging creativity and innovation and a dedication to excellence. We believe that by continuing to focus on these values, we provide our employees with a positive work environment that allows them to develop professionally and encourages them to continue innovating.

We regularly conduct surveys of our employees to understand their perspectives on a number of topics. During 2024, these topics included commitment to Entegris’ core values, safety and general employee satisfaction. Management uses the information gathered from these surveys to inform its decision making with respect to employee matters, aiming to continue to be an employer of choice.

We believe that maintaining a culture of diverse perspectives, experiences and backgrounds helps enable us to innovate more effectively and perform better overall. To that end, we seek to promote diverse backgrounds and perspectives throughout our organization and strive to provide fair and equal opportunity for career development and advancement to all our employees. An example of this commitment is our Employee Network groups, which are designed to focus on personal development and career empowerment and to foster a culture of inclusive collaboration.

Health and Safety. Our success depends on the well-being of our employees. We maintain a culture with an intense focus on safety and strive to identify, eliminate and control risk in the workplace in an effort to prevent injury and illness. Our employees have access to a global safety management system and are encouraged to report incidents, near misses or other observations in

the system. Management uses the information generated by the system to set safety-related policies and to set goals for future performance.

We also design our products with the safety of the people who are using them in mind. Our Safe Delivery Source products are designed to minimize potential leaks during transportation and use of hazardous gases, features which provide significant safety, environmental and productivity benefits over traditional high-pressure cylinders. In addition, our fluid-handling products, such as tubing, valve, fittings and drum products, are used to safely store, transport and dispense volatile and dangerous chemistries, protecting those who work with them.

Total Rewards. Our total rewards program is designed to be attractive and competitive and to enable our employees to reach their highest potential by directly impacting their financial security, career growth opportunities, and the health and well-being of them and their families. We seek to attract and retain talented employees by providing a compelling total rewards package consisting of competitive pay, health and welfare, work-life benefits and financial wellness programs. We design our programs with the core belief that our employees are at their best when they prioritize their emotional and physical health. We review and assess these programs annually. Examples of our benefits include a Global Employee Support Program through which our employees and their families have access to resources in support of their mental and emotional well-being and our Employee Education Assistance Program, which is designed to encourage our employees to continue their education in courses that will help them advance their career at Entegris. We also recently implemented a new global Rewards and Recognition program that aims to recognize and reward the outstanding achievement of individuals within the Company, reinforcing our corporate values, culture and acknowledging the outstanding performance, exceptional efforts and achievements that earn tangible and specific business results.

Talent Development and Training. We are committed to the ongoing training and development of our employees. We foster an on-the-job training and development culture by investing in rotational development programs in operations, supply chain, and engineering. We are continuously expanding and delivering technical and leadership training for internal talent through our Entegris Great Leader Profile, Management Achievement, and Supervisor Training programs that are aimed at advancing leadership and management skills for current and future career growth. Employees are provided feedback and continuous development discussions through formal and informal review sessions throughout the year. While we continue to search for new perspectives and insights with external hires, we also seek to provide opportunities for our employees to grow their careers at the Company and regularly fill open vacancies with internal candidates. In addition, management systematically assesses succession planning for certain key positions and reviews our workforce to identify high potential employees for future growth and development.

Oversight. Our Board of Directors, through the Management Development and Compensation Committee, provides oversight on human capital matters through a variety of methods and processes. These include receiving regular updates from our Senior Vice President, Global Human Resources, and facilitating discussion related to human capital management efforts and other initiatives impacting the workforce, health and safety matters, employee survey results, hiring and retention, employee demographics, labor relations, compensation and benefits, succession planning and employee training initiatives. We believe the Board's oversight of these matters helps identify and mitigate exposure to labor and human capital management risks, and is part of the broader framework that guides how we attract, retain and develop a workforce that aligns with our values and strategies.

For additional information on these important initiatives, see our annual corporate social responsibility report on our website at <http://www.Entegris.com> under "About Us - Corporate Social Responsibility."

OUR HISTORY

The Company was incorporated in Delaware on March 17, 2005 in connection with a merger between Entegris, Inc., a Minnesota corporation, and Mykrolis Corporation, a Delaware corporation. On April 30, 2014, the Company acquired ATMI, based in Danbury, Connecticut. On July 6, 2022, the Company acquired CMC Materials, based in Aurora, Illinois. Entegris has been helping its customers solve their critical materials challenges and enhance their manufacturing yields for over 55 years, tracing its corporate origins back to Fluoroware, Inc., which began operating in 1966.

AVAILABLE INFORMATION

Our Internet address is www.entegris.com. On this website, under the “About Us-Investor Relations-Financial Information” section, we post the following filings as soon as reasonably practicable after they are electronically filed with, or furnished to, the U.S. Securities and Exchange Commission (“SEC”): our annual, quarterly, and current reports on Forms 10-K, 10-Q, and 8-K; our proxy statements; any amendments to those reports or statements, and Form SD. All such filings are available on our website free of charge. The SEC also maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The content on our website and any other website as referred to in this Annual Report on Form 10-K is not incorporated by reference into this Annual Report on Form 10-K unless expressly noted.

Item 1A. Risk Factors.

In addition to the other information in this Annual Report on Form 10-K, the following risk factors should be carefully considered in evaluating us and our common stock. Any of the following risks, many of which are beyond our control, could materially and adversely affect our financial condition, results of operations or cash flows or cause our actual results to differ materially from those projected in any forward-looking statements. We may also face other risks and uncertainties that are not presently known, are not currently believed to be material or are not identified below because they are common to all businesses. Past financial performance may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods. For more information, see “Cautionary Statements” in Item 7 of this Annual Report on Form 10-K.

Risk Factor Summary

Risks Related to Our Business and Industry

- Fluctuations in demand for semiconductors and volume of semiconductor manufacturing.
- Global economic uncertainty, including volatile financial markets, inflation, fluctuations in interest rates, economic recessions, and national debt and bank failures.
- Variability of revenues and operating results.
- Supply chain risks, including partial reliance on sole, single or limited source suppliers.
- Challenges inherent in operating a global business, including managing complex political, legal, regulatory, and operational environments across the jurisdictions in which the Company operates.
- Regional and global instabilities and hostilities, including the ongoing conflicts between Ukraine and Russia, and between Israel and Hamas.
- The impact of export controls, economic sanctions and other similar restrictions.
- Customer concentration.
- Continuing innovation and introduction of new products.
- Risks related to competition.
- Manufacturing interruptions or delays and other operational disruptions.
- Information technology (“IT”) system failures, network disruptions, data breaches, and other cybersecurity threats.
- The use of hazardous materials in our operations.
- The impact of tariffs, additional taxes, and other protectionist measures.
- Goodwill impairment.
- Loss of key employees.
- Our ability to obtain, protect, and enforce intellectual property rights.
- Environmental, social, and governance commitments.

Risks Related to Government Regulation

- The impact of being subject to numerous rapidly evolving environmental laws and regulations across many jurisdictions.
- Risks related to the regulatory environment, including compliance costs and being subject to potentially inconsistent or conflicting regulations.
- Changes in taxation or adverse tax rulings.
- The impact of government incentives, including added operational complexity and competition.

Risks Related to Our Indebtedness

- The impact of our indebtedness, including our ability to obtain future financing.
- Risks related to our ability to generate sufficient cash to service our indebtedness.
- Restrictions on our operations as a result of the terms of the Amended Credit Agreement (as defined below) and the Indentures (as defined below).

Risks Related to Owning our Common Stock

- The volatility of the price of our common stock.
- Changes in capital allocation strategy.
- Provisions in our charter documents and Delaware law may delay or prevent us from being acquired.

General Risks

- Significant competition.
- Our ability to successfully acquire or integrate other businesses, form joint ventures, or divest businesses.
- The impact of climate change, including changes in market dynamics and stakeholder expectations, and unexpected operational disruptions.

Risks Related to Our Business and Industry

Our revenue is primarily dependent upon demand from the global semiconductor ecosystem and fluctuations in demand for semiconductors and the overall volume of semiconductor manufacturing may decrease demand for our products and may adversely affect our business.

Our revenue is primarily dependent upon demand from the global semiconductor ecosystem. The semiconductor industry has historically been, and is likely to continue to be, cyclical with periodic downturns, resulting in decreased demand for our products, which has negatively impacted our results of operations in the past and could do so again in the future. Factors that may negatively impact the demand for our solutions include, but are not limited to, decreased consumer spending; macroeconomic uncertainty; slow or negative economic growth; customer inventory corrections; demand trends for different types of electronic devices such as logic versus memory integrated circuit devices, or digital versus analog IC devices; the various technology nodes at which those products are manufactured; customers' rate of use of our consumables products; customers' device architectures and specific manufacturing processes; the short order to delivery time for our products; quarter-to-quarter changes in customer order patterns; market share and competitive losses; and pricing changes by us and our competitors. Furthermore, our limited visibility of future customer orders makes it difficult for us to predict industry trends.

During downturns in the semiconductor industry, which can occur suddenly, we typically experience greater pricing pressure and shifts in product and customer mix, which can adversely affect our gross margin and net income. The semiconductor industry is also affected by seasonal shifts in demand, and as a result, we have in the past and may experience in the future short-term fluctuation in our results of operations from one period to the next. We are unable to predict the timing, duration or severity of any current or future downturns in the semiconductor industry. Furthermore, the semiconductor industry is subject to rapid advancements and demand for new and emerging technologies, such as artificial intelligence. If we do not have, or are unable to develop, products and solutions that are utilized to manufacture semiconductors that enable new end-user demand trends, we may not be able to grow our revenue as fast as anticipated and our results of operations may be impacted.

Global economic uncertainty may materially and adversely affect our business, financial condition and results of operations.

Uncertain and volatile economic conditions, including uncertain and volatile financial markets, inflation, fluctuating interest rates, economic slowdowns and/or recessions, national debt and bank failures, could materially and adversely impact our operating results. Such uncertain and volatile conditions in any of our key sales or manufacturing regions can cause or exacerbate negative trends in business and consumer spending, which, in turn, have historically had a negative impact on customer demand for our products and costs of manufacturing and delivering our products.

These uncertain and volatile economic conditions can cause material adverse changes in our results of operations and financial condition, including:

- a decline in demand for our products, which would have an immediate and potentially long-lasting negative impact on our revenues;
- an increase in reserves for accounts receivable due to our customers' inability to pay us;

- lower utilization of our manufacturing facilities, which could lead to lower margins;
- an increase in write-offs for excess or obsolete inventory that we cannot sell;
- potential impairment charges relating to goodwill, intangible assets, manufacturing equipment or other long-lived assets, to the extent that any downturn indicates that the carrying amount of the asset may not be recoverable;
- limiting our suppliers' ability to deliver parts and raw materials, which would negatively affect our ability to manage operations, manage our costs and sell our products;
- consolidation or strategic alliances among other suppliers to semiconductor manufacturers, which could adversely affect our ability to compete effectively;
- greater challenges in forecasting operating results, making business decisions and identifying and prioritizing business risks;
- additional cost reduction efforts, including additional restructuring activities, which may adversely affect our ability to capitalize on opportunities; and
- limitations on our ability to access cash maintained in our bank accounts as a result of bank failures, which could affect our ability to manage our operations.

Our revenues and operating results have fluctuated in the past and may do so in the future, which could impact our stock price.

Our revenues and operating results may fluctuate significantly from quarter-to-quarter or year-to-year due to a number of factors, many of which are outside our control. A lower volume of sales can have a large and disproportionate impact on our profitability. For example, to remain competitive in the semiconductor industry, we have in the past, and will likely in the future, maintain or increase our ER&D activity and invest in our infrastructure, even during downturns and periods of slower demand. Additionally, if we do not, or are unable to, adequately anticipate changes in our business environment, we may lack the infrastructure, manufacturing capacity and resources to scale up our business to meet customer expectations and compete successfully during a period of growth. Conversely, we may expand our capacity too rapidly, resulting in excess fixed costs and lower profitability. Because some of our expenses are fixed in the short term, a change in the timing of revenue or the amount of profit we generate from a small number of transactions can unfavorably affect operating results in a particular period. Factors that may cause our financial results to fluctuate unpredictably include:

- legal, tax, accounting or regulatory changes (including changes in import/export regulations and tariffs, such as regulations imposed by the U.S. government restricting exports to China) or changes in the interpretation or enforcement of existing requirements;
- trends in the semiconductor industry, macroeconomic and market conditions and geopolitical uncertainty, including impacts caused by the Russian invasion of Ukraine, the war between Israel and Hamas, conflict and resulting political instability in the Middle East or bank failures;
- customer considerations, including the size and timing of customer orders, customers' decisions to accelerate, decelerate or delay shipments, customers' decisions on how to manage their inventory, customers' rate of replacement of our consumable products or their decisions to delay expansion projects, and the consolidation of our customers, which may impact their future purchasing decisions;
- procurement shortages, increased prices, the failure of suppliers to perform their obligations and additional expenses we may incur to respond promptly to mitigate any supply shortages or other supplier problems;
- changes in our capital expenditure requirements, such as our new facilities in Taiwan and Colorado, and the schedule and timing, including potential delays, thereof;
- unanticipated manufacturing difficulties;
- changes in average selling prices, customer mix and product mix;
- our ability to develop, introduce and market new, enhanced and competitive products in a timely and cost-effective manner;
- our competitors' introduction of new products;
- disruptions in transportation, communication, demand, information technology ("IT") or supply resulting from factors outside of our control, including strikes, acts of God, wars, terrorist activities, international conflict and natural or man-made disasters; and
- foreign currency exchange rate fluctuations.

Interruptions in our supply chain, including those from our sole, single and limited source suppliers, could affect our ability to manufacture our products and meet demand, which, in turn, could have an adverse effect on our revenue and results of operations.

Our ability to increase sales of our products depends in part upon our ability, in a very short timeframe, to ramp up our manufacturing capacity and to mobilize our supply chain. If we are unable to do so, our customers could obtain products from our competitors, which would reduce our market share, harm our reputation as a trusted partner and impact our results of operations. Ensuring a robust and resilient supply chain is critical for us to meet the demand, quality and technological requirements of our customers. We rely on the timely delivery of parts, materials and services, including components and subassemblies, from our suppliers and contract manufacturers.

The Company's strategies to limit its reliance on single, sole or limited source suppliers and utilize alternative sources are not feasible or practical in all circumstances. For example, we rely on single, sole or limited source suppliers for certain raw materials that are critical to the manufacturing of our products, such as plastic polymers, filtration membranes, abrasive particles, petroleum coke and other materials. If we were to lose any one of these or other critical sources, or there is an industry-wide increase in demand for, or the discontinuation of, raw materials or other components used in our products, it could be difficult for us, or we may be unable, to find an alternative supplier to provide certain raw materials and components, in which case our operations could be adversely affected.

Surge in demand for semiconductors and other factors outside of our control have resulted in, and may in the future result in, a shortage of raw materials and components needed to manufacture and deliver our products, higher raw materials costs, costly and time-consuming re-qualification of products manufactured with new raw materials and delays in, and unpredictability of, shipments due to transportation interruptions. These results could harm our reputation or the competitiveness of our products. Such shortages, delays and unpredictability have adversely impacted, and may impact in the future (1) our suppliers' ability to meet our demand requirements, (2) our manufacturing operations, (3) our ability to meet customer demand, (4) our gross margins and (5) our other operating results. Our actions to counteract adverse impacts to our gross margins and other operating results could be unsuccessful or reduce demand, which would adversely impact our revenue. Additionally, our suppliers may not have the capacity to meet increases in our demand for raw materials and other components, in turn, making us unable to meet customer demand for our products. If our suppliers or sub-suppliers are unable to maintain their operations, due to operational restrictions or financial hardship caused by an economic slowdown or recession, we may increase our safety stocks of raw materials or components or alter our payment terms with such suppliers, including prepaying for raw materials, which could put downward pressure on our cash flow.

Further, increased restrictions imposed on a class of chemicals known as per- and polyfluoroalkyl substances ("PFAS"), which are used in a number of products, including parts and materials that are incorporated into our products, may negatively impact our supply chain due to the potentially decreased availability, or non-availability, of PFAS-containing products. Proposed regulations under consideration could require that we transition away from the usage of PFAS-containing products, which could adversely impact our business, operations, revenue, costs, and competitive position. Suitable replacements for PFAS-containing parts and materials may not be available at similar performance and costs, or at all.

Because a significant amount of our sales and manufacturing activity occurs outside the U.S., we are exposed to risks inherent in operating a global business.

Sales to customers outside the U.S. accounted for approximately 79%, 75% and 76% of our net sales in 2024, 2023 and 2022, respectively. We anticipate that international sales will continue to account for a majority of our net sales. In addition, a number of our key domestic customers derive a significant portion of their revenues from sales in international markets. We also develop and manufacture a significant portion of our products outside the U.S. and depend on international suppliers for many of our parts and raw materials. We intend to continue to maintain extensive sales, product development and manufacturing operations internationally, which are subject to a number of risks, uncertainties and potential costs that could adversely affect our revenue, profitability and reputation, including:

- changes and uncertainties with respect to trade and export regulations (including new and changing regulations for exports of certain technologies to China), trade policies and sanctions, tariffs, international trade disputes and any retaliatory measures, which impact countries in which we conduct significant business, which could (1) impose

additional costs on our operations, (2) limit our ability to operate our business and (3) adversely impact us, our customers or our suppliers;

- positions taken by governments or governmental agencies regarding national, commercial and/or security issues posed by the development, sale or export of certain raw materials, products and technologies;
- geopolitical tensions or conflicts, such as Russia's invasion of Ukraine, the ongoing conflict in the Middle East and increasing tensions between China and Taiwan and between China and the U.S., and other political and economic instability and uncertainty;
- cybersecurity incidents;
- challenges in hiring and integrating workers in different countries;
- challenges in managing a diverse workforce with different experience levels, languages, cultures, customs, business practices and worker expectations, along with differing employment practices and labor issues;
- challenges of maintaining appropriate business processes, procedures and internal controls and complying with legal, environmental, health and safety, anti-bribery, anti-corruption, trade compliance, data privacy, cybersecurity and other regulatory requirements that vary by jurisdiction;
- challenges in developing relationships with local customers, suppliers and governments;
- fluctuating pricing and availability of raw materials and supply chain interruptions or slowdowns, including as a result of difficulties, financial or otherwise, faced by segments of the transportation industry;
- public health crises;
- expense and complexity of complying with U.S. and foreign import and export regulations, including the ability to obtain and renew required import and export licenses;
- fluctuations in interest rates and currency exchange rates, including the relative strength or weakness of the U.S. dollar against foreign currencies that are important to our business;
- liability for foreign taxes assessed at rates higher than those applicable to our domestic operations;
- imposition of a global minimum tax rate, including by the Organization of Economic Co-operation and Development ("OECD");
- challenges and costs associated with the protection of our intellectual property throughout the world;
- challenges associated with managing global and regional third-party service providers, including certain engineering, software development, manufacturing, IT and other functions;
- customer or government efforts to encourage operations and sourcing in a particular country, such as Korea or China, including efforts to develop and grow local competitors, require local manufacturing, and provide special incentives to government-backed local customers to buy from local competitors; and
- impacts of natural disasters and extreme and chronic weather events on our operations and those of our customers and suppliers, which may be exacerbated by climate change.

In the past, these factors have disrupted our operations and increased our costs, and we expect that these factors will continue to do so in the future. Furthermore, there is inherent risk, based on the complex relationships among China, Japan, Korea, Taiwan, and the U.S., that political, diplomatic and national security influences could lead to trade disputes, impacts and/or disruptions, in particular those affecting the semiconductor industry. This can adversely affect our business with China, Japan, Korea, and/or Taiwan and potentially the entire Asia Pacific region or global economy. A significant trade dispute, impact and/or disruption in any area where we do business could have a materially adverse impact on our future revenue and profits.

Export controls, economic sanctions, and other similar restrictions may limit our ability to sell our products to certain customers, require us to obtain governmental licenses, put the Company at a competitive disadvantage both domestically and internationally and expose us to additional legal liability, all of which could harm our business and financial condition.

We are subject to export control and economic sanctions laws and regulations that restrict the delivery of some of our products and services to certain countries (and nationals thereof), to certain end users, and for certain end uses. These restrictions may prohibit the sale of certain of our products, services and technologies, and they may require us to obtain a license from the U.S. government before delivering the controlled item or service. Obtaining export licenses may be difficult, costly and time-consuming, and we may fail to receive licenses that we apply for on a timely basis or at all. We must also comply with export control and economic sanctions laws and regulations imposed by other countries. Our export and trade control compliance program may be ineffective or circumvented, exposing us to legal liabilities. Compliance with these laws could significantly

limit our sales in the future. Changes in, and responses to, U.S. trade controls could reduce the competitiveness of our products and cause our sales to decline, which could have a material adverse effect on our business, financial condition and results of operations.

Over the last several years, the U.S. government has significantly expanded export controls on certain technologies and commodities to certain markets, particularly with respect to semiconductor and other high technology exports to China, a market which represented approximately 21% of our sales in 2024. These and other regulations have reduced our ability to sell our products to customers in China and it is possible future regulation could further reduce demand for our products. As a result of these restrictive measures, certain of our customers have made efforts to source products domestically in order to mitigate perceived risks to their supply chain. Furthermore, these restrictive measures have incentivized Chinese domestic semiconductor companies to work more closely with local Chinese companies and companies headquartered outside of the United States in an effort to enable these companies to enhance the technology-level and quality of their products and, as a result, to better compete with our products. We may be unable to continue to compete favorably against these local and foreign competitors. If these efforts are successful, are widespread amongst our customers and expand to our products and solutions broadly, overall global demand for our products may be reduced, which could have a material adverse effect on our business, financial condition and results of operations. Furthermore, government authorities may take retaliatory actions, impose conditions that require the use of local suppliers or partnerships with local companies, increase tariff and other customs costs or require the license or other transfer of intellectual property, which could have a significant adverse impact on our business.

A significant portion of our sales is concentrated on a limited number of key customers, and our net sales and profitability may materially decline if we were to lose one or more of these customers.

Sales to a limited number of large customers constitute a significant portion of our overall revenue, shipments, cash flows, collections and profitability. Our top ten customers accounted for 48%, 43% and 43% of our net sales in 2024, 2023 and 2022, respectively. We would have no or limited contractual recourse if our customers decided to stop buying and using our products in their manufacturing processes with limited advance notice to us. The cancellation, reduction or deferral of purchases of our products by any one of these customers could significantly reduce our revenues in any particular quarter. If we were to lose any of our significant customers, if our products are not specified for our significant customers' products or if we suffer a material reduction in their purchase orders, our revenue could decline and our business, financial condition and results of operations could be materially and adversely affected. Due to the long design and development cycle and lengthy customer product qualification periods required for most of our products, we may be unable to replace these customers quickly, if at all. In addition, our principal customers hold considerable purchasing power and may be able to negotiate sales terms that result in decreased pricing, increased costs, lower margins and/or limit our ability to share jointly-developed technology with others. The semiconductor industry may continue to undergo consolidation, and if any of our customers merge or are acquired, we may experience lower overall sales to, or lower profitability from sales to, the merged or combined companies.

Our customer base is also geographically concentrated, particularly in Taiwan, Korea, Japan, China and the U.S. As a result, export regulations or other trends that apply to customers in certain countries, such as those in China, have exposed and may further expose our business and results of operations to greater volatility. The geographic concentration of our customer base could shift over time as a result of changes in technology and competitive landscape, as well as government policy and incentives to develop regional semiconductor industries.

If we are unable to anticipate and respond to rapid technological change and customer requirements by continuing to innovate and introduce new and enhanced products and solutions, we may experience a loss of market share, decreased sales, revenue, profitability and damage to our reputation.

We operate in the semiconductor industry, which is subject to rapid technological change, changing customer requirements and frequent new product introductions. In our industry, the first company to introduce an innovative product that addresses an identified market need will often have a significant advantage over competing products. Following development, it may take several years for sales of a new product to reach a substantial level, if ever. If a product concept does not progress beyond the development stage or only achieves limited acceptance in the marketplace, we may not receive a direct return on our expenditures, which may be significant, we may lose market share and our revenue, and profitability may decline. In the past, we incurred significant impairment charges for capital expenditures related to developing the capability to manufacture shippers and FOUPs for 450 millimeter wafers, which major semiconductor manufacturers announced that they would not initiate manufacturing for the foreseeable future.

We believe that our future success will depend upon our ability to continue to develop novel, mission-critical solutions to maximize our customers' manufacturing yields and enable higher performance semiconductor devices. A failure to successfully anticipate and respond to technological changes by developing, marketing and manufacturing new products or enhancements to our existing products could harm our business prospects, limit our market share, result in unanticipated costs and significantly reduce our sales. The new products and technology we choose to develop and market may also not be successful. In addition, if new products have reliability or quality problems, we may experience reduced orders, higher manufacturing costs, delays in acceptance and payment, additional service and warranty expense and damage to our reputation.

Manufacturing interruptions or delays, or other disruptions to our operations, could adversely affect our business, financial condition, results of operations and reputation.

Our manufacturing processes are complex and require the use of expensive and technologically sophisticated equipment and materials. We have, on occasion, experienced manufacturing difficulties, such as critical equipment breakdowns, delayed ramp up of newly constructed or expanded manufacturing facilities or the introduction of impurities in the manufacturing process. Any future difficulties could cause lower yields, make our products unmarketable and/or delay deliveries to customers. In addition, any modification to the manufacturing process of a product, including changes designed to improve manufacturing yields, process stability and product quality, could require that the product be re-qualified by customers, which can increase our costs and delay or prevent our ability to sell this product to our customers. We have moved, and we may in the future move, the manufacture of certain products from one plant to another. If we fail to transfer and re-establish the manufacturing processes in the destination plant efficiently and effectively, we may not be able to meet customer demand, we may lose credibility with our customers and our business may be harmed. Even if we successfully move our manufacturing processes, we may not achieve the anticipated levels of cost savings or efficiencies, if any. These and other manufacturing difficulties may result in the loss of sales and exposure to warranty and product liability claims.

Disruptions to our operations may be caused by factors outside of our control, including severe weather events and natural catastrophes, civil unrest, outbreaks of disease, and terrorist actions. Our continuity plans may be insufficient to mitigate the impact of disruptions to our operations, and any prolonged disruption may impede our ability to manufacture and deliver products to our customers, resulting in an adverse impact on our business and results of operations.

We may be subject to IT system failures, network disruptions and cybersecurity and data breaches, which could damage our reputation and adversely affect our financial condition, results of operations and cash flows. New laws and regulations regarding data privacy may also increase our costs.

In conducting our business, we use, collect and store sensitive data, including our financial information, intellectual property, confidential information, proprietary business information and personally identifiable information of our employees and others, as well as similar information of our customers, suppliers and business partners. We maintain this information in our data centers, on our networks and on IT systems owned and maintained by third parties. The secure processing, maintenance and transmission of this information is critical to our operations. All IT systems are subject to disruptions, security breaches, outages and failures, which may be caused by a variety of internal and external factors. We and our third-party suppliers have experienced, and expect to continue to be subject to, cybersecurity threats and incidents ranging from employee or contractor error or misuse to individual attempts to gain unauthorized access to systems, to sophisticated and targeted measures known as advanced persistent threats. Cybersecurity threats may target us directly or indirectly through our third-party providers and global supply chain. Cybersecurity attacks are increasing in number and the attackers are increasingly organized and well-financed, or at times supported by state actors. Geopolitical tensions or conflicts, such as Russia's invasion of Ukraine and increasing tensions with China, have created a heightened risk of cybersecurity attacks. Artificial intelligence capabilities are and will be used by threat actors to identify vulnerabilities and craft increasingly sophisticated cybersecurity attacks, making them even more difficult to defend against by creating more effective phishing emails or social engineering and by exploiting vulnerabilities in electronic security programs utilizing false image or voice recognition. The use of artificial intelligence by us, our customers, suppliers and other business partners and third-party providers may introduce vulnerabilities onto our IT systems. We may be unable to anticipate, prevent or remediate future attacks, vulnerabilities, breaches or incidents and in some instances we may be unaware of vulnerabilities or cybersecurity breaches or incidents or their magnitude and effects, particularly as attackers are increasingly able to circumvent controls and remove forensic evidence. We continue to devote significant resources to network security, threat monitoring and other measures to protect our systems and data from unauthorized access or misuse, and we may be required to expend greater resources in the future, especially in the face of evolving and increasingly sophisticated cybersecurity threats and laws, regulations, contractual and other actual and asserted obligations to which we are or may become subject relating to privacy, data protection, and cybersecurity.

IT system failures, network disruptions and breaches of data security could (1) cause disruption in our operations, issues with customer communication and order management, the unauthorized or unintentional disclosure of sensitive information, or disruptions in our transaction processing or (2) undermine the integrity of our disclosure controls and procedures and our internal control over financial reporting, which could affect our reputation, result in significant liabilities and expenses, adversely affect our ability to report our financial results in a timely manner and could have a material adverse effect on our financial condition, results of operations and cash flows.

Our efforts to comply with current and evolving laws, regulations and other obligations, such as contractual or commercial obligations from our customers or other third parties, concerning privacy, cybersecurity, and data protection, increase our compliance costs and could result in significant additional expenses. Any actual or alleged failure to comply with these obligations could result in inquiries, investigations, and other proceedings against us by regulatory authorities or other third parties.

Our operations use hazardous materials that expose us to various risks, including potential liability for personal injury and potential remediation obligations.

Our operations involve, and we are exposed to the risks associated with, the use and manufacture of hazardous materials. In particular, we manufacture specialty chemicals, which is an inherently hazardous process that may result in accidents, and store and transport hazardous raw materials, products and waste in, to and from various facilities. Potential risks that may disrupt our operations or expose us to significant losses and liabilities include explosions and fires, chemical spills and other discharges, releases of toxic or hazardous substances or gases, and pipeline and storage tank leaks and ruptures. These and other hazards may result in (1) liability for personal injury, death, damage to property and contamination of the environment; (2) suspension of operations; (3) the imposition of civil or criminal fines, penalties and other sanctions; (4) cleanup costs; (5) claims by governmental entities or third parties; (6) reputational harm; (7) increases in our insurance costs; and (8) other adverse impacts on our results of operations. Moreover, a failure of one of our products at a customer site could interrupt the business operations of the customer. For example, while we believe that our SDS and VAC delivery systems are safe to transport, store and deliver toxic gases, any leakage could cause serious damage, including injury or death, to any person exposed to those toxic gases, potentially creating significant product liability exposure for us. Our insurance coverage may be inadequate to satisfy any such liabilities, and our financial results or financial condition could be adversely affected.

Tariffs, additional taxes, and other protectionist measures resulting from international trade disputes, strained international relations and changes to foreign and national security policy could increase our procurement and manufacturing costs, reduce the competitiveness or availability of our products and have other adverse effects on our operations.

Tariffs, additional taxes, trade barriers and other measures may increase raw material and manufacturing costs, decrease margins, affect customer ordering patterns, reduce the competitiveness of our products or inhibit our ability to sell products or purchase necessary equipment and supplies, any of which could have a material adverse effect on our business, results of operations or financial condition. While significant attention has been paid to protectionist actions between the U.S. and China in recent years, some of which have impacted certain raw materials we use, it is anticipated that the U.S. will employ tariffs and other countermeasures broadly in pursuit of its political and economic strategies and that other countries may take similar or related actions.

We carry a significant amount of goodwill on our balance sheet.

As of December 31, 2024, we had goodwill of \$3,943.6 million. The future occurrence of a potential indicator of impairment, such as a significant adverse change in business climate, an adverse action or assessment by a regulator, unanticipated competition, a material negative change in relationships with significant customers, strategic decisions made in response to economic or competitive conditions, loss of key personnel, or a more-likely-than-not expectation that a reporting unit or a significant portion of a reporting unit will be sold or disposed of, could result in goodwill impairment charges. We have recorded goodwill impairment charges in the past, and such charges have materially affected our historical results of operations. For additional information, see Note 9 – Goodwill and Intangible Assets to the accompanying consolidated financial statements.

Loss of any of our key personnel could harm our business, and our inability to attract and retain new qualified personnel could inhibit our ability to operate and grow our business successfully.

Many of our key personnel have significant experience in the semiconductor industry and deep technical expertise. The loss of our key employees or an inability to attract, hire, train, motivate and retain qualified and skilled employees, particularly research and development and engineering personnel, could cause business interruptions and inhibit our ability to operate and

grow our business. As the semiconductor industry has grown in recent years, competition for qualified talent, particularly those with significant industry experience, has intensified. Other factors impacting our ability to attract and retain key employees include the attractiveness of our compensation and benefit programs, global economic or political conditions, the ability to obtain necessary authorizations for workers to provide services outside their home countries and our ability to continue to foster a challenging and rewarding work environment. We have experienced in the past, and may in the future continue to experience, an increasingly competitive and constrained labor market, which may limit our ability to add headcount required to meet our customers' demand, decrease our productivity due to an influx of inexperienced workers and cause our labor costs to increase and our profitability to decline. As a result, the difficulty and costs associated with attracting and retaining employees has risen and may continue to rise.

If we fail to obtain, protect and enforce intellectual property rights, our business and prospects could be harmed.

Our future success and competitive position depend in part upon our ability to obtain, maintain and enforce intellectual property rights. We rely on patent, trade secret and trademark laws as well as confidentiality agreements to protect many of our major product platforms. Even if patents are issued in respect of our patent applications, these patents may nonetheless (1) expire; (2) be challenged, invalidated, circumvented, rendered unenforceable or otherwise compromised by third parties; or (3) fail to provide us with any competitive advantage. We may lose trade secret protections as a result of actions or omissions by us, our employees, or third parties. Our confidentiality agreements (including confidentiality agreements entered into between us and our employees) may be breached and the remedies for any such breach may be inadequate. Our confidential and proprietary information and technology may also be replicated or obtained through lawful means. Replication of our intellectual property or the infringement or misappropriation of our intellectual property rights could result in uncompensated lost market and revenue opportunities, which could adversely affect our business and financial condition. Our failure to monitor and ensure the proper use of our data, confidential information, and intellectual property in the training and operation of generative artificial intelligence products may result in the loss of intellectual property and raise complex compliance, intellectual property and other issues.

We have initiated, and may initiate in the future, litigation in order to enforce our intellectual property rights, protect our trade secrets, and determine the validity and scope of the proprietary rights of others. From time to time, third parties have also asserted, and may continue to assert, intellectual property claims against us and our products. In the past, intellectual property-related litigation has caused us to expend significant financial and other resources. In the future, such litigation could (1) impose substantial costs and cause the diversion of resources and the attention of management; (2) require us to pay damages or royalties; (3) require us to alter our products or processes, or obtain a license to continue selling the impacted product, which we may be unable to do on commercially acceptable terms, or at all; (4) severely harm our reputation and competitive position; and (5) negatively affect our sales, profitability and prospects.

Implementation of, and reporting on, our environmental, social and governance commitments could result in additional costs, and our inability to achieve these commitments could have an adverse impact on our reputation and performance.

From time to time we communicate our strategies, commitments and targets related to sustainability, greenhouse gas emissions, the sustainability of our products, human rights, and other environmental, social and governance matters. These strategies, commitments and targets reflect our current plans and aspirations, and we may be unable to achieve them. Changing customer sustainability requirements, including increasing customer demand for sustainable products, as well as actions taken to achieve our sustainability targets, could cause us from time to time to alter our manufacturing, operations or products, and incur substantial additional expense. Any failure or perceived failure to timely meet these sustainability requirements or targets could adversely impact the demand for our products and subject us to significant costs and liabilities and reputational risks that could adversely affect our business, financial condition and results of operations. In addition, standards and processes for measuring and reporting greenhouse gas emissions and other sustainability metrics may change over time, increase our costs and result in inconsistent data or significant revisions to our strategies, commitments and targets, and our ability to achieve them. We also are or may become subject to new climate and sustainability laws and regulations, such as the State of California's new climate change disclosure rules, the EU's Corporate Sustainability Reporting Directive and the SEC's rules on climate-related risks. Compliance with such laws and regulations, as well as increased scrutiny from regulators, customers and other stakeholders in our sustainability practices, could result in additional costs and expose us to new risks, including reputational risks. Any scrutiny of our greenhouse gas emissions or other sustainability disclosures or our failure to achieve related strategies, commitments and targets, or our failure to disclose our sustainability measures consistent with applicable laws and regulations or to the satisfaction of regulators or our stakeholders, could negatively impact our reputation or performance.

Risks Related to Government Regulation

We are subject to a variety of rapidly evolving environmental laws and regulations that could cause us to incur significant liabilities and expenses.

The wide variety of federal, state, local and non-U.S. regulatory requirements relating to the design, manufacture, sale, shipping, import, export and use of our products, as well as the release, use, storage, treatment, transportation, discharge, disposal and remediation of, and human exposure to, hazardous chemicals, could result in future liabilities, remediation efforts or the suspension of production or shipment. These requirements are dynamic and have become stricter over time. These laws and regulations, among others, increase the complexity and costs of operating our facilities and manufacturing and transporting our products. Further changes to or our failure to comply with these and similar regulations could (1) restrict our ability to expand, build or acquire new facilities, (2) require us to acquire costly control equipment, (3) cause us to incur expenses associated with remediation of contamination, (4) cause us to modify our product design, operations or manufacturing or shipping processes or (5) otherwise increase our cost of doing business, which may have a negative impact on our financial condition, results of operations and cash flows. In addition, the potential adoption of new laws, rules or regulations related to climate change and the use or sale of PFAS-containing products poses risks, including subjecting us to future costs and liabilities, that could harm our results of operations or affect the way we conduct our businesses. For example, new or modified regulations could require us to make substantial expenditures to enhance our environmental compliance efforts.

We are exposed to various risks from our regulatory environment, including being subject to potentially inconsistent or conflicting laws and regulations in the jurisdictions in which we operate, international trade-related disputes and compliance costs, which may adversely impact our reputation, financial condition and results of operations.

We are subject to risks related to new, different, inconsistent, or even conflicting laws, rules, and regulations that may be enacted by legislative or executive bodies and/or regulatory agencies in the countries where we operate; disagreements or disputes related to international trade; and the interpretation and application of laws, rules, and regulations. As a public company with global operations, we are subject to the laws of multiple jurisdictions and the rules and regulations of various governing bodies, including those related to health and safety, import and export controls, financial and other disclosures, accounting standards, corporate governance, public procurement and public funding, environment (including those relating to sustainability and climate change), privacy, anti-corruption, such as the Foreign Corrupt Practices Act and other local laws prohibiting corrupt payments to governmental officials or customers, conflict minerals or other social responsibility legislation, employment practices, immigration or travel regulations and antitrust regulations, among others. Each of these laws, rules and regulations imposes costs on our business, including financial costs and potential diversion of our management's attention, and may present risks to our business, including potential fines, restrictions on our actions and reputational damage if we do not fully comply. The volume of changes to such laws, rules and regulations may increase in the countries where we operate.

Changes in or ambiguous interpretations of laws, regulations and standards may create uncertainty regarding compliance matters. Efforts to comply with new and changing regulations have resulted in, and are likely to continue to result in, increased administrative expenses and diversion of management's time and attention from revenue-generating activities to compliance activities. If we are found by a court or regulatory agency not to be in compliance with laws and regulations, our reputation, business, financial condition and/or results of operations could be adversely affected, we may be disqualified or barred from participating in certain activities and we may be forced to modify our operations to achieve full compliance.

Changes in taxation or adverse tax rulings could adversely affect our results of operations.

We operate in many foreign countries and are subject to taxation at various rates and audit by multiple taxing authorities. Our results of operations could be affected by tax audits, changes in tax rates, changes in laws and regulations governing the calculation, location and taxation of earned profit, changes in laws and regulations affecting our ability to realize deferred tax assets on our balance sheet and changes in laws and regulations relating to the repatriation of cash into the U.S. Each quarter, we forecast our tax liability based on our forecast of our performance for the year in each tax jurisdiction. If our performance forecast changes, our forecasted tax liability would also likely change, perhaps materially.

We have undertaken, and expect to continue to undertake, complex internal reorganizations of our foreign subsidiaries in order to rationalize and streamline our foreign operations, focus our management efforts on certain local opportunities and take advantage of favorable business conditions in certain localities. These or any future reorganizations could result in adverse tax consequences in one or more jurisdictions, which could adversely impact our profitability from foreign operations and result in a material reduction in our results of operations.

Various jurisdictions in which we operate are considering changes to their tax laws. For example, the OECD introduced the Base Erosion and Profit Shifting 2.0 project that seeks to impose a global minimum income tax rate of 15%. Any tax reform adopted in any foreign jurisdiction may exacerbate the risks described above.

We are exposed to risks related to government incentives and other agreements that may involve government entities, such as increases in the complexity and costs of our operations, which could adversely affect our business, financial condition and results of operations.

From time to time, we may receive and enter agreements for grants, tax benefits and other incentives from national, state and local governments in jurisdictions throughout the world designed to encourage us to establish, maintain or increase our investment, research and development and production activities in those jurisdictions. Our future business plans are impacted by obtaining these government incentives, which may take various forms, including grants, subsidies, loans, and tax arrangements, and typically require us to achieve or maintain certain levels of investment, capital spending, employment, technology deployment or development milestones, construction or production milestones, or research and development activities to qualify for such incentives or could restrict us from undertaking certain activities. Compliance with these requirements may add complexity to our operations and increase our costs, and a failure to comply could result in cancellation of agreements or transactions, investigations, civil and criminal penalties, forfeiture of profits, reduction, termination or clawback of any funding, suspension or debarment from doing business with the government, or other penalties, any of which could have a material and adverse effect on our business, financial condition and results of operations. For example, we have entered into a direct funding agreement with the U.S. Department of Commerce to receive a grant under the U.S. CHIPS and Science Act of 2022. We may be unable to successfully achieve the milestones and ancillary requirements to qualify for these incentives or such incentives may otherwise be withheld. We also may be unable to obtain future incentives, which may put us at a disadvantage against competitors, especially foreign competitors that may benefit from such incentives in the countries in which they are headquartered.

Risks Related to Our Indebtedness

We have a substantial amount of indebtedness and may in the future incur substantially more debt, each of which could adversely affect our ability to obtain financing in the future and react to changes in our business.

As of December 31, 2024, we had an aggregate principal amount of \$4.0 billion of indebtedness outstanding, including the \$0.8 billion from our senior secured term loan facility due 2029 (the “Term Loan Facility”), \$1.6 billion aggregate principal amount of the 4.75% senior secured notes due April 15, 2029, \$1.7 billion aggregate principal amount of the 5.95% senior unsecured notes due June 15, 2030, our 4.375% senior unsecured notes due April 15, 2028, and our 3.625% senior unsecured notes due May 1, 2029 (collectively, the “Notes”). In addition, we have approximately \$575.0 million of unutilized capacity under our senior secured revolving credit facility due 2027 (the “Revolving Facility”). We refer to the Term Loan Facility and the Revolving Facility as the “Credit Facilities”. The credit agreements that govern the Credit Facilities are referred to collectively as the “Amended Credit Agreement”. Further, we may incur significant additional secured and unsecured indebtedness in the future.

Although the indentures governing the Notes (the “Indentures”), and the Amended Credit Agreement restrict our ability to incur additional indebtedness, the restrictions have a number of significant qualifications and exceptions. For example, the Amended Credit Agreement provides that we can request additional loans and commitments up to the greater of \$1.1 billion or 100% of our EBITDA, as well as additional amounts if our secured net leverage ratio is less than a specified ratio. Further, these restrictions do not prevent us from incurring monetary obligations that do not constitute indebtedness. If we add new indebtedness and other monetary obligations to our current debt levels, the related risks that we now face would intensify.

Our debt could have important consequences, including:

- limiting our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate purposes;
- requiring a substantial portion of our cash flow to be dedicated to debt service payments instead of other purposes;
- increasing our vulnerability to adverse changes in general economic, industry and competitive conditions;
- exposing us to increased interest expense for borrowings with variable interest rates, including borrowings under the Credit Facilities; and
- placing us at a disadvantage compared to other, less leveraged competitors or competitors with comparable debt having more favorable terms.

We may be unable to generate sufficient cash to service our indebtedness and may be forced to take other actions, which may not be successful, to satisfy our obligations under our indebtedness.

We may be unable to maintain sufficient cash flow from operating activities to permit us to pay the principal of, premium, if any, and interest on our indebtedness. Our ability to make scheduled payments on or to refinance our debt obligations depends on our financial condition and operating performance and the condition of the capital markets, which are subject to prevailing economic, industry and competitive conditions, as well as many financial, business, legislative, political, regulatory and other factors beyond our control. If our cash flow and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems, be forced to reduce or delay investments and capital expenditures, dispose of material assets or operations, seek additional debt or equity capital or restructure or refinance our indebtedness, any of which could have a material adverse effect on our business, financial position and results of operations. In addition, the level and quality of our earnings, operations, business and management, among other things, will impact the determination of our credit ratings. Any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis may result in a decrease in the ratings assigned to us by the ratings agencies, which may negatively impact our access to the debt capital markets and increase our cost of borrowing. In addition, we may be unable to maintain the current creditworthiness or prospective credit rating of the Company. Any actual or anticipated changes or downgrades in such credit rating may have a negative impact on our liquidity, capital position or access to capital markets and affect our ability to obtain any future required financing on acceptable terms or at all.

Any refinancing of our debt could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. We may not be able to implement any refinancing on commercially reasonable terms or at all and, even if successful, a refinancing may not allow us to meet our scheduled debt service obligations. The agreements governing our indebtedness restrict our ability to dispose of assets and use the proceeds of such dispositions, and we may be unable to consummate any dispositions or generate proceeds sufficient to meet our debt service obligations.

If we cannot make scheduled payments on our debt, holders of the Notes and lenders under the Credit Facilities could declare all outstanding principal and interest to be due and payable, the lenders under the Revolving Facility could terminate their commitments to advance further loans, our secured lenders could foreclose against the assets securing their borrowings and we could be forced into bankruptcy or liquidation.

The terms of the Amended Credit Agreement and the Indentures may restrict our operations, particularly our ability to respond to changes or raise additional funds.

The Amended Credit Agreement contains restrictive covenants that impose significant operating and financial restrictions that may limit our and our restricted subsidiaries' ability to take actions that may be in our long-term best interest, including restrictions on our and our restricted subsidiaries' ability to:

- incur additional indebtedness and guarantee indebtedness;
- pay dividends or make other distributions in respect of, or repurchase or redeem, capital stock;
- prepay, redeem or repurchase certain debt;
- make investments, loans, advances and acquisitions;
- engage in sale-leaseback or hedging transactions;
- create liens on, sell or otherwise dispose of assets, including capital stock of our subsidiaries;
- enter into transactions with affiliates;
- enter into agreements that restrict the ability to create liens, pay dividends or make loan repayments;
- alter the businesses we conduct; and
- merge or sell all or substantially all of our assets or incur a change of control in our capital stock ownership.

Also, the Indentures contain limited covenants, such as a covenant restricting our ability and certain of our subsidiaries' ability to incur certain debt secured by liens, engage in sale-leaseback and incur additional indebtedness by any restricted subsidiary.

In addition, the restrictive covenants under the credit agreement governing the Revolving Facility may, depending on the amount of revolving borrowings, unreimbursed letter of credit drawings and undrawn letters of credit, require us to maintain a secured net leverage ratio, which we may be unable to meet. Our failure to comply with these covenants could result in the acceleration of some or all of our indebtedness, which could lead to bankruptcy, reorganization or insolvency.

Risks Related to Owning our Common Stock

The price of our common stock has been and may remain volatile.

The price of our common stock has been volatile. In 2024, the closing price of our stock on The Nasdaq Global Select Market (“Nasdaq”) ranged from a low of \$97.67 to a high of \$146.48, and, as in past years, the price of our common stock may show even greater volatility in the future. The trading price of our common stock is subject to significant volatility in response to numerous factors, many of which are beyond our control or may be unrelated to our operating results, including the following:

- changes to our financial guidance, as well as potential decreased confidence in any guidance we do provide;
- changes in global economic and geopolitical conditions, including those resulting from trade tensions, rising inflation, and fluctuations in foreign currency exchange and interest rates;
- failure to meet the expectations of securities analysts, which may vary significantly from our actual results;
- changes in financial estimates by securities analysts;
- press releases or announcements by, or changes in market values of, comparable companies;
- high volatility in price and volume in the markets for high-technology stocks;
- public perception of equity values of publicly traded companies;
- fluctuations in our results of operations; and
- other risks and uncertainties described in this Annual Report on Form 10-K and in our other filings with the SEC.

Fluctuations in our results of operations could cause our stock price to decline significantly. Future decreases in our stock price may adversely impact our ability to raise sufficient additional capital in the future, if needed.

We may decrease or discontinue cash dividends and may never adopt a new program to repurchase our shares of common stock.

Future payments of quarterly dividends and any future repurchases of shares of our common stock are subject to capital availability and periodic determinations by our Board of Directors that they are in the best interest of our stockholders and comply with all laws and applicable agreements. Future dividends and any future share repurchases may be affected by, among other factors, potential capital requirements for acquisitions and the funding of our research and development activities; legal risks; changes in federal and state income tax laws or corporate laws; contractual restrictions, such as financial or operating covenants in our debt arrangements; availability of domestic cash flow; and changes to our business model. The amounts of our dividend payments may change from time to time, and we may decide at any time to reduce, suspend or discontinue the payment of dividends or the repurchase of shares. A reduction, suspension or discontinuation of our dividend payments or the cessation of our share repurchase program could have a negative effect on the price of our common stock and may harm our reputation.

Provisions in our charter documents and Delaware law may delay or prevent an acquisition of us, which could decrease the value of our shares.

Our certificate of incorporation, our by-laws and Delaware law contain provisions that could make it harder for a third party to acquire us without the consent of our board of directors. These provisions include limitations on actions by written consent of our stockholders.

Our certificate of incorporation makes us subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits publicly held Delaware corporations from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. This provision could discourage parties from bidding for our shares of common stock and could, as a result, reduce the likelihood of an increase in the price of our common stock that would otherwise occur if a bidder sought to buy our common stock.

Our certificate of incorporation authorizes our Board of Directors to issue, without further stockholder approval, up to 5,000,000 shares of preferred stock in one or more series and to fix and designate the rights, preferences, privileges and

restrictions of the preferred stock, including dividend rights, conversion rights, voting rights, redemption rights and liquidation preferences. The holders of any shares of preferred stock could have preferences over the holders of our common stock with respect to dividends and liquidation rights. Any issuance of preferred stock may have the effect of delaying, deterring or preventing a change in control. Any issuance of preferred stock could decrease the amount of earnings and assets available for distribution to the holders of common stock and could adversely affect the rights and powers, including voting rights, of the holders of common stock. The issuance of preferred stock could have the effect of decreasing the market price of our common stock.

General Risks

Competition from new or existing companies could harm our financial condition, results of operations and cash flow.

We operate in a highly competitive, global industry. We face many domestic and international competitors, some of which have substantially greater manufacturing, financial, research and development and marketing resources than we do. In addition, some of our competitors may have better-established customer relationships than we do, which may enable them to have their products specified for use more frequently and more quickly by these customers. We also face competition from smaller, regional companies that focus on serving customers in their regions. Further, customers continually evaluate the benefits of internal manufacturing versus outsourcing, and a customer's decision to internally manufacture products that we provide may negatively impact us. If we are unable to maintain our competitive position, we could experience downward pressure on prices, fewer customer orders, reduced margins, the inability to take advantage of new business opportunities and a loss of market share, any of which could have a material adverse effect on our results of operations. Further, we expect that existing and new competitors will improve their products and introduce new products with enhanced performance characteristics. The introduction of new products or more efficient production of existing products by competitors could diminish our market share and increase pricing pressure on our products.

Our competitors include companies outside of the U.S., including companies in countries where foreign governments seek to build a domestic-centric semiconductor ecosystem. From time to time, governments around the world may provide incentives or make other investments that could benefit and give competitive advantages to our competitors. Government incentives may not be available to us on acceptable terms or at all. If our competitors can benefit from such government incentives and we cannot, it could strengthen our competitors' relative position and have a material adverse effect on our business.

We may acquire other businesses, form joint ventures or divest businesses, any of which could negatively affect our financial performance.

We intend to continue to engage in business combinations, acquisitions, joint ventures, investments, divestitures or other types of collaborations to (1) address gaps in our product offerings, (2) adjust our business and product portfolio to meet our ongoing strategic objectives, (3) diversify into new and complementary markets, (4) increase our scale or (5) accomplish other strategic objectives. These transactions involve numerous risks to our business, financial condition and operating results, including but not limited to:

- difficulty in identifying suitable acquisition candidates and completing transactions at appropriate valuations, in a timely manner, on a cost-effective basis or at all, due to substantial competition for acquisition targets;
- inability to successfully integrate any acquired businesses into our business operations;
- failure to realize the anticipated synergies or other benefits of any such transaction;
- entry into markets in which we have limited or no prior experience;
- finding acquirors and obtaining adequate value for businesses that no longer meet our strategic objectives;
- difficulties surrounding the disentanglement of a divested business, including the diversion of resources away from our business operations to address such matters;
- inability to complete proposed or pending transactions due to factors such as the failure or inability to obtain regulatory or other approvals, which may be exacerbated by the recent, more aggressive regulatory approaches to merger control globally, such as the July 19, 2023 joint statement of antitrust policy and final rules published on October 10, 2024 concerning changes to the premerger notification process under the Hart-Scott-Rodino Act of 1976 by the Department of Justice and Federal Trade Commission and the April 15, 2023 Provisions on the Review of Concentrations of Undertakings issued by China's State Administration for Market Regulation, among others;

- requirements imposed by government regulators in connection with their review of a transaction, which may include, among other things, divestitures and restrictions on the conduct of our existing business or the acquired business;
- undertaking multiple transactions at the same time in order to take advantage of acquisition or divestiture opportunities that do arise, which could strain our ability to effectively execute and integrate such transactions;
- diversion of management's attention from our day-to-day business due to dedication of significant management resources to such transactions;
- employee uncertainty and lack of focus during the integration process that may also disrupt our business;
- risk of litigation or claims associated with a proposed or completed transaction;
- challenges associated with managing new, more diverse and more widespread operations, projects and people, potentially located in regions where we have not historically conducted or operated our business;
- dependence on unfamiliar or less secure supply chains and inefficient scale of the acquired entity;
- increasing costs of performing due diligence to meet the expectations of investors and government regulators;
- despite our due diligence, we could assume unknown, underestimated or contingent liabilities, such as potential environmental, health and safety liabilities, any of which could lead to costly litigation or mitigation actions;
- an acquired technology or product may have inadequate or invalid intellectual property protection or may be subject to claims of infringement by a third party, which may result in claims for damages and lower than anticipated revenue;
- negative effects on our reported results of operations from dilutive results from operations and/or from future potential impairment of acquired assets, including goodwill, related to acquisitions;
- an acquired company may have inadequate or ineffective internal controls over financial reporting, disclosure controls and procedures, cybersecurity, privacy, environmental, health and safety, anti-bribery, anti-corruption, human resource or other policies or practices, which may require unexpected or additional integration, mitigation and remediation costs;
- reductions in cash or increases in debt to finance transactions, which reduce the cash flow available for general corporate or other purposes, including repayment of existing debt, share repurchases and dividends; and
- difficulties in retaining key employees or customers of an acquired business.

Climate change may have a long-term impact on our business, including by causing disruptions to our operations which may result in decreased revenue and cash flows.

There are inherent climate-related risks wherever our business is conducted. Changes in market dynamics, stakeholder expectations, local, national and international climate change policies, and the frequency and intensity of extreme weather events on critical infrastructure in the U.S. and abroad, all have the potential to disrupt our business and operations. Such events could result in a significant increase in our costs and expenses and harm our future revenue, cash flows and financial performance. Global climate change is resulting in, and may continue to result, in certain natural disasters and adverse weather events, such as drought, wildfires, severe storms, sea-level rise and flooding, occurring more frequently or with greater intensity, which could cause business disruptions and adverse impacts where we operate.

Item 1B. Unresolved Staff Comments.

Not Applicable.

Item 1C. Cybersecurity

Risk management and strategy

As a key supplier in the semiconductor ecosystem, security and risk management of our technology systems and processes is critical to ensuring our ability to serve our customers without interruption.

Management of Cybersecurity Risks

Our management of cybersecurity risks is integrated into our Company-wide enterprise risk management program. As part of this process, our risk management team works closely with our IT department to identify and evaluate potential cybersecurity risks to the Company and to develop controls to mitigate and protect against those risks.

Each quarter, our Chief Information Security Officer (“CISO”) presents an overview of the Company’s cybersecurity risk landscape to our Enterprise Risk Management Committee, which includes our Executive Leadership Team and Vice President, Internal Audit. In addition, our CISO Council, which includes our CISO and our Chief Information and Digital Officer (“CIDO”), holds meetings with our Executive Leadership Team on a quarterly basis to review these cybersecurity risks and mitigation measures in further detail.

Our cybersecurity risk management program is aligned with the National Institute of Standards and Technology Cybersecurity Framework. We identify key assets that are critical to our business and assess potential cyber threats and vulnerabilities associated with those assets and the operations they enable. Following that assessment, we implement strategies and design controls to manage those risks. For example, we use single sign-on to limit access to our networks and multi-factor authentication to verify users’ identities. We also continuously monitor our systems and networks to protect against internal and external threat actors. We have policies and procedures in place, such as our Privileged Access Management process, to limit and control access to our confidential information by our vendors and other third parties. We also conduct due diligence and reviews of cybersecurity policies of third parties that access our systems or data. Additionally, we are focused on segregating our manufacturing processes from the Company’s other networks to minimize the risk of interruptions to our manufacturing operations resulting from cyber breaches. To increase our employees’ vigilance of cybersecurity risks and educate them on best practices relating to those risks, we conduct cybersecurity trainings and awareness campaigns, such as quarterly phishing campaigns.

Engagement of Third Parties

Given the complex and evolving nature of cybersecurity threats, the Company periodically engages third parties to assist us in evaluating our security vulnerabilities and developing and maintaining effective cybersecurity risk management. Partnering with third parties enables us to leverage specialized knowledge and insights, ensuring our cybersecurity strategies and processes are well-designed and effective. For example, in 2023, we engaged a global law firm to conduct an external assessment of our cybersecurity governance framework and processes and provide recommendations to improve our cybersecurity readiness and posture. We also work with third party specialists who perform threat and vulnerability assessments, such as penetration testing, and develop strategies to mitigate cybersecurity-related risks.

Oversight of Third-Party Risk

We are aware of the cybersecurity risks associated with engaging third-party service providers. To mitigate such risks, we conduct security assessments of high-risk third-party providers before engagement and maintain ongoing monitoring to ensure compliance with our cybersecurity standards. The monitoring includes ongoing assessments by our security engineers. This approach is designed to mitigate risks related to data breaches or other security incidents originating from third parties.

Risks from Cybersecurity Threats

The Company’s information and operational technology systems and its third-party providers’ systems have been, and will likely continue to be, subject to cybersecurity threats, such as computer viruses or other malicious codes, ransomware, unauthorized access attempts, business email compromise, cyber extortion, denial of service attacks, phishing, social engineering, hacking and other cyberattacks attempting to exploit vulnerabilities.

To date, the Company is not aware that its business or operations have been, or are reasonably likely to be, materially impacted by these cyberattacks. However, the Company’s security efforts and the efforts of its third-party providers may not prevent or timely detect attacks and resulting breaches or breakdowns of the Company’s, or its third-party service providers’, databases or systems.

Governance

Board of Directors’ Oversight

The Audit and Finance Committee (the “Audit and Finance Committee”) of our Board of Directors is responsible for reviewing and monitoring general IT and cybersecurity matters, including related risks, and reporting to the Board its determinations, actions and recommendations related thereto. Our Audit and Finance Committee is composed of independent directors with extensive executive leadership and risk management experience. Our CISO, together with our CIDO, provide quarterly updates to our Audit and Finance Committee regarding the cybersecurity risk landscape, specific risks affecting the Company and

solutions to mitigate those risks, and legal and regulatory requirements relating to cybersecurity. These updates assist the Board in performing its oversight and risk management function. In addition, the full Board receives an annual report on cybersecurity directly from the CISO.

Management's Role Managing Risk

Our CISO is responsible for the implementation, operation and monitoring of our cybersecurity risk management program. Our current CISO, who reports to our CDO, has over 20 years of experience managing the IT and cybersecurity operations within large, global organizations. His extensive experience assessing and mitigating cybersecurity risk, implementing governance structures and developing employee training programs is critical in developing and executing our cybersecurity strategies.

Monitoring of Cybersecurity Incidents

Our Cybersecurity Incident Response Plan establishes how we monitor and respond to cybersecurity incidents impacting our environment. The CISO works closely with members of our Executive Leadership Team and his cybersecurity team to monitor the prevention, detection, mitigation, and remediation of cybersecurity incidents. We engage a third-party managed security services provider (MSSP) to provide 24/7 continuous monitoring of the Company's IT and operational technology environments for potential cybersecurity incidents. In the event such an incident is identified by our MSSP or any of our employees, our cybersecurity team assigns it a severity classification and escalates the incident accordingly. Depending on the severity of the incident, certain key personnel are notified and work together to further investigate the incident and take actions to respond, which may include engaging with external specialists, regulatory authorities and our cybersecurity insurance carrier. The CISO receives regular updates on all incidents and incident responses, which the CISO shares with our Executive Leadership Team on a weekly basis. Our cybersecurity team conducts a post-incident review of all major cybersecurity incidents, which review includes identification of vulnerabilities, assessment of the incident's impact on the Company and recommendations to help prevent similar incidents in the future.

See "Item 1A. Risk Factors" for a more detailed description of the cybersecurity risks we face.

Item 2. Properties.

Our principal executive offices are located in Billerica, Massachusetts. Information about our principal and certain other facilities is set forth below:

Location	Principal Function	Approximate Square Feet	Leased/Owned	Reporting Segment
Bedford, Massachusetts	Research & Manufacturing	80,000	Owned	APS & MS
Billerica, Massachusetts ⁽¹⁾	Executive Offices, Research & Manufacturing	175,000	Leased	APS & MS
Burnet, Texas	Research & Manufacturing	86,000	Owned	MS
Decatur, Texas	Manufacturing	359,000	Owned	MS
Chaska, Minnesota	Executive Offices, Research & Manufacturing	186,000	Owned	APS
Colorado Springs, Colorado	Manufacturing	82,000	Owned	APS
Danbury, Connecticut	Research & Manufacturing	73,000	Leased	MS
San Luis Obispo, California	Manufacturing	57,867	Owned	APS
San Luis Obispo, California	Manufacturing	59,124	Leased	APS
Aurora, Illinois	Manufacturing	414,000	Owned	MS
Hillsboro, Oregon	Manufacturing	112,344	Leased	MS
Hsin-chu, Taiwan	Executive Offices, Sales Research & Manufacturing	146,330	Leased	APS & MS
Kaohsiung City, Taiwan (North)	Manufacturing	105,874	Owned	MS
Kaohsiung City, Taiwan (South)	Manufacturing	573,696	Owned	APS & MS
JangAn, South Korea	Manufacturing	127,000	Owned	APS & MS
Oseong, South Korea	Manufacturing	108,355	Owned	MS
Suwon, South Korea	Executive Offices & Research	42,000	Leased	APS & MS
Kulim, Malaysia	Manufacturing	195,000	Owned	APS & MS
Yonezawa, Japan	Manufacturing	185,000	Owned	APS
Tsu, Mie, Japan	Manufacturing	160,259	Owned	MS
Singapore	Manufacturing	47,770	Owned	MS

⁽¹⁾ This lease has been extended through September 30, 2026 and is subject to one five-year renewal option.

In addition, we own and lease space for manufacturing, distribution, technical support, sales, service, repair, and general administrative purposes in the U.S., Canada, China, Germany, France, Israel, Japan, Malaysia, Singapore, South Korea and Taiwan. Leases for our facilities expire through October 2031. We currently expect to be able to extend the terms of expiring leases or to find suitable replacement facilities on reasonable terms. We believe that our facilities are well-maintained and suitable for their respective operations. We regularly assess the size, capability and location of our global infrastructure and periodically make adjustments based on these assessments.

Item 3. Legal Proceedings.

We are, from time-to-time, involved in various claims, proceedings and lawsuits relating to our business, employees, intellectual property and other matters. The outcomes of these matters are not within our complete control and may not be known for prolonged periods of time. In some actions, the claimants seek damages, as well as other relief, that could require significant expenditures or result in lost revenues. We record a liability for these matters when a loss is known or considered probable and the amount can be reasonably estimated. If the reasonable estimate of a known or probable loss is a range, and no amount within the range is a better estimate than any other, the minimum amount of the range is accrued. There is judgment required in the determination of the likelihood of outcome, and if necessary determination of the estimate or range of potential outcomes. Based on the current information, the Company does not believe any known matters have a reasonable possibility of a material amount for litigation or other contingencies related to legal proceedings.

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 and Holders

Entegris' common stock, \$0.01 par value per share, trades on the Nasdaq Global Select Market under the symbol "ENTG". As of February 5, 2025, there were 965 shareholders of record.

Dividend Policy

Holders of the Company's common stock are entitled to receive dividends when and if they are declared by the Company's Board of Directors. The Company's Board of Directors declared cash dividends of \$0.10 per share during each of the first, second, third and fourth quarters of 2024, which totaled \$60.7 million.

On January 15, 2025, the Company's Board of Directors declared a quarterly cash dividend of \$0.10 per share to be paid on February 19, 2025 to shareholders of record as of January 29, 2025.

The Company currently expects to continue paying dividends comparable with our historic dividend practices. Future dividend declarations, if any, as well as the record and payment dates for such dividends, are subject to the final determination of our Board of Directors. Furthermore, the credit agreement governing the Credit Facilities contains restrictions that may limit our ability to pay dividends.

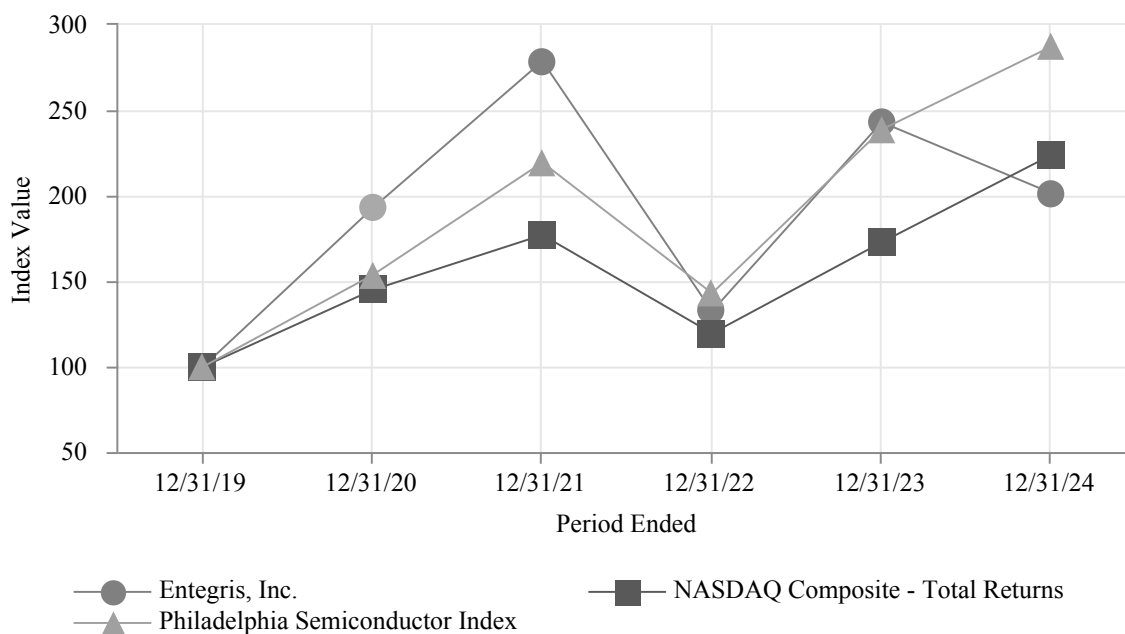
Issuer Sales of Unregistered Securities During the Past Three Years

None.

Comparative Stock Performance

The following graph compares the cumulative total shareholder return on the common stock of Entegris, Inc. from December 31, 2019 through December 31, 2024 with the cumulative total return on (1) The Nasdaq Composite Index, and (2) The Philadelphia Semiconductor Index, assuming \$100 was invested at the close of trading on December 31, 2019 in Entegris, Inc. common stock, the Nasdaq Composite Index and the Philadelphia Semiconductor Index and that all dividends are reinvested.

Comparison of Five-Year Cumulative Total Return Assumes Initial Investment of \$100 December 31, 2024



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	December 31, 2019	December 31, 2020	December 31, 2021	December 31, 2022	December 31, 2023	December 31, 2024
Entegris, Inc.	\$100.00	\$192.83	\$278.79	\$132.44	\$243.04	\$201.58
Nasdaq Composite	100.00	144.92	177.06	119.45	172.77	223.86
Philadelphia Semiconductor Index	100.00	153.66	219.50	142.94	238.72	287.31

Issuer Purchases of Equity Securities

The Company does not have a publicly announced stock repurchase program and we did not repurchase any equity securities during the year ended December 31, 2024.

The Company issues common stock awards under its equity incentive plans. In the consolidated financial statements, the Company treats shares of common stock withheld for tax purposes on behalf of its employees in connection with the vesting or exercise of the awards as common stock repurchases because they reduce the number of shares that would have been issued upon vesting or exercise. These withheld shares of common stock are not considered common stock repurchases pursuant to a Board-authorized common stock repurchase plan.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of the Company's consolidated financial condition and results of operations should be read along with the consolidated financial statements and the accompanying notes thereto included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve numerous risks and uncertainties, including, but not limited to, those described in Item 1A, "Risk Factors" and the "Cautionary Statements" section of this Item 7 below. You should review Item 1A "Risk Factors" of this Annual Report on Form 10-K for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. The Company has elected to omit discussion of the earliest of the three years covered by the consolidated financial statements presented except for the segment analysis. Information pertaining to fiscal year 2022 results of operations and the year-over-year comparison of changes in our Financial Condition and Results of Operations as of and for the year ended December 31, 2023 and 2022 can be found in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Annual Report on Form 10-K for the year ended December 31, 2023, filed on February 15, 2024.

Cautionary Statements

This Annual Report on Form 10-K and the portions of the Company's Definitive Proxy Statement incorporated by reference in this Annual Report on Form 10-K contain "forward-looking statements." The words "believe," "expect," "anticipate," "intend," "estimate," "forecast," "project," "should," "may," "will," "would" or the negative thereof and similar expressions are intended to identify such forward-looking statements. These forward-looking statements are based on current management expectations and assumptions only as of the date of this Annual Report on Form 10-K. They are not guarantees of future performance and they involve substantial risks and uncertainties that are difficult to predict and that could cause actual results to differ materially from the results expressed in, or implied by, these forward-looking statements.

These risks and uncertainties include, but are not limited to, fluctuations in the demand for semiconductors and the overall volume of semiconductor manufacturing; the impact of global economic uncertainty, including volatile financial markets, inflationary pressures and interest rate fluctuations, economic recessions, national debt and bank failures, raw material shortages, supply and labor constraints, and price increases; fluctuations in the Company's revenues and operating results and their impact on the Company's stock price; supply chain interruptions and the Company's dependence on sole, single and limited source suppliers; operational, political and legal risks of the Company's international operations; the impact of regional and global instabilities, hostilities and geopolitical uncertainty, including, but not limited to, the ongoing conflicts between Ukraine and Russia, and between Israel and Hamas, as well as the global responses thereto; tariffs, additional taxes, and other protectionist measures resulting from international trade disputes, strained international relations, and changes in foreign and national security policy; export controls, economic sanctions, and similar restrictions; the concentration and consolidation of the Company's customer base; the Company's ability to meet rapid demand shifts; the Company's ability to continue technological innovation and to introduce new products to meet customers' rapidly changing requirements; manufacturing and other operational disruptions or delays; the risks associated with the use and manufacture of hazardous materials; goodwill impairment; challenges in attracting and retaining qualified personnel; the Company's ability to protect and enforce intellectual property rights; IT system failures, network disruptions, and cybersecurity risks; the Company's environmental, social, and governance commitments; legal and regulatory risks, including changes in laws and regulations related to the environment, health and safety, accounting standards, and corporate governance, across the jurisdictions in which the Company operates; changes in taxation or adverse tax rulings; the Company's ability to effectively implement any organizational changes; the ability to obtain government incentives and the possibility that competitors will benefit from government incentives; the amount and consequences of the Company's indebtedness, its ability to repay its debt and to obtain future financing, and the Company's obligations under its current outstanding credit facilities; volatility in the Company's stock price; the payment of cash dividends and the adoption of future share repurchase programs; challenges associated with a potential change of control; substantial competition; the Company's ability to identify, complete and integrate acquisitions, joint ventures, divestitures or other similar transactions; the impacts of climate change; and other matters. These risks and uncertainties also include, but are not limited to, the risk factors and additional information described in this Annual Report on Form 10-K under the caption "Risk Factors," elsewhere in this Annual Report on Form 10-K and in the Company's other periodic filings. Except as required under the federal securities laws and the rules and regulations of the SEC, the Company undertakes no obligation to update publicly any forward-looking statements or information contained herein, which speak as of their respective dates.

Overview

This overview is not a complete discussion of the Company's financial condition, changes in financial condition and results of operations; it is intended merely to facilitate an understanding of the most salient aspects of its financial condition and operating performance and to provide a context for the detailed discussion and analysis that follows, and must be read in its entirety in order to fully understand the Company's financial condition and results of operations.

The Company is a leading supplier of critical advanced materials and process solutions for the semiconductor and other high-technology industries. We leverage our unique breadth of capabilities to help our customers improve their productivity, product performance and technology in the most advanced manufacturing environments.

In the fourth quarter of 2024, the Company announced an internal reorganization, combining two complementary divisions into one and realigning its customer facing organization. Our business is now organized and operated in two operating segments as discussed below. The current annual and succeeding annual periods will disclose the reportable segments with prior periods recast to reflect the change. These segments share common business systems and processes, technology centers and technology roadmaps.

- The Materials Solutions segment, or MS, provides materials-based solutions, such as chemical vapor and atomic layer deposition materials, chemical mechanical planarization (“CMP”) slurries and pads, ion implantation specialty gases, formulated etch and clean materials, and other specialty materials that enable our customers to achieve better device performance and faster time to yield, while providing for lower total cost of ownership.
- The Advanced Purity Solutions segment, or APS, offers filtration, purification and contamination-control solutions that improve customers’ yield, device reliability and cost by ensuring the purity of critical liquid chemistries and gases and the cleanliness of wafers and other substrates used throughout semiconductor manufacturing processes, the semiconductor ecosystem and other high-technology industries.

With our complementary capabilities, we believe we are uniquely positioned to create new, co-optimized and increasingly integrated solutions for our customers, which should translate into improved device performance, lower cost of ownership and faster time to market. For example, we have the capabilities and core competencies to develop and co-optimize offerings solving customers’ complex manufacturing challenges across the deposition, CMP process and post-CMP modules, with solutions including advanced deposition materials, CMP slurries, pads and post-CMP cleaning chemistries (each from our MS segment), and CMP slurry filters, high-purity packaging and fluid monitoring systems (each from our APS segment).

Regulatory Volatility

In light of the current geopolitical environment, in the near term, we anticipate greater uncertainty and inconsistency among the jurisdictions in which we operate with respect to policies and regulations that affect our business, including, without limitation, trade regulations, environmental regulations, labor and immigration regulations, tax policies, tariffs, sanctions and export controls. This may add additional uncertainty and volatility to business planning and forecasting for us and for our customers. While we continually monitor and explore options to mitigate this volatility through appropriate adjustments to our business planning and processes, the ultimate impact this rapidly evolving regulatory environment may have on the global economy, supply chains, logistics, raw material pricing and our business is likely to remain uncertain for some time.

Recent Events

On March 1, 2024, the Company completed the sale of its PIM business. The Company received net cash proceeds of \$256.2 million. See Note 5 to our consolidated financial statements for additional information.

On March 28, 2024, the Company and certain of its subsidiaries entered into Amendment No. 3 (the “Third Amendment”), with the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent, which amended the Credit and Guaranty Agreement, dated as of November 6, 2018 (as amended and restated as of July 6, 2022 and as subsequently amended on each of March 10, 2023 and September 11, 2023, the “Existing Credit Agreement”), by and among the Company, as borrower, certain subsidiaries of the Company party thereto, as guarantors, the lenders party thereto, and Morgan Stanley Senior Funding, Inc., as administrative agent and collateral agent. See Note 10 to our consolidated financial statements for additional information.

On December 3, 2024, the Company and the U.S. Department of Commerce entered into a definitive agreement providing for up to \$77.0 million in direct funding to the Company under the CHIPS and Science Act of 2022. This funding will support the development of a facility in Colorado Springs, Colorado, which will produce products for the Company’s APS segment. See Note 21 to our consolidated financial statements for additional information.

Critical Accounting Policies and Estimates

Management’s discussion and analysis of financial condition and results of operations are based upon the Company’s consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States (“GAAP”). The preparation of these consolidated financial statements requires the Company to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. At each balance sheet date, management evaluates its estimates, including, but not limited to, those related to long-lived assets (property, plant and equipment, and identified intangible assets), goodwill and income taxes. The Company bases its estimates on historical experience and various other assumptions that management believes to be reasonable under the circumstances. Management’s utilization of different judgments or estimates could result in material differences in the amount and timing of the Company’s results of operations for any period. In addition, actual results could be different from the Company’s current estimates, possibly resulting in increased future charges to earnings.

Our critical accounting policies that are most significantly affected by estimates, assumptions and judgments used in the preparation of the Company's consolidated financial statements relate to business acquisitions and are discussed below. See Note 1 to the Company's consolidated financial statements for additional information about the Company's other significant accounting policies.

Goodwill

Goodwill is tested for impairment annually as of August 31. If circumstances change during interim periods between annual tests that would more likely than not reduce the fair value of a reporting unit below its carrying value, the Company will test goodwill for impairment. Factors that would necessitate an interim goodwill impairment assessment include a sustained decline in the Company's stock price, effects on a reporting unit such as a change in the composition or carrying amounts of its net assets, prolonged negative industry or economic trends, or significant under-performance relative to expected, historical or projected future operating results. Management uses judgment to determine whether to use a qualitative analysis or a quantitative fair value measurement for its goodwill impairment testing. The Company's fair value measurement approach combines the income and market valuation techniques for each of the Company's reporting units that carry goodwill. These valuation techniques use estimates and assumptions including, but not limited to, the determination of appropriate market comparable, projected future cash flows (including timing and profitability), the discount rate reflecting the risk inherent in future cash flows, the perpetual growth rate, and projected future economic and market conditions.

If a reporting unit fails the quantitative impairment test, impairment expense is immediately recorded as the difference between the reporting unit's fair value and carrying value not to exceed the amount of goodwill recorded.

Results of Operations

Year ended December 31, 2024 compared to year ended December 31, 2023

The following table sets forth the results of operations and the relationship between various components of operations, stated as a percent of net sales, for 2024 and 2023.

	2024		2023	
		% of net sales		% of net sales
<i>(Dollars in thousands)</i>				
Net sales	\$ 3,241,208	100.0 %	\$ 3,523,926	100.0 %
Cost of sales	1,754,489	54.1	2,026,321	57.5
Gross profit	1,486,719	45.9	1,497,605	42.5
Selling, general and administrative expenses	446,567	13.8	576,194	16.4
Engineering, research and development expenses	316,111	9.8	277,313	7.9
Amortization of intangible assets	190,119	5.9	214,477	6.1
Goodwill impairment	—	—	115,217	3.3
Gain on termination of Alliance Agreement	—	—	(184,754)	(5.2)
Operating income	533,922	16.5	499,158	14.2
Interest expense	215,217	6.6	312,378	8.9
Interest income	(7,368)	(0.2)	(11,257)	(0.3)
Other expense, net	4,021	0.1	25,367	0.7
Income before income taxes	322,052	9.9	172,670	4.9
Income tax expense (benefit)	28,332	0.9	(8,413)	(0.2)
Equity in net loss of affiliates	933	—	414	—
Net income	\$ 292,787	9.0	\$ 180,669	5.1

Net sales For 2024, net sales were \$3,241.2 million, decreased by \$282.7 million, or 8%, from 2023. An analysis of the factors underlying the decrease in net sales is presented in the following table:

(In thousands)

Net sales in 2023	\$ 3,523,926
Decrease associated with divestitures	(434,241)
Decrease associated with effect of foreign currency translation	(23,400)
Increase mainly associated with volume	174,923
Net sales in 2024	\$ 3,241,208

As described in the table above, the decrease in net sales was primarily attributable to (i) the absence of sales totaling \$434.2 million associated with divested businesses and (ii) a reduction of \$23.4 million attributable to unfavorable foreign currency translation effects, primarily related to the weakening of the Japanese yen relative to the U.S. dollar compared to the year ago period ended December 31, 2023. These declines were partially offset by an increase of \$174.9 million of sales due to increased semiconductor market demand compared to the year ago period ended December 31, 2023.

Sales percentage on a geographic basis for 2024 and 2023 and the percentage increase (decrease) in sales for 2024 compared to sales for 2023 were as follows:

	Year ended		Percentage increase (decrease) in sales
	December 31, 2024	December 31, 2023	
North America	21 %	25 %	(25)%
Taiwan	20 %	17 %	12 %
China	21 %	16 %	18 %
South Korea	13 %	13 %	(6)%
Japan	10 %	10 %	(16)%
Europe	8 %	11 %	(32)%
Southeast Asia	7 %	7 %	(12)%

The decrease in sales to customers in North America primarily relate to the absence of sales from divested businesses. The increase in sales to customers in Taiwan primarily relates to increased demand for our APS products. The increase in sales to customers in China primarily relates to increased demand for our MS and APS products. The decrease in sales to customers in South Korea primarily relates to decreased demand for our MS and APS products. The decrease in sales to customers in Japan primarily relates to decreased demand for our APS products, partially offset by increased demand for our MS products. The decrease in sales to customers in Europe primarily relate to the absence of sales from divested businesses. The decrease in sales to customers in Southeast Asia primarily relates to the absence of sales from divested businesses, partially offset by increased demand for our MS products.

Gross margin

The following table sets forth gross margin as a percentage of net sales:

	2024	2023	Percentage point change
Gross margin as a percentage of net sales:	45.9 %	42.5 %	3.4

Gross margin increased by 3.4% for 2024 compared to 2023. Gross margin increased primarily due to the positive impact of the divested businesses and improved plant performance.

Selling, general and administrative expenses

Selling, general and administrative (“SG&A”) expenses consist primarily of payroll and related expenses for the sales and administrative staff, professional fees (including accounting, legal and technology costs and expenses), and sales and marketing costs. SG&A expenses for 2024 decreased \$129.6 million, or 22%, to \$446.6 million from \$576.2 million in 2023.

An analysis of the factors underlying the decrease in SG&A expenses is presented in the following table:

(In thousands)

Selling, general and administrative expenses in 2023	\$	576,194
Integration, deal and transaction costs, mainly due to CMC Materials acquisition		(53,158)
Loss on sales of EC and QED businesses in 2023		(23,839)
Employee costs, mainly driven by divested businesses		(17,991)
Impairment on long-lived assets, see Note 3 to the Company's Consolidated Financial Statements		(17,497)
Depreciation expense		(7,919)
Gain on sale of PIM business in 2024		(4,311)
Other decreases, net		(4,912)
Selling, general and administrative expenses in 2024	\$	<u>446,567</u>

Engineering, research and development expenses

Engineering, research and development ("ER&D") expenses consist of expenses for the support of current product lines and the development of new products and manufacturing technologies. These expenses were \$316.1 million in 2024 and \$277.3 million in 2023.

An analysis of the factors underlying the increase in ER&D expenses is presented in the following table:

(In thousands)

Engineering, research and development expense in 2023	\$	277,313
Employee costs		14,874
Project related costs		11,411
Depreciation expense		8,013
Other increases, net		4,500
Engineering, research and development expense in 2024	\$	<u>316,111</u>

The Company's overall ER&D efforts will continue to focus on developing and improving its technology platforms to support the semiconductor ecosystem and identifying and developing products for new applications. The Company often works directly with its customers to address their needs.

Amortization of intangible assets Amortization of intangible assets was \$190.1 million in 2024 compared to \$214.5 million for 2023. The decrease primarily reflects the absence of amortization for certain identifiable intangible assets acquired in previous acquisitions that became fully amortized and the intangible assets disposed of as part of the EC disposition.

Goodwill impairment The Company recorded no goodwill impairment charges in 2024 and \$115.2 million in 2023. See Note 3 to the Company's consolidated financial statements for further discussion.

Gain on termination of alliance agreement In connection with the termination of the alliance agreement, the Company recognized a pre-tax gain, net of \$184.8 million in 2023. See Note 5 to the Company's consolidated financial statements for further discussion.

Interest expense Interest expense was \$215.2 million in 2024 and \$312.4 million in 2023. Interest expense includes interest associated with debt outstanding and the amortization of debt issuance costs associated with such borrowings. The decrease reflects lower interest expense related to lower average debt balances for the period due to repayments on the Company's outstanding debt.

Interest income Interest income was \$7.4 million in 2024 and \$11.3 million in 2023. The decrease primarily reflects lower average cash balances.

Other expense, net Other expense, net, was \$4.0 million in 2024 compared to \$25.4 million in 2023.

In 2024, other expense, net consisted mainly of loss of extinguishment and modification of debt of \$14.3 million associated with the repayments and the Third Amendment on the Company's senior secured term loan facility (see Note 10 to the Company's consolidated financial statements) and foreign currency transaction losses of \$7.7 million, partially offset by a gain of \$20.0 million related to the settlement of patent infringement litigation.

In 2023, other expense, net consisted mainly of loss of extinguishment and modification of debt of \$29.9 million associated with the repayments on the Company's bridge credit facility and senior secured term loan facility and the amendments of the

Company's Existing Credit Agreement and foreign currency transaction losses of \$5.7 million, partially offset by net proceeds received of \$10.9 million resulting from the termination of the definitive agreement with Infineum related to the PIM business.

Income tax expense The Company recorded income tax expense of \$28.3 million in 2024 compared to an income tax benefit of \$8.4 million in 2023. The Company's effective tax rate was 8.8% in 2024 compared to an effective tax rate of (4.9)% in 2023.

The change in the effective tax rate from 2023 to 2024 primarily relates to the integration of the CMC acquisition and, discrete divestiture activity that occurred in 2023. Additionally, the tax rate was lower in 2023 due to changes in U.S. tax regulations pertaining to foreign tax credits.

Net income Net income was \$292.8 million, or \$1.93 per diluted share, in 2024 compared to net income of \$180.7 million, or \$1.20 per diluted share, in 2023. The increase reflects the Company's aforementioned operating results described in greater detail above.

Non-GAAP Financial Measures Information The Company's consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States. The Company also utilizes certain non-GAAP financial measures as a complement to financial measures provided in accordance with GAAP in order to better assess and reflect trends affecting the Company's business and results of operations. See "Non-GAAP Information" included below in this section for additional detail, including the reconciliation of the Company's non-GAAP measures to the most directly comparable GAAP measures.

The Company's non-GAAP financial measures include Adjusted EBITDA and Adjusted Operating Income, together with related percentage changes, and Non-GAAP Earnings Per Share, or EPS.

<i>(In thousands)</i>	Year ended		Percent change
	December 31, 2024	December 31, 2023	
Adjusted Operating Income	\$ 742,954	\$ 769,672	(3.5)%
Adjusted Operating Margin - as a % of net sales	22.9%	21.8%	
Adjusted EBITDA	\$ 931,074	\$ 942,355	(1.2)%
Adjusted EBITDA - as a % of net sales	28.7 %	26.7%	
Non-GAAP EPS	\$ 3.00	\$ 2.64	13.6 %

The decreases in Adjusted Operating Income and Adjusted EBITDA in 2024 compared to 2023 are generally attributable to decreased net sales and gross profit due to divested businesses and higher operating expenses. The increase in Non-GAAP EPS in 2024 compared to 2023 is primarily attributable to lower interest expense, partially offset by the decreases noted above for Adjusted Operating Income and Adjusted EBITDA.

Segment Analysis

In the fourth quarter of 2024, in order to align its segment financial reporting with a change in its business structure, the Company realigned its segments. Following the segment realignment, the Company's two reportable segments are Materials Solutions and Advanced Purity Solutions. Accordingly, our segment information was restated retroactively in the fourth quarter of fiscal year 2024. The segment realignment had no impact on the Materials Solutions segment financial reporting. See Note 20 to the consolidated financial statements for additional information on the Company's two segments.

The following table and discussion reflects the results of operations of the Company's two reportable segments for the years ended December 31, 2024, 2023 and 2022.

<i>(In thousands)</i>	2024	2023	2022
Materials Solutions			
Net sales	\$ 1,400,082	\$ 1,689,467	\$ 1,380,208
Segment profit	286,220	296,375	219,189
Advanced Purity Solutions			
Net sales	\$ 1,850,199	\$ 1,846,596	\$ 1,913,985
Segment profit	496,131	531,448	595,213
Unallocated general and administrative expenses	\$ 58,310	\$ 114,188	\$ 190,468

Materials Solutions (MS)

For 2024, MS net sales decreased to \$1,400.1 million, down 17% from \$1,689.5 million in 2023. The sales decrease was driven primarily by the absence of \$434.2 million in sales associated with divested businesses included in the prior year sales, partially offset by increased sales from CMP consumables, advanced deposition materials and selective etching products.

MS reported a segment profit of \$286.2 million for 2024, down 3% compared to \$296.4 million in 2023. The decrease was primarily associated with (1) the absence of a \$184.8 million gain resulting from the termination of the alliance agreement with MacDermid Enthone in 2023, (2) the absence of segment profit associated with divested businesses, partially offset with (3) the absence of a goodwill impairment charge of \$115.2 million, (4) the absence of \$23.8 million loss on sale of business and held-for-sale in 2023, (5) a decrease of a \$17.5 million of impairment charges related to the long-lived assets of a small, industrial specialty chemicals business in 2023, (6) a \$4.3 million gain associated with sale of the PIM business, and (7) improved plant performance.

For 2023, MS net sales increased to \$1,689.5 million, up 22% from \$1,380.2 million in 2022. The sales increase primarily reflects the inclusion of sales of \$537.8 million attributed to acquisitions, primarily of CMC Materials, and also reflects modestly improved sales of advanced deposition materials, formulated cleans, selective etch and specialty coating products.

MS reported a segment profit of \$296.4 million for 2023, up 35% compared to \$219.2 million in 2022. The increase in MS's profit in 2023 was primarily due to the segment profit attributed to the CMC Materials acquisition, partially offset by unfavorable product mix and a \$61.9 million charge for a fair value write-up resulting from the sale of acquired CMC Materials inventory.

Advanced Purity Solutions (APS)

For 2024, APS net sales are approximately flat at \$1,850.2 million, compared to \$1,846.6 million in 2023.

APS reported a segment profit of \$496.1 million for 2024, down 7% compared to \$531.4 million in 2023. The decrease in APS's profit in 2024 was primarily due to increased costs associated with the ramp up of our new manufacturing facility in Taiwan and higher operating expenses.

For 2023, APS net sales decreased to \$1,846.6 million, down 4% from \$1,914.0 million in 2022. The sales decrease was primarily due to lower sales from our microenvironment solutions products, partially offset by improved sales from our liquid filtration products.

APS reported a segment profit of \$531.4 million for 2023, down 11% compared to \$595.2 million in 2022. The decrease in APS's profit in 2023 was primarily due to lower sales, lower factory performance, increased costs associated with our new manufacturing facility in Taiwan and increased investment in research and development.

Unallocated general and administrative expenses

Unallocated general and administrative expenses for 2024 totaled \$58.3 million compared to \$114.2 million for 2023. The \$55.9 million decrease is primarily due to a \$53.2 million decrease in deal, transaction and integration costs related to the acquisition of CMC Materials.

Unallocated general and administrative expenses for 2023 totaled \$114.2 million compared to \$190.5 million for 2022. The \$76.3 million decrease is primarily due to a \$95.7 million decrease in deal, transaction and integration costs related to the acquisition of CMC Materials, partially offset by an increase in employee costs of \$14.1 million.

Liquidity and Capital Resources

We consider the following when assessing our liquidity and capital resources:

<i>(In thousands)</i>	December 31, 2024	December 31, 2023
Cash and cash equivalents	\$ 329,213	\$ 456,929
Working capital	1,091,126	1,463,332
Total debt	3,981,105	4,577,141

The Company has historically financed its operations and capital requirements through cash flow from its operating activities, long-term loans, lease financing and borrowings under domestic and international short-term lines of credit.

Based on our analysis, we believe our existing balances of domestic cash and cash equivalents and our currently anticipated operating cash flows will be sufficient to meet our cash needs arising in the ordinary course of business for the next twelve months and for the longer term.

We may seek to take advantage of opportunities to raise additional capital through additional debt financing or through public or private sales of securities. If in the future our available liquidity is not sufficient to meet the Company's operating and debt service obligations as they come due, management would need to pursue alternative arrangements through additional equity or debt financing in order to meet the Company's cash requirements. There can be no assurance that any such financing would be available on commercially acceptable terms, or at all. During 2024, we did not experience difficulty accessing capital and credit markets, but future volatility in the capital and credit markets may increase costs associated with issuing debt instruments or affect our ability to access those markets. In addition, it is possible that our ability to access the capital and credit markets could be limited at a time when we would like, or need, to do so, which could have an adverse impact on our ability to refinance maturing debt and/or react to changing economic and business conditions.

In summary, our cash flows for each period were as follows:

<i>(In thousands)</i>	Year ended December 31, 2024	Year ended December 31, 2023
Net cash provided by operating activities	\$ 631,721	\$ 644,476
Net cash (used in) provided by investing activities	(67,079)	553,071
Net cash used in financing activities	(688,987)	(1,297,543)
Decrease in cash, cash equivalents and restricted cash	(127,716)	(106,510)

Operating activities

Cash provided by operating activities is net income adjusted for certain non-cash items and changes in assets and liabilities.

Compared to 2023, the \$12.8 million decrease in cash provided by operating activities in 2024 was primarily driven by \$174.5 million of changes in operating assets and liabilities, offset by a \$161.7 million increase of net income adjusted for non-cash reconciling items.

Changes in operating assets and liabilities were driven by changes in trade accounts and notes receivable, inventories and accounts payable and accrued liabilities. The change for trade receivables was mainly due to increased sales at the end of the period. The change for inventory was driven by increased business activity. The change for accounts payable and accrued liabilities was driven by timing of payments.

Investing activities

Investing cash flows consist primarily of capital expenditures, cash used for acquisitions, proceeds from sales of businesses and proceeds from sales of property and equipment.

In 2024, there was \$67.1 million of cash used in investing activities compared to \$553.1 million cash provided by investing activities in 2023. The decrease in 2024 resulted primarily from less proceeds from divestitures of \$564.2 million and the absence of net proceeds from the termination of the alliance agreement of \$191.2 million, partially offset by a \$141.2 million decrease in capital expenditures compared to the prior year.

Acquisition of property and equipment totaled \$315.6 million in 2024, which primarily reflected investments in facilities, equipment and tooling, compared to \$456.8 million in 2023, which also primarily reflected investments in facilities, equipment and tooling. Capital expenditures in 2024 included spending related to our previously announced investment in our KSP site and new manufacturing facility in Colorado Springs, Colorado.

Financing activities

Financing cash flows consist primarily of repurchases of common stock, payment of dividends to stockholders, issuance and repayment of short-term and long-term debt, and proceeds from the sale of shares of common stock through employee equity incentive plans.

In 2024, there was \$689.0 million of cash used in financing activities compared to \$1,297.5 million cash used in financing activities in 2023. The change in 2024 was primarily due to decreased net debt activity of \$635.9 million compared to the prior year. See Note 10 to the Company's consolidated financial statements for further discussion of the debt financing that occurred during the year.

The Company's total dividend payments were \$60.6 million in 2024 compared to \$60.2 million in 2023. The Company has paid a cash dividend in each quarter since the fourth quarter of 2017. On January 15, 2025, the Company's board of directors declared a quarterly cash dividend of \$0.10 per share to be paid on February 19, 2025 to shareholders of record as of January 29, 2025.

Other Liquidity and Capital Resources Considerations

Debt at par value outstanding

<i>(In thousands)</i>	December 31, 2024	December 31, 2023
Senior secured term loan due 2029 at 4.71% ⁽¹⁾	\$ 750,000	\$ 1,373,774
Senior secured notes due 2029 at 4.75%	1,600,000	1,600,000
Senior unsecured notes due 2030 at 5.95%	895,000	895,000
Senior unsecured notes due 2029 at 3.625%	400,000	400,000
Senior unsecured notes due 2028 at 4.375%	400,000	400,000
Revolving facility due 2027 at 6.07% ⁽²⁾	—	—
Total debt (par value)	\$ 4,045,000	\$ 4,668,774

⁽¹⁾ The Company entered into a floating-to-fixed swap contract on its variable rate debt under our senior secured term loan facility due 2029. The effective interest rate after consideration of this floating-to-fixed swap contract was 4.71%. Refer to Note 12 for a description of our interest rate swap contract.

⁽²⁾ Our senior secured revolving credit facility due 2027 (the "Revolving Facility") bears interest at a rate per annum equal to SOFR, plus an applicable margin of 1.75%. The Revolving Facility has commitments of \$575.0 million.

On March 28, 2024, the Company amended its Existing Credit Agreement. The Third Amendment provides for, among other things, the refinancing of the Company's outstanding term loans B under the Term Loan Facility in an aggregate principal amount of \$955.0 million with a new tranche of term loans B in an aggregate principal amount of \$955.0 million. The amended loans bear interest at a rate per annum equal to, at the Company's option, either (i) the SOFR plus an applicable margin of 1.75%, which is a reduction from the applicable margin of 2.50% prior to the amendment, or (ii) a base rate plus an applicable margin of 0.75%, which is a reduction from the applicable margin of 1.50% prior to the amendment. In connection with the Third Amendment, the Company made a payment of \$354.5 million on the term loans B. See Note 10 to our consolidated financial statements for further discussion.

During the fiscal year 2024, the Company repaid \$623.8 million net of borrowings under the term loans B under the Term Loan Facility.

Through December 31, 2024, the Company was in compliance with all applicable financial covenants included in the terms of its debt arrangements.

The Company has commitments under the Revolving Facility of \$575.0 million. The Revolving Facility bears interest at a rate per annum equal to, at the Company's option, either a base rate (such as prime rate) or SOFR, plus, in each case, an applicable margin. During the twelve months ended December 31, 2024, the Company borrowed and repaid \$140.0 million under this Revolving Facility and no balance was outstanding at December 31, 2024.

The Company also has a line of credit with one bank that provides for borrowings of Japanese yen for the Company's Japanese subsidiary equivalent to an aggregate of approximately \$6.4 million. There were no outstanding borrowings under this line of credit and no balance was outstanding at December 31, 2024.

Cash and cash requirements

<i>(In thousands)</i>	December 31, 2024	December 31, 2023
Cash and cash equivalents	\$ 329,213	\$ 456,929
U.S.	49,027	154,015
Non-U.S.	280,186	302,914

Our cash and cash equivalents include cash on hand and highly-liquid debt securities with original maturities of three months or less, which are valued at cost and approximate fair value. We utilize a variety of funding strategies in an effort to ensure that our worldwide cash is available in the locations in which it is needed.

Cash requirements

We have cash requirements to support working capital needs, capital expenditures, business acquisitions, contractual obligations, commitments, principal and interest payments on debt and other liquidity requirements associated with our operations. We generally intend to use available cash and funds generated from our operations to meet these cash requirements, but, in the event that additional liquidity is required, we may also borrow under our Revolving Facility.

The following table summarizes our short and long-term cash requirements as of December 31, 2024:

<i>(In thousands)</i>	Total	Due within one year of December 31, 2024	Due later than one year from December 31, 2024
Long-term debt (principal)	\$ 4,045,000	\$ —	\$ 4,045,000
Interest payments on long-term debt	924,114	198,168	725,946
Capital purchase obligations	125,645	67,761	57,884
Supply purchase obligations	60,030	29,134	30,896
Operating and financing leases	108,174	20,012	88,162
Income tax liabilities	150,722	80,532	70,190
Total	\$ 5,413,685	\$ 395,607	\$ 5,018,078

Long-term debt and interest payments on long-term debt. We have contractual obligations for principal and interest payments on our long-term debt. See Note 10 of the consolidated financials for additional information. Debt obligations are classified based on their stated maturity date, regardless of their classification on the Company's consolidated balance sheets. Interest projections on both variable and fixed rate long-term debt are based on interest rates effective as of December 31, 2024 and do not include \$63.9 million for net unamortized discounts and debt issuance costs. On July 28, 2022, the Company entered into a floating-to-fixed interest rate swap agreement to hedge the variability in SOFR-based interest payments associated with \$1.95 billion of its \$2.495 billion Initial Term Loan Facility. The notional amount of the swap is \$750.0 million at December 31, 2024 and is scheduled to decrease quarterly and will expire on December 30, 2025. The impact of the interest rate swap is not considered in the interest payments above.

Capital purchase obligations. We have capital purchase obligations that represent commitments for the construction or purchase of property, plant and equipment. They were not recorded as liabilities on the Company's consolidated balance sheet as of December 31, 2024, as the Company had not yet received the related goods or taken title to the property.

We expect capital expenditure spending to be approximately \$325.0 million in 2025 and includes spending for construction of, and tools and equipment in our new manufacturing facility in Colorado Springs, Colorado.

Supply purchase obligations. We have non-cancelable commitments, including take-or-pay contracts, that are not presented as capital purchase commitments above. They were not recorded as liabilities on the Company's consolidated balance sheet as of December 31, 2024, as the Company had not yet received the related goods or taken title to the property.

Operating and financing lease commitments. Commitments under operating and financing leases primarily relate to leasehold properties. See Note 14 of the consolidated financials for additional information.

Income tax liabilities. Of the tax liabilities included in the table above, \$44.3 million relates to uncertain tax positions. We are unable to accurately predict when these amounts will be realized or released. However, it is reasonably possible that there could be significant changes to our unrecognized tax benefits in the next twelve months due to an unforeseeable event (such as a tax audit settlement). See Note 16 of the consolidated financials for additional information.

New Accounting Pronouncements

Recently adopted accounting pronouncements Refer to Note 1 to the Company's consolidated financial statements for a discussion of accounting pronouncements implemented in 2024.

Recently issued accounting pronouncements Refer to Note 1 of the Company's consolidated financial statements for a discussion of accounting pronouncements recently issued but not yet adopted.

Non-GAAP Information The Company's consolidated financial statements are prepared in conformity with GAAP.

The Company also utilizes certain non-GAAP financial measures as a complement to financial measures provided in accordance with GAAP in order to better assess and reflect trends affecting the Company's business and results of operations. These non-GAAP financial measures include Adjusted EBITDA and Adjusted Operating Income, together with related measures thereof, and Non-GAAP EPS, as well as certain other supplemental non-GAAP financial measures included in the discussion of the Company's financial results.

Adjusted EBITDA is defined by the Company as net income before, as applicable, (1) equity in net loss of affiliates, (2) income tax expense (benefit), (3) interest expense, (4) interest income, (5) other expense, net, (6) goodwill impairment, (7) deal and transaction costs, (8) integration costs, (9) restructuring costs, (10) acquired tax equalization asset reduction, (11) (gain) loss on sale of businesses and held-for-sale assets, net, (12) gain on termination of the alliance agreement, (13) impairment of long-lived assets, (14) amortization of intangible assets, and (15) depreciation. Adjusted Operating Income is defined by the Company as Adjusted EBITDA exclusive of the depreciation addback noted above. The Company also utilizes ratios of non-GAAP financial measures such as Adjusted EBITDA to Company net sales and Adjusted Operating Income to Company net sales (referred to as Adjusted EBITDA Margin and Adjusted Operating Margin, respectively).

Non-GAAP Net Income is defined by the Company as net income before, as applicable, (1) goodwill impairment, (2) deal and transaction costs, (3) integration costs, (4) restructuring costs, (5) patent infringement settlement gain, net (6) acquired tax equalization asset reduction, (7) loss on extinguishment of debt and modification, (8) (gain) loss on sale of businesses and held-for-sale assets, net, (9) gain on termination of the alliance agreement, (10) Infineum termination fee, net, (11) impairment of long-lived assets, (12) amortization of intangible assets, (13) the tax effect of the foregoing adjustments to net income, stated on a per share basis, divided by diluted weighted average shares outstanding. Non-GAAP EPS is defined as Non-GAAP Net Income divided by our diluted weighted-average shares outstanding.

The Company provides supplemental non-GAAP financial measures to help management and investors to better understand its business and believes these measures provide investors and analysts additional and meaningful information for the assessment of the Company's ongoing results. Management also uses these non-GAAP measures to assist in the evaluation of the performance of its business segments and to make operating decisions.

Management believes the Company's non-GAAP measures help indicate the Company's baseline performance before certain gains, losses or other charges that may not be indicative of the Company's business or future outlook and offer a useful view of business performance in that the measures provide a more consistent means of comparing performance. The Company believes the non-GAAP measures aid investors' overall understanding of the Company's results by providing a higher degree of transparency for such items and providing a level of disclosure that will help investors understand how management plans, measures and evaluates the Company's business performance. Management believes that the inclusion of non-GAAP measures provides greater consistency in its financial reporting from period-to-period and facilitates investors' understanding of the Company's historical operating trends by providing an additional basis for comparisons to prior periods.

Management uses Adjusted EBITDA and Adjusted Operating Income to assist it in evaluations of the Company's operating performance by excluding items that management does not consider as relevant in the results of its ongoing operations. Internally, these non-GAAP measures are used by management for planning and forecasting purposes, including the preparation of internal budgets; for allocating resources to enhance financial performance; for evaluating the effectiveness of operational strategies; and for evaluating the Company's capacity to fund capital expenditures, secure financing and expand its business.

In addition, and as a consequence of the importance of these non-GAAP financial measures in managing its business, the Company's Board of Directors uses non-GAAP financial measures in the evaluation process to determine management compensation.

The Company believes that certain analysts and investors use Adjusted EBITDA, Adjusted Operating Income and Non-GAAP EPS as supplemental measures to evaluate the overall operating performance of firms in the Company's industry. Additionally, lenders or potential lenders use Adjusted EBITDA measures to evaluate the Company's creditworthiness.

The presentation of non-GAAP financial measures is not meant to be considered in isolation, as a substitute for, or superior to, financial measures or information provided in accordance with GAAP. Management strongly encourages investors to review the Company's consolidated financial statements in their entirety and to not rely on any single financial measure.

Management notes that the use of non-GAAP measures has limitations, including but not limited to:

First, non-GAAP financial measures are not standardized. Accordingly, the methodology used to produce the Company's non-GAAP financial measures is not computed under GAAP and may differ notably from the methodology used by other companies. For example, the Company's non-GAAP measure of Adjusted EBITDA may not be directly comparable to EBITDA or an Adjusted EBITDA measure reported by other companies.

Second, the Company's non-GAAP financial measures exclude items such as amortization and depreciation that are recurring. Amortization of intangibles and depreciation have been, and will continue to be for the foreseeable future, significant recurring expenses with an impact upon the Company's results of operations, notwithstanding the lack of immediate impact upon cash flows.

Third, there is no assurance that the Company will not have future charges for fair value write-up of acquired inventory, restructuring activities, deal and transaction costs, integration costs, asset or goodwill impairments, loss on extinguishment of debt or similar items and, therefore, may need to record additional charges (or credits) associated with such items, including the tax effects thereon. The exclusion of these items in the Company's non-GAAP measures should not be construed as an implication that these costs are unusual, infrequent or non-recurring.

Management considers these limitations by providing specific information regarding the GAAP amounts excluded from these non-GAAP financial measures and evaluating these non-GAAP financial measures together with their most directly comparable financial measures calculated in accordance with GAAP. The calculations of Adjusted EBITDA, Adjusted Operating Income, and Non-GAAP EPS, and reconciliations between these financial measures and their most directly comparable GAAP equivalents, are presented below in the accompanying tables.

The reconciliation of GAAP measures to Adjusted Operating Income and Adjusted EBITDA for the years ended December 31, 2024 and 2023 are presented below:

(In thousands)

	2024	2023
Net sales	\$ 3,241,208	\$ 3,523,926
Net income	\$ 292,787	\$ 180,669
Net income - as a % of net sales	9.0%	5.1%
Adjustments to net income		
Equity in net loss of affiliates	933	414
Income tax expense (benefit)	28,332	(8,413)
Interest expense	215,217	312,378
Interest income	(7,368)	(11,257)
Other expense, net	4,021	25,367
GAAP – Operating income	533,922	499,158
Operating margin - as a % of net sales	16.5%	14.2%
Goodwill impairment ¹	—	115,217
Deal and transaction costs ²	—	3,001
Integration costs:		
Professional fees ³	2,574	36,650
Severance costs ⁴	794	1,478
Retention costs ⁵	—	1,687
Other costs ⁶	—	13,710
Restructuring costs ⁷	3,930	14,745
Acquired tax equalization asset reduction ⁸	2,959	—
(Gain) loss on sale of businesses and held-for-sale assets, net ⁹	(4,311)	23,839
Gain on termination of alliance agreement ¹⁰	—	(184,754)
Impairment of long-lived assets ¹¹	12,967	30,464
Amortization of intangible assets ¹²	190,119	214,477
Adjusted Operating Income	742,954	769,672
Adjusted Operating Margin	22.9%	21.8%
Depreciation	188,120	172,683
Adjusted EBITDA	\$ 931,074	\$ 942,355
Adjusted EBITDA – as a % of net sales	28.7%	26.7%

¹ Non-cash impairment charges associated with goodwill of our former Electronic Chemicals business and a small, industrial specialty chemicals business.

² Deal and transaction costs associated with the CMC Materials acquisition and completed divestitures.

³ Represents professional and vendor fees recorded in connection with services provided by consultants, accountants, lawyers and other third-party service providers to assist us in integrating CMC Materials into our operations.

⁴ Represents severance charges related to the integration of the CMC Materials acquisition.

⁵ Represents retention charges related directly to the CMC Materials acquisition and completed divestitures, and are not part of our normal, recurring cash operating expenses.

⁶ Represents other employee-related costs and other costs incurred relating to the CMC Materials acquisition and the completed divestitures. These costs arise outside of the ordinary course of our continuing operations.

⁷ Restructuring charges resulting from cost saving initiatives.

⁸ Represents an asset reduction of an acquired tax equalization asset from the CMC Materials acquisition.

⁹ (Gain) loss from the sale of certain businesses and held-for-sale assets, net.

¹⁰ Gain on termination of the alliance agreement with MacDermid Enthone.

¹¹ Impairment of long-lived assets.

¹² Non-cash amortization expense associated with intangibles acquired in acquisitions.

The reconciliation of GAAP measures to Non-GAAP EPS for the years ended December 31, 2024 and 2023 are presented below:

<i>(In thousands, except per share data)</i>	2024	2023
Net income	\$ 292,787	\$ 180,669
Adjustments to net income:		
Goodwill impairment ¹	—	115,217
Deal and transaction costs ²	—	3,001
Integration costs:		
Professional fees ³	2,574	36,650
Severance costs ⁴	794	1,478
Retention costs ⁵	—	1,687
Other costs ⁶	—	13,710
Restructuring costs ⁷	3,930	14,745
Patent infringement settlement gain, net ⁸	(20,033)	—
Acquired tax equalization asset reduction ⁹	2,959	—
Loss on extinguishment of debt and modification ¹⁰	14,348	29,896
(Gain) loss on sale of businesses and held-for-sale assets, net ¹¹	(4,311)	23,839
Gain on termination of alliance agreement ¹²	—	(184,754)
Infineum termination fee, net ¹³	—	(10,877)
Impairment on long-lived assets ¹⁴	12,967	30,464
Amortization of intangible assets ¹⁵	190,119	214,477
Tax effect of adjustments to net income and discrete tax items ¹⁶	(40,146)	(71,284)
Non-GAAP net income	\$ 455,988	\$ 398,918
Diluted earnings per common share	\$ 1.93	\$ 1.20
Effect of adjustments to net income	\$ 1.07	\$ 1.45
Diluted non-GAAP earnings per common share	\$ 3.00	\$ 2.64
Diluted weighted average shares outstanding	151,840	150,945

¹ Non-cash impairment charges associated with goodwill of our Electronic Chemicals and a small, industrial specialty chemicals businesses.

² Deal and transaction costs associated with the CMC Materials acquisition and completed divestitures.

³ Represents professional and vendor fees recorded in connection with services provided by consultants, accountants, lawyers and other third-party service providers to assist us in integrating CMC Materials into our operations.

⁴ Represents severance charges related to the integration of the CMC Materials acquisition.

⁵ Represents retention charges related directly to the CMC Materials acquisition and completed divestitures, and are not part of our normal, recurring cash operating expenses.

⁶ Represents other employee-related costs and other costs incurred relating to the CMC Materials acquisition and the completed divestitures. These costs arise outside of the ordinary course of our continuing operations.

⁷ Restructuring charges resulting from cost saving initiatives.

⁸ During the fourth quarter of 2024, the Company settled patent infringement litigation and received net proceeds of \$20.0 million.

⁹ Represents an asset reduction of an acquired tax equalization asset from the CMC Materials acquisition.

¹⁰ Loss on extinguishment of debt and modification of our Existing Credit Agreement.

¹¹ (Gain) loss from the sale of certain businesses and held-for-sale assets, net.

¹² Gain on termination of the alliance agreement with MacDermid Enthone.

¹³ Non-recurring gain from the termination fee with Infineum.

¹⁴ Impairment of long-lived assets.

¹⁵ Non-cash amortization expense associated with intangibles acquired in acquisitions.

¹⁶ The tax effect of pre-tax adjustments to net income was calculated using the applicable marginal tax rate for each respective year.

Item 7A. Quantitative and Qualitative Disclosure About Market Risks.

Entegris' principal financial market risks are sensitive to interest rates and foreign currency exchange rates. The Company's interest-bearing cash and cash equivalents and variable rate debt are subject to interest rate fluctuations. The Company's cash and cash equivalents include cash on hand and highly-liquid debt securities with original maturities of three months or less. A 100-basis point change in interest rates would potentially increase or decrease annual net income by approximately \$2.5 million and \$3.4 million for the years ended December 31, 2024 and 2023, respectively. On July 28, 2022, the Company entered into a floating-to-fixed interest rate swap agreement to hedge the variability in SOFR-based interest payments associated with \$1.95 billion of its \$2.495 billion Initial Term Loan Facility. The notional amount of the swap is \$750.0 million at December 31, 2024 and is scheduled to decrease quarterly and will expire on December 30, 2025.

The cash flows and results of operations of the Company's foreign-based operations are subject to fluctuations in foreign currency exchange rates. Approximately 16.7% and 22.0% of the Company's sales during 2024 and 2023 were collectively denominated in the South Korean won, New Taiwan dollar, Chinese renminbi, Canadian dollar, Malaysian ringgit, Singapore dollar, euro, Israeli shekel and the Japanese yen. Financial results therefore will be affected by changes in currency exchange rates. If all foreign currencies were to see a 10% reduction versus the U.S. dollar during the years ended December 31, 2024 and 2023, revenue would be negatively impacted by approximately \$53.2 million and \$76.8 million, respectively.

The Company occasionally uses derivative financial instruments to manage the foreign currency exchange rate risks associated with its foreign-based operations. However, we are unlikely to be able to hedge these exposures completely. We do not enter into forward contracts or other derivative instruments for speculative or trading purposes. See Note 12 of the consolidated financials for additional information.

Item 8. Financial Statements and Supplementary Data.

The information called for by this item is set forth in the Consolidated Financial Statements covered by the Report of Independent Registered Public Accounting Firm at the end of this report.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

Not applicable.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Based on management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), are effective to provide reasonable assurance that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management 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 Exchange Act) to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of consolidated financial statements for external purposes in accordance with GAAP.

Management assessed our internal control over financial reporting as of December 31, 2024. Management based its assessment on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Management's assessment included evaluation of elements such as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies, and our overall control environment.

Based on its assessment, management has concluded that our internal control over financial reporting was effective as of the end of the fiscal year to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external reporting purposes in accordance with GAAP. We reviewed the results of management's assessment with the Audit and Finance Committee of our Board of Directors.

The effectiveness of our internal control over financial reporting as of December 31, 2024 has been audited by KPMG LLP, our independent registered public accounting firm, as stated in their report which is included in F-2 of this Annual Report.

Inherent Limitations on Effectiveness of Controls

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well-designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected.

Item 9B. Other Information.

During the quarter ended December 31, 2024, no director or officer, as defined in Rule 16a-1 under the Exchange Act, adopted, modified or terminated a "Rule 10b5-1 trading arrangement" or a "non-Rule 10b5-1 trading arrangement", each as defined in Item 408 of Regulation S-K.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Except as set forth below, the information required by this Item 10 has been omitted from this report, and is incorporated by reference to our Definitive Proxy Statement for the Entegris, Inc. Annual Meeting of Stockholders, which is currently scheduled to be held on April 23, 2025, and to be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of our 2024 fiscal year.

CODE OF BUSINESS ETHICS

In 2005, our board of directors adopted a code of business ethics, The Entegris, Inc. Code of Business Ethics, applicable to all of our executives, directors and employees, as well as a set of corporate governance guidelines, which have been updated from time to time. The Entegris, Inc. Code of Business Ethics, the Corporate Governance Guidelines and the charters for our Audit & Finance Committee, Environmental, Health, Safety & Sustainability Committee, Governance & Nominating Committee and our Management Development & Compensation Committee all appear on our website at <http://www.Entegris.com> under "Investor Relations - Corporate Governance". The Entegris, Inc. Code of Business Ethics, Corporate Governance Guidelines and committee charters are also available, free of charge, in print to any shareholder that requests a copy. Copies may be obtained by contacting our Secretary through our corporate headquarters. The Company intends to comply with the requirements of Item 5.05 of Form 8-K with respect to any amendment to, or waiver of, the provisions of the Entegris, Inc. Code of Business Ethics applicable to the registrant's Chief Executive Officer, Chief Financial Officer, Chief Accounting Officer or Controller by posting notice of any such amendment or waiver at the same location on our website.

INSIDER TRADING POLICY

We have adopted an insider trading policy governing the purchase, sale and other dispositions of our securities by our directors, officers and employees which we believe is reasonably designed to promote compliance with insider trading laws, rules and regulations, and any applicable listing standards. A copy of the policy is filed as Exhibit 19.1 to this Annual Report on Form 10-K.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following is a list of our Executive Officers, their ages and their offices, as of the date of this Annual Report on Form 10-K.

<u>Name</u>	<u>Age</u>	<u>Office</u>
Bertrand Loy	59	<i>President and Chief Executive Officer</i>
Linda LaGorga	56	<i>Senior Vice President and Chief Financial Officer</i>
Sue Rice	66	<i>Senior Vice President, Global Human Resources</i>
Joe Colella	43	<i>Senior Vice President, General Counsel, Chief Compliance Officer and Secretary</i>
Jim O'Neill	60	<i>Senior Vice President and Chief Technology Officer</i>
Olivier Blachier	51	<i>Senior Vice President, Chief Strategy Officer</i>
Clint Haris	52	<i>Senior Vice President and President, Advanced Purity Solutions</i>
Daniel Woodland	54	<i>Senior Vice President and President, Materials Solutions</i>
Michael Besnard	54	<i>Senior Vice President, Chief Commercial Officer</i>
Neil Richards	52	<i>Senior Vice President, Global Operations, Supply Chain, and Quality</i>
Michael D. Sauer	59	<i>Vice President, Controller & Chief Accounting Officer</i>

Bertrand Loy has been our Chief Executive Officer, President and a director since November 2012 and Chair of our Board of Directors since 2023. From July 2008 to November 2012, he served as our Executive Vice President and Chief Operating Officer. From August 2005 until July 2008, he served as our Executive Vice President in charge of our IT, global supply chain and manufacturing operations. He served as the Vice President and Chief Financial Officer of Mykrolis, a company spun out of Millipore Corporation, a life science products company, from January 2001 until August 2005. Prior to that, Mr. Loy served as the Chief Information Officer of Millipore Corporation during 1999 and 2000, and previously served in various strategic planning, global supply chain and financial roles with Millipore and Sandoz Pharmaceuticals (now Novartis), a pharmaceutical company. He has served on the board of directors of Harvard Bioscience, Inc., a global manufacturer of a broad range of life sciences solutions, since November 2014, and is currently the lead independent director. Since July 2013, Mr. Loy has also been on the board of directors of SEMI, the global industry association representing the electronics manufacturing supply chain, serving as the chairman of the association until December 2022.

Linda LaGorga has been our Senior Vice President and Chief Financial Officer since May 2023. Ms. LaGorga joined the Company from Honeywell International Inc., where she most recently served from March 2022 until April 2023 as vice president and Chief Financial Officer of Honeywell's UOP business unit, which provides process technology, catalysts, adsorbents, and equipment to the refining, gas processing, and petrochemical industries. Previously, from 2021 until 2022, she served as vice president and Chief Financial Officer of the Honeywell aerospace mechanical systems and components business unit. From 2018 to 2021, she led Honeywell's corporate financial planning and analysis organization. Prior to joining Honeywell, from 2013 until 2018, Ms. LaGorga served as the global treasurer and led business development for Bausch Health Companies Inc. Earlier in her career, she held various positions of increasing responsibilities at Goldman Sachs, most recently serving as a managing director in the investment banking division.

Sue Rice has been our Senior Vice President of Global Human Resources since September 2017. Prior to that, Ms. Rice served as Senior Vice President and Chief Human Resources Officer for Thermo Fisher Scientific, a scientific equipment company, from 2013 to 2017, Region Vice President HR Asia Pacific & Emerging Markets from 2009 to 2013 and Group Vice President, HR Analytical Technologies Group from 2006 to 2009. Prior to that, Ms. Rice held senior human resource positions with Fidelity Human Resources Services Company and Sherbrooke Associates.

Joe Colella has been our Senior Vice President, General Counsel, Chief Compliance Officer and Secretary since April 2020. Previously, Mr. Colella served as our Vice President, Deputy General Counsel from December 2018 until April 2020, Assistant General Counsel from April 2018 until December 2018 and Senior Corporate Counsel from December 2013 until April 2018. Prior to joining Entegris, Mr. Colella served as an associate at an international law firm from 2007 until 2013.

Jim O'Neill, Ph.D. has been our Senior Vice President and Chief Technology Officer since September 2019, having previously served as our Vice President, Chief Technology Officer beginning in April 2014 when he joined Entegris as part of our acquisition of ATMI. At ATMI, Dr. O'Neill was Senior Vice President of Electronic Materials from January 2012 to April 2014. Prior to that, he held numerous technical and leadership roles in semiconductor research and development with over 23 years at IBM.

Olivier Blachier has been our Senior Vice President, Chief Strategy Officer since February 2024. From November 2021 until February 2024, he was our Senior Vice President, Business and New Markets Development. Since joining the Company in November 2021, he has been responsible for the Company's strategic planning, merger and acquisition activities and for the

commercialization of emerging businesses. Before joining Entegris, Mr. Blachier held various senior leadership positions between 2007 and 2021 at Air Liquide Group, a global leader in gases, technologies and services for the industrial and healthcare sectors. Most recently, he served as President of Air Liquide Far Eastern from September 2018 until June 2021 and APAC Vice President, Hydrogen & Energy Transition, from June 2021 until October 2021. From 1997 to 2007, Mr. Blachier worked for Edwards, Ltd., a global vacuum and abatement process leader and subsidiary of BOC Group, where he held multiple roles in the U.S. and United Kingdom, including leading acquisitions and joint ventures.

Clint Haris has been our Senior Vice President and President, Advanced Purity Solutions since October 2024. Previously, he served as our Senior Vice President and President, Microcontamination Control from July 2022 until October 2024, our Senior Vice President and General Manager, Microcontamination Control from July 2016 until July 2022 and our Vice President, Liquid Microcontamination Control from August 2014 until July 2016. Prior to joining Entegris, Mr. Haris served in a variety of executive roles at Brooks Automation Inc., including Senior Vice President, Life Science Systems from 2010 until 2014 and Senior Vice President and General Manager, Systems Solutions from 2009 until 2010.

Daniel Woodland, Ph.D. joined Entegris in 2022 as part of the acquisition of CMC Materials. Dr. Woodland has served as our Senior Vice President and President, Materials Solutions since September 2023. From July 2022 until September 2023, Dr. Woodland served as Senior Vice President and President, Advanced Planarization Solution. Prior to joining Entegris, Dr. Woodland served several roles at CMC Materials (previously Cabot Microelectronics) since 2003, including as Vice President and President, Electronic Materials from September 2019 until July 2022, Vice President and Chief Marketing and Operations Officer from October 2017 until November 2018, and Vice President of Marketing from January 2015 until October 2017.

Michael Besnard has been our Senior Vice President and Chief Commercial Officer since 2016. Prior to that, Mr. Besnard served as Vice President of Global Strategic Accounts from 2014 until 2016. Prior to joining Entegris as part of the acquisition of ATMI, Mr. Besnard served ATMI as the vice president of global strategic accounts. Prior to that, he served as director of business development for Copper Plating at MacDermid Enthone (previously Enthone).

Neil Richards has been our Senior Vice President, Global Operations, Supply Chain, and Quality since September 2019. Prior to that, Mr. Richards served as Vice President of Operations for the Company's Specialty Chemicals and Engineered Materials division from 2016 until September 2019. Prior to joining Entegris, Mr. Richards held several positions with the BOC Group, which merged with Linde in 2006.

Michael D. Sauer has been our Vice President, Controller and Chief Accounting Officer since June 2012. Prior to that, he served as the Corporate Controller since 2008. From the time of the merger with Mykrolis in August 2005 until April 2008, Mr. Sauer served as Director of Treasury and Risk Management. Mr. Sauer joined Fluoroware, Inc., a predecessor to Entegris Minnesota, in 1988 and held a variety of finance and accounting positions until 2001 when he became the Director of Business Development for Entegris Minnesota, the successor to Fluoroware, serving in that position until the merger with Mykrolis.

Item 11. Executive Compensation.

The information required by this Item 11 has been omitted from this report, and is incorporated by reference to our Definitive Proxy Statement for the Entegris, Inc. Annual Meeting of Stockholders to be held on April 23, 2025, which will be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of our 2024 fiscal year.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

Securities Authorized for Issuance Under Equity Compensation Plans:

As of December 31, 2024, our equity compensation plan information is as follows:

Equity Compensation Plan Information			
Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights ⁽¹⁾ (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) ⁽²⁾⁽³⁾ (c)
Equity compensation plans approved by security holders	2,617,736	\$ 71.76	7,997,763
Equity compensation plans not approved by security holders	—	—	—
Total	<u>2,617,736</u>	<u>\$ 71.76</u>	<u>7,997,763</u>

- (1) The weighted average exercise price does not take into account the shares issuable upon vesting of outstanding restricted stock units, which have no exercise price.

- (2) These shares are available for future issuance under the 2020 Stock Plan in the form of stock options, restricted stock units, performance shares and other stock awards in accordance with the terms of the 2020 Stock Plan.
- (3) Includes 879,194 shares remaining available for future issuance under the Company's Employee Stock Purchase Plan as of December 31, 2024.

The other information required by this Item 12 has been omitted from this report and is incorporated by reference to our Definitive Proxy Statement for the Entegris, Inc. Annual Meeting of Stockholders to be held on April 23, 2025, which will be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of our 2024 fiscal year.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item 13 has been omitted from this report and is incorporated by reference to our Definitive Proxy Statement for the Entegris, Inc. Annual Meeting of Stockholders to be held on April 23, 2025, and which will be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of our 2024 fiscal year.

Item 14. Principal Accountant Fees and Services.

The information required by this Item 14 has been omitted from this report, and is incorporated by reference to our Definitive Proxy Statement for the Entegris, Inc. Annual Meeting of Stockholders to be held on April 23, 2025, which will be filed with the Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of our 2024 fiscal year.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) The following Financial Statements are included herein:

1. Financial Statements:

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets at December 31, 2024 and 2023

Consolidated Statements of Operations for the Years Ended December 31, 2024, 2023 and 2022

Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2024, 2023 and 2022

Consolidated Statements of Equity for the Years Ended December 31, 2024, 2023 and 2022

Consolidated Statements of Cash Flows for the Years Ended December 31, 2024, 2023 and 2022

Notes to Consolidated Financial Statements

2. Financial Statement Schedule - All financial statement schedules have been omitted since the information is either not applicable or is included in the consolidated financial statements notes thereof.

3. Exhibits - The following exhibits are incorporated by reference into this Annual Report on Form 10-K:

Reg. S-K Item 601(b) Reference	Document Incorporated	Referenced Document on file with the Commission
2.1	Agreement and Plan of Merger, dated as of December 14, 2021, by and among Entegris, Inc., CMC Materials, Inc. and Yosemite Merger Sub, Inc.	Exhibit 2.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on December 16, 2021
3.1	Amended and Restated Certificate of Incorporation of Entegris, Inc., as amended	Exhibit 3.1 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2011
3.2	By-Laws of Entegris, Inc., as amended December 8, 2022	Exhibit 3.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on December 9, 2022
4.1	Form of certificate representing shares of Common Stock, \$.01 par value per share	Exhibit 4.1 to Form S-4 Registration Statement of Entegris, Inc. and Eagle DE, Inc. (No. 333-124719)
4.2	Indenture, dated as of April 30, 2020, by and among the Company, certain subsidiaries of the Company and Wells Fargo Bank, National Association, as trustee, including the form of note representing the 2028 Notes	Exhibit 4.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on April 30, 2020
4.3	Indenture, dated as of April 30, 2021, by and among the Company, certain subsidiaries of the Company and Wells Fargo Bank, National Association, as trustee, including the form of note representing the 2029 Notes	Exhibit 4.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on April 30, 2021
4.4	Indenture, dated as of April 14, 2022, by and among Entegris Escrow Corporation, as escrow issuer and Truist Bank, as trustee and notes collateral agent, including the form of note issuable thereunder	Exhibit 4.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on April 15, 2022
4.5	Indenture, dated as of June 30, 2022, by and among Entegris and Truist Bank, as trustee, including the form of note representing the Senior Unsecured Notes	Exhibit 4.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on June 30, 2022
4.6	First Supplemental Indenture to the 2029 Secured Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Truist Bank, as trustee and notes collateral agent	Exhibit 4.3 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
4.7	First Supplemental Indenture to the 2030 Unsecured Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Truist Bank, as trustee.	Exhibit 4.4 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on July 6, 2022

4.8	Equal Priority Intercreditor Agreement, dated as of July 6, 2022, among Entegris, certain subsidiaries of Entegris, Morgan Stanley Senior Funding, Inc., as senior credit facilities collateral agent, and Truist Bank, as notes collateral agent.	Exhibit 4.5 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
4.9	First Supplemental Indenture to the 2028 Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Computershare Trust Company, National Association, as successor to Wells Fargo Bank, National Association, as trustee.	Exhibit 4.7 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
4.10	Supplemental Indenture to the 2029 Notes Indenture, dated as of July 6, 2022, by and among Entegris, certain subsidiaries of Entegris and Computershare Trust Company, National Association, as successor to Wells Fargo Bank, National Association, as trustee.	Exhibit 4.9 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
4.11	Indenture, dated as of June 30, 2022, by and among Entegris Escrow Corporation, as escrow issuer and Truist Bank, as trustee, including the form of note issuable thereunder.	Exhibit 4.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on June 30, 2022
4.12	Amendment and Restatement Agreement, dated as of July 6, 2022, among Entegris, as borrower, certain subsidiaries of Entegris, as guarantors, the lenders party thereto, the issuing banks party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent and collateral agent.	Exhibit 4.10 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on July 6, 2022
4.13	Amendment Number 1 to the CMC Materials, Inc. 2021 Omnibus Incentive Plan*	Exhibit 4.3 to Entegris, Inc. Registration Statement on Form S-8 filed with the Securities and Exchange Commission on July 7, 2022
4.14	Amendment No. 1, dated as of March 10, 2023, among Entegris, Inc., as borrower, the other credit parties party thereto, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent.	Exhibit 10.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on March 13, 2023
4.15	Amendment No. 2, dated as of September 11, 2023, among Entegris, Inc., as borrower, the other credit parties party thereto, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent.	Exhibit 10.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on September 13, 2023
4.16	Amendment No. 3, dated as of March 28, 2024, among Entegris, as borrower, the other credit parties party thereto, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent	Exhibit 10.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on March 28, 2024
4.17	Description of Capital Stock	Exhibit 4.1 to Entegris, Inc. Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 7, 2020
10.1	CMC Materials, Inc. 2021 Omnibus Incentive Plan*	Exhibit 10.1 to Entegris Registration Statement on Form S-3 filed with the Securities and Exchange Commission on July 7, 2022
10.2	Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan*	Exhibit 10.2 to Entegris Registration Statement on Form S-3 filed with the Securities and Exchange Commission on July 7, 2022
10.3	Entegris, Inc. – 2010 Stock Plan, as amended*	Exhibit 10.1 to Entegris, Inc. Quarterly Report on Form 10-Q for the period ended July 3, 2010
10.4	Entegris, Inc. 2020 Stock Plan*	Annex 1 to the Entegris, Inc. Schedule 14A proxy statement for its 2020 Annual Meeting of Stockholders (No. 001-32598), as filed with the Securities and Exchange Commission on March 18, 2020
10.5	Entegris, Inc. Outside Directors' Stock Option Plan*	Exhibit 10.2 to Entegris, Inc. Registration Statement on Form S-1 (No. 333-33668)

10.6	Entegris, Inc. 2024 Employee Stock Purchase Plan*	Appendix B to the Entegris, Inc. Schedule 14A proxy statement for its 2024 Annual Meeting of Stockholders (No. 001-32598), as filed with the Securities and Exchange Commission on March 18, 2024
10.7	Second Amended and Restated Entegris Incentive Plan*	Exhibit 10.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on May 24, 2017
10.8	Lease Agreement, dated April 1, 2002 between Nortel Networks HPOCS Inc. and Mykrolis Corporation, relating to Executive office, R&D and manufacturing facility located at 129 Concord Road Billerica, MA	Exhibit 10.1.3 to Mykrolis Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2002
10.9	Amendment of Lease between Entegris, Inc. and KBS Rivertech, LLC dated April 1, 2012	Exhibit 10.1 to Entegris, Inc. Quarterly Report on Form 10-Q for the period ended June 30, 2012
10.10	Second Amendment of Lease, dated March 8, 2016, between Entegris, Inc. and KBS Rivertech, LLC	Exhibit 10.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on March 11, 2016
10.11	Third Amendment to Lease Agreement, dated as of October 21, 2021, between Entegris, Inc. and Rivertech Owner LLC	Exhibit 10.4 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2021
10.12	Fourth Amendment to Lease Agreement, dated as of September 16, 2022, by and between the Company and Rivertech Owner LLC	Exhibit 10.1 to Entegris, Inc. Quarterly Report on Form 10-Q for the period ended October 1, 2022
10.13	Form of Indemnification Agreement between Entegris, Inc. and each of its executive officers and directors*	Exhibit 10.30 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended August 27, 2005
10.14	Form of Executive Change of Control Termination Agreement between Entegris, Inc. and certain of its executive officers*	Exhibit 10.31 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended August 27, 2005
10.15	Form of Revised Executive Change of Control Termination Agreement between Entegris, Inc. and certain of its executive officers executed in 2015 (other than those executive officers who executed the form previously filed)*	Exhibit 10.1 to Entegris, Inc. Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 29, 2016
10.16	Entegris, Inc. 2018 Stock Option Award Agreement*	Exhibit 10.3 to Entegris, Inc. Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 11, 2019
10.17	Entegris, Inc. 2019 Stock Option Award Agreement*	Exhibit 10.3 to Entegris, Inc. Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 7, 2020
10.18	Entegris, Inc. 2020 Stock Option Award Agreement (under 2010 Stock Plan)*	Exhibit 10.3 to Entegris, Inc. Quarterly Report on Form 10-Q for the period ended March 28, 2020
10.19	Entegris, Inc. 2021 RSU Award Agreement*	Exhibit 10.3 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2020
10.20	Entegris, Inc. 2021 Stock Option Award Agreement*	Exhibit 10.4 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2020
10.21	Entegris, Inc. 2022 Performance-Based RSU Award Agreement*	Exhibit 10.1 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2021
10.22	Entegris, Inc. 2022 RSU Award Agreement*	Exhibit 10.2 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2021
10.23	Entegris, Inc. 2022 Stock Option Award Agreement*	Exhibit 10.3 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2021

10.24	Entegris, Inc. 2023 Performance-Based RSU Award Agreement *	Exhibit 10.1 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2022
10.25	Entegris, Inc. 2023 RSU Award Agreement *	Exhibit 10.2 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2022
10.26	Entegris, Inc. 2023 Stock Option Award Agreement *	Exhibit 10.3 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2022
10.27	Executive Employment Agreement, effective November 28, 2012, between Entegris, Inc. and Bertrand Loy*	Exhibit 10.1 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2012
10.28	Amendment No. 1, dated April 26, 2013, to Executive Change in Control Termination Agreement, between Entegris, Inc. and Bertrand Loy*	Exhibit 99.1 to Entegris, Inc. Current Report on Form 8-K filed with the Securities and Exchange Commission on April 26, 2013
10.29	Amendment No. 2, dated February 5, 2020, to Executive Change in Control Termination Agreement, between Entegris, Inc. and Bertrand Loy*	Exhibit 10.4 to Entegris, Inc. Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 7, 2020
10.30	Employment Offer Letter, dated April 8, 2023, between Entegris, Inc. and Linda LaGorga*	Exhibit 10.1 to Entegris, Inc. Quarterly Report on Form 10-Q for the period ended April 1, 2023
10.31	Amended and Restated Supplemental Executive Retirement Plan for Key Salaried Employees of Entegris, Inc.*	Exhibit 10.38 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2023
10.32	Amended and Restated Entegris, Inc. Clawback Policy	Exhibit 97 to Entegris, Inc. Annual Report on Form 10-K for the fiscal year ended December 31, 2023

* A “management contract or compensatory plan”

The Company hereby files as exhibits to this Annual Report on Form 10-K the following documents:

Reg. S-K

Item 601(b)

Reference	Exhibit No.	Documents Filed Herewith
(10)	10.33	Deferred Compensation Plan for Non-Employee Directors of Entegris, Inc.*
(10)	10.34	Form of Entegris, Inc. Performance Share Unit Award Agreement (2024+)*
(10)	10.35	Form of Entegris, Inc. Global RSU Award Agreement (2024+)*
(10)	10.36	Form of Entegris, Inc. Stock Option Award Agreement (2024+)*
(10)	10.37	Form of Entegris, Inc. RSU Award Agreement (Directors) (2024+)*
(19)	19.1	Insider Trading Policy of Entegris, Inc.
(21)	21.1	Subsidiaries of Entegris, Inc.
(23)	23.1	Consent of Independent Registered Public Accounting Firm
(24)	24.1	Power of Attorney by the Directors of Entegris, Inc.
(31)	31.1	Certification required by Rule 13a-14(a) in accordance with Section 302 of the Sarbanes—Oxley Act of 2002.
(31)	31.2	Certification required by Rule 13a-14(a) in accordance with Section 302 of the Sarbanes—Oxley Act of 2002.
(32)	32.1	Certification required by Rule 13a-14(b) and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
(32)	32.2	Certification required by Rule 13a-14(b) and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
(101)	101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
(101)	101.SCH	XBRL Taxonomy Extension Schema Document
(101)	101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
(101)	101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
(101)	101.LAB	XBRL Taxonomy Extension Label Linkbase Document
(101)	101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
(104)	104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* A “management contract or compensatory plan”

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.

ENTEGRIS, INC.

Date: February 12, 2025

By /s/ BERTRAND LOY

Bertrand Loy
President & Chief Executive Officer

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/ BERTRAND LOY</u> Bertrand Loy	President, Chief Executive Officer and Director (Principal executive officer)	February 12, 2025
<u>/s/ LINDA LAGORGA</u> Linda LaGorga	Senior Vice President, Chief Financial Officer (Principal financial officer)	February 12, 2025
<u>/s/ MICHAEL D. SAUER</u> Michael D. Sauer	Vice President, Controller & Chief Accounting Officer (Principal accounting officer)	February 12, 2025
<u>RODNEY CLARK*</u> Rodney Clark	Director	February 12, 2025
<u>JAMES F. GENTILCORE*</u> James F. Gentilcore	Director	February 12, 2025
<u>YVETTE KANOUFF*</u> Yvette Kanouff	Director	February 12, 2025
<u>JAMES P. LEDERER*</u> James P. Lederer	Director	February 12, 2025
<u>MARY G. PUMA*</u> Mary G. Puma	Director	February 12, 2025
<u>DAVID REEDER*</u> David Reeder	Director	February 12, 2025
<u>AZITA SALEKI-GERHARDT*</u> Azita Saleki-Gerhardt	Director	February 12, 2025

*By /s/ LINDA LAGORGA

Linda LaGorga, Attorney-in-fact

ENTEGRIS, INC.
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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Entegris, Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Entegris, Inc. and subsidiaries (the Company) as of December 31, 2024 and 2023, the related consolidated statements of operations, comprehensive income, equity, and cash flows for each of the years in the three-year period ended December 31, 2024, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

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, 2024 and 2023, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2024, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

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 the accompanying Management Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion 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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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 Matter

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter 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.

Annual impairment evaluation of the MS reporting unit

As discussed in Note 9 to the consolidated financial statements, the goodwill balance as of December 31, 2024 was \$3.6 billion, of which a portion of which related to the Materials Solutions (MS) reporting unit. The Company performs goodwill impairment testing on an annual basis and whenever events or changes in circumstances indicate that the carrying value of a reporting unit exceeds its fair value. This includes annually assessing 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.

We identified the evaluation of qualitative factors within the goodwill impairment testing for the MS reporting unit as a critical audit matter. Subjective auditor judgment was required to evaluate certain qualitative factors, including macroeconomic conditions, industry and market considerations, and overall financial performance. These qualitative factors could have had a significant effect on the Company's qualitative assessment and the determination of whether further quantitative analysis of goodwill impairment was required.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of an internal control related to the evaluation of qualitative factors within the goodwill impairment testing. We evaluated macroeconomic conditions including general economic conditions, fluctuations in foreign exchange rates, and inflation by key regions around the world for negative indicators by comparing to analyst reports and other external information. We evaluated information from analyst reports in the semiconductor industry, which were compared to industry and market considerations used by the Company. We evaluated the financial performance of the reporting unit by comparing actual performance against historical projections.

/s/ KPMG LLP

We or our predecessor firms have served as the Company's auditor since 1966.

Minneapolis, Minnesota
February 12, 2025

ENTEGRIS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(In thousands, except per share data)

	December 31, 2024	December 31, 2023
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 329,213	\$ 456,929
Trade accounts and notes receivable, net	495,312	457,052
Inventories, net	638,080	607,051
Deferred tax charges and refundable income taxes	39,613	63,879
Assets held-for-sale	5,519	278,753
Other current assets	108,567	113,663
Total current assets	1,616,304	1,977,327
Property, plant and equipment, net	1,622,926	1,468,043
Other assets:		
Right-of-use assets - Operating lease	62,548	57,990
Right-of-use assets - Finance lease	20,927	22,409
Goodwill	3,943,571	3,945,860
Intangible assets, net	1,091,746	1,281,969
Deferred tax assets and other noncurrent tax assets	12,463	31,432
Other noncurrent assets	24,135	27,561
Total assets	\$ 8,394,620	\$ 8,812,591
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	193,261	134,211
Accrued payroll and related benefits	114,668	109,559
Accrued interest payable	24,316	24,759
Liabilities held-for-sale	1,213	19,223
Other accrued liabilities	111,188	148,840
Income taxes payable	80,532	77,403
Total current liabilities	525,178	513,995
Long-term debt	3,981,105	4,577,141
Pension benefit obligations and other liabilities	54,484	53,733
Deferred tax liabilities and other noncurrent tax liabilities	70,190	190,142
Long term lease liability - Operating lease	53,758	49,719
Long term lease liability - Finance lease	18,401	19,267
Equity:		
Preferred stock, par value \$.01; 5,000 shares authorized; none issued and outstanding as of December 31, 2024 and December 31, 2023	—	—
Common stock, par value \$.01; 400,000 shares authorized; issued and outstanding shares as of December 31, 2024: 151,324 and 151,122, respectively; issued and outstanding shares as of December 31, 2023: 150,566 and 150,364, respectively	1,513	1,506
Treasury stock, common, at cost: 202 shares held as of December 31, 2024 and December 31, 2023	(7,112)	(7,112)
Additional paid-in capital	2,385,343	2,305,367
Retained earnings	1,383,877	1,151,765
Accumulated other comprehensive loss	(72,117)	(42,932)
Total equity	3,691,504	3,408,594
Total liabilities and equity	\$ 8,394,620	\$ 8,812,591

See the accompanying notes to consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

<i>(In thousands, except per share data)</i>	Year ended December 31, 2024	Year ended December 31, 2023	Year ended December 31, 2022
Net sales	\$ 3,241,208	\$ 3,523,926	\$ 3,282,033
Cost of sales	1,754,489	2,026,321	1,885,620
Gross profit	1,486,719	1,497,605	1,396,413
Selling, general and administrative expenses	446,567	576,194	543,485
Engineering, research and development expenses	316,111	277,313	228,994
Amortization of intangible assets	190,119	214,477	143,953
Goodwill impairment	—	115,217	—
Gain on termination of alliance agreement	—	(184,754)	—
Operating income	533,922	499,158	479,981
Interest expense	215,217	312,378	212,669
Interest income	(7,368)	(11,257)	(3,694)
Other expense, net	4,021	25,367	23,926
Income before income tax expense (benefit)	322,052	172,670	247,080
Income tax expense (benefit)	28,332	(8,413)	38,160
Equity in net loss of affiliates	933	414	—
Net income	\$ 292,787	\$ 180,669	\$ 208,920
Basic net income per common share	\$ 1.94	\$ 1.21	\$ 1.47
Diluted net income per common share	\$ 1.93	\$ 1.20	\$ 1.46
Weighted average shares outstanding			
Basic	150,946	149,900	142,294
Diluted	151,840	150,945	143,146

See the accompanying notes to consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<i>(In thousands)</i>	Year ended December 31, 2024	Year ended December 31, 2023	Year ended December 31, 2022
Net income	\$ 292,787	\$ 180,669	\$ 208,920
Other comprehensive (loss) income, net of tax			
Foreign currency translation adjustments	(15,750)	(12,797)	(10,220)
Pension adjustments	(324)	397	1,139
Interest rate swap - cash flow hedge, net of tax (benefit) expense of \$(3,824), \$(5,085) and \$10,520 for December 31, 2024, December 31, 2023 and December 31, 2022, respectively.	(13,111)	(17,435)	36,069
Other comprehensive (loss) income, net of tax	(29,185)	(29,835)	26,988
Comprehensive income	\$ 263,602	\$ 150,834	\$ 235,908

See the accompanying notes to consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY

<i>(In thousands)</i>	Common shares issued	Treasury shares	Common shares outstanding	Common stock	Treasury stock	Additional paid-in capital	Retained earnings	Foreign currency translation adjustments	Defined benefit pension adjustments	Interest rate swap - cash flow hedge	Total
Balance at December 31, 2021	135,719	(202)	135,517	1,357	(7,112)	879,845	879,776	(38,863)	(1,222)	—	1,713,781
Shares issued under stock plans	692	—	692	7	—	(6,659)	—	—	—	—	(6,652)
Share-based compensation expense	—	—	—	—	—	66,578	—	—	—	—	66,578
Issuance of common stock in connection with CMC Materials acquisition	12,928	—	12,928	129	—	1,265,561	—	—	—	—	1,265,690
Dividends declared (\$0.40 per share)	—	—	—	—	—	—	(57,305)	—	—	—	(57,305)
Interest rate swap - cash flow hedge	—	—	—	—	—	—	—	—	—	36,069	36,069
Pension adjustment	—	—	—	—	—	—	—	—	1,139	—	1,139
Foreign currency translation	—	—	—	—	—	—	—	(10,220)	—	—	(10,220)
Net income	—	—	—	—	—	—	208,920	—	—	—	208,920
Balance at December 31, 2022	149,339	(202)	149,137	1,493	(7,112)	2,205,325	1,031,391	(49,083)	(83)	36,069	3,218,000
Shares issued under stock plans	1,227	—	1,227	13	—	38,671	—	—	—	—	38,684
Share-based compensation expense	—	—	—	—	—	61,371	—	—	—	—	61,371
Dividends declared (\$0.40 per share)	—	—	—	—	—	—	(60,295)	—	—	—	(60,295)
Interest rate swap - cash flow hedge	—	—	—	—	—	—	—	—	—	(17,435)	(17,435)
Pension adjustment	—	—	—	—	—	—	—	—	397	—	397
Foreign currency translation	—	—	—	—	—	—	—	(12,797)	—	—	(12,797)
Net income	—	—	—	—	—	—	180,669	—	—	—	180,669
Balance at December 31, 2023	150,566	(202)	150,364	1,506	(7,112)	2,305,367	1,151,765	(61,880)	314	18,634	3,408,594
Shares issued under stock plans	758	—	758	7	—	14,117	—	—	—	—	14,124
Share-based compensation expense	—	—	—	—	—	65,859	—	—	—	—	65,859
Dividends declared (\$0.40 per share)	—	—	—	—	—	—	(60,675)	—	—	—	(60,675)
Interest rate swap - cash flow hedge	—	—	—	—	—	—	—	—	—	(13,111)	(13,111)
Pension adjustment	—	—	—	—	—	—	—	—	(324)	—	(324)
Foreign currency translation	—	—	—	—	—	—	—	(15,750)	—	—	(15,750)
Net income	—	—	—	—	—	—	292,787	—	—	—	292,787
Balance at December 31, 2024	151,324	(202)	151,122	\$ 1,513	\$ (7,112)	\$ 2,385,343	\$ 1,383,877	\$ (77,630)	\$ (10)	\$ 5,523	\$ 3,691,504

See the accompanying notes to consolidated financial statements.

ENTEGRIS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

<i>(In thousands)</i>	Year ended December 31, 2024	Year ended December 31, 2023	Year ended December 31, 2022
Operating activities:			
Net income	\$ 292,787	\$ 180,669	\$ 208,920
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	188,120	172,683	135,371
Amortization	190,119	214,477	143,953
Share-based compensation expense	65,859	61,371	66,577
Charge for fair value mark-up of acquired inventory sold	—	—	61,932
Provision for deferred income taxes	(78,902)	(145,606)	(102,744)
Impairment of goodwill	—	115,217	—
Loss on extinguishment of debt	13,386	27,865	3,287
(Gain) loss from sale of businesses and held-for-sale assets, net	(4,311)	23,839	—
Impairment on long-lived assets	12,967	30,464	—
Gain on termination of alliance agreement	—	(184,754)	—
Charge for excess and obsolete inventory	39,885	38,184	28,896
Amortization of debt issuance costs and original issuance discounts	14,985	21,243	15,725
Other	5,810	23,341	28,733
Changes in operating assets and liabilities, net of effects of acquisitions:			
Trade accounts receivable and notes receivable	(49,031)	608	(59,643)
Inventories	(76,708)	102,751	(203,335)
Accounts payable and other accrued liabilities	8,870	(14,633)	15,365
Other current assets	(5,440)	(11,912)	(13,641)
Income taxes payable and refundable income taxes	7,889	(10,177)	21,751
Other	5,436	(1,154)	11,982
Net cash provided by operating activities	631,721	644,476	363,129
Investing activities:			
Acquisition of property and equipment	(315,606)	(456,847)	(466,192)
Acquisition of businesses, net of cash acquired	—	—	(4,474,925)
Proceeds from sale of businesses, net	250,789	814,960	—
Proceeds from termination of alliance agreement	—	191,151	—
Other	(2,262)	3,807	(4,592)
Net cash (used in) provided by investing activities	(67,079)	553,071	(4,945,709)
Financing activities:			
Proceeds from revolving credit facility and short-term debt	140,000	—	476,000
Payments of revolving credit facility and short-term debt	(140,000)	(135,000)	(341,000)
Proceeds from long-term debt	224,537	217,449	4,940,753
Payments of long-term debt	(848,311)	(1,338,675)	(145,000)
Payments for debt issuance costs	—	(3,475)	(99,488)
Payments for dividends	(60,583)	(60,221)	(57,309)
Issuance of common stock from employee stock plans	14,046	35,878	5,322
Taxes paid related to net share settlement of equity awards	(16,834)	(12,108)	(22,820)
Other	(1,842)	(1,391)	(1,101)
Net cash (used in) provided by financing activities	(688,987)	(1,297,543)	4,755,357
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3,371)	(6,514)	(11,903)
(Decrease) increase in cash, cash equivalents and restricted cash	(127,716)	(106,510)	160,874
Cash, cash equivalents and restricted cash at beginning of year	456,929	563,439	402,565
Cash, cash equivalents and restricted cash at end of year	\$ 329,213	\$ 456,929	\$ 563,439

See the accompanying notes to consolidated financial statements

ENTEGRIS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

Supplemental Cash Flow Information

<i>(In thousands)</i>	Year ended December 31, 2024	Year ended December 31, 2023	Year ended December 31, 2022
Non-cash transactions:			
Equity consideration on acquisition of CMC Materials, Inc.	\$ —	\$ —	\$ 1,265,690
Share issuance in exchange for extinguishment of Employee Stock Purchase Plan liability	16,912	14,914	10,846
Deferred acquisition and divestiture payments, net	—	5,474	—
Equipment purchases in accounts payable	57,579	20,573	28,295
Dividends payable	822	730	654
Schedule of interest and income taxes paid:			
Interest paid, net of capitalized interest	\$ 199,198	\$ 287,846	\$ 164,183
Income taxes paid, net of refunds received	103,795	138,875	113,666

See the accompanying notes to consolidated financial statements

ENTEGRIS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
DECEMBER 31, 2024

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations Entegris, Inc. (“Entegris”, the “Company”, “we”, or “our”) is a leading supplier of advanced materials and process solutions for the semiconductor and other high-technology industries.

Principles of Consolidation The consolidated financial statements include the accounts of the Company and its majority-owned subsidiaries. Intercompany profits, transactions and balances have been eliminated in consolidation.

Use of Estimates and Basis of Presentation The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make judgments, estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. On an ongoing basis, Entegris evaluates its estimates, including those related to receivables, inventories, property, plant and equipment, goodwill, intangible assets, accrued liabilities, income taxes and share-based compensation, among others. Actual results could differ from those estimates. Reclassifications of certain prior year amounts have been made to conform to the current year presentation.

Cash and Cash Equivalents Cash and cash equivalents include cash on hand and highly-liquid debt securities with original maturities of three months or less, which are valued at cost and approximate fair value.

Allowance for Credit Losses An allowance for uncollectible trade receivables is estimated based on a combination of write-off history, aging analysis and any specific, known troubled accounts. The Company maintains an allowance for credit losses that management believes is adequate to cover expected losses on trade receivables.

Inventories Inventories are stated at the lower of cost and net realizable value. Cost is determined by the first-in, first-out (FIFO) method. The Company records a charge to cost of sales for excess and obsolete inventory to reduce the carrying value of inventories to net realizable value.

Leases The Company determines if an arrangement is a lease at inception. Right-of-use (ROU) assets include operating and financing leases. Short-term operating lease liabilities are classified in “Other accrued liabilities” and long-term operating lease liabilities are classified in “Long-term lease liability - Operating lease” in the consolidated balance sheet. Short-term finance leases are classified in “Other accrued liabilities” and long-term finance lease liabilities are classified in “Long-term lease liability - Finance lease” in our consolidated balance sheet.

Lease assets and liabilities greater than 12 months are recognized at commencement date based on the present value of the lease payments over the lease term. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. We use the implicit rate when readily determinable. The ROU assets include prepaid lease payments and exclude lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term. Leases with an original term of 12 months or less are not recorded in the accompanying consolidated balance sheet.

Lease and non-lease components are generally accounted for separately for real estate leases. For non-real estate leases, we account for the lease and non-lease components as a single lease component.

Property, Plant and Equipment Property, plant and equipment are carried at cost and are depreciated using the straight-line method over the estimated useful lives of the assets. When assets are retired or disposed of, the cost and related accumulated depreciation are removed from the accounts, and gains or losses are recognized in the same period. Maintenance and repairs are expensed as incurred, while significant additions and improvements are capitalized. Long-lived assets, including property, plant and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset or group of assets may not be recoverable based on estimated future undiscounted cash flows. The amount of impairment, if any, is measured as the difference between the net book value and the estimated fair value of the asset(s).

Fair Value of Financial Instruments The carrying value of cash equivalents, accounts receivable, accounts payable, accrued payroll and related benefits, and other accrued liabilities approximates fair value due to the short maturity of those instruments. Fair value is defined as the price that would be received from the sale of an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The three-level hierarchy for disclosure is based on the extent and level of judgment used to estimate fair value. Level 1 inputs consist of valuations based on quoted market prices in active markets for identical assets or liabilities. Level 2 inputs consist of valuations based on quoted prices for similar assets or liabilities, quoted prices for identical assets or

liabilities in an inactive market, or other observable inputs. Level 3 inputs consist of valuations based on unobservable inputs that are supported by little or no market activity.

Goodwill and Intangible Assets Goodwill represents the excess of acquisition costs over the fair value of the net assets of businesses acquired. Goodwill is not subject to amortization, but is tested for impairment annually at August 31, the Company's annual testing date, and whenever events or changes in circumstances indicate that impairment may have occurred.

In performing the Company's annual goodwill impairment test, the Company is permitted to first assess qualitative factors to determine whether it is more likely than not that the fair value of the Company's reporting unit exceeds its carrying amount, including goodwill. In performing the qualitative assessment, the Company considers certain events and circumstances specific to the reporting unit and to the entity as a whole, such as macroeconomic conditions, industry and market considerations, overall financial performance and cost factors when evaluating whether it is more likely than not that the fair value of the reporting unit exceeds its carrying amount. The Company is also permitted to bypass the qualitative assessment and proceed directly to the quantitative assessment. If the Company chooses to undertake the qualitative assessment and concludes that it is more likely than not that the fair value of the reporting unit is less than its carrying amount, the Company would then proceed to the quantitative impairment assessment. In the quantitative assessment, the Company compares the fair value of the reporting unit to its carrying amount, which includes goodwill. If the fair value exceeds the carrying value, no impairment loss exists. If the fair value is less than the carrying amount, a goodwill impairment loss is measured and recorded.

Amortizable intangible assets include, among other items, patented, unpatented and other developed technology and customer-based intangibles, and are amortized using the straight-line method over their respective estimated useful lives. The Company reviews intangible assets and other long-lived assets for impairment if changes in circumstances or the occurrence of events suggest the remaining value may not be recoverable.

Derivative Financial Instruments The Company is exposed to various market risks, including risks associated with interest rates and foreign currency exchange rates. We enter into certain derivative transactions to mitigate the volatility associated with these exposures. We have policies in place that define acceptable instrument types we may enter into and we have established controls to limit our market risk exposure. We do not use derivative financial instruments for trading or speculative purposes. In addition, all derivatives, whether designated in hedging relationships or not, are recorded on the consolidated balance sheets at fair value on a gross basis.

Interest Rate Swap

The fair value of the interest rate swap is estimated using standard valuation models using market-based observable inputs over the contractual term, including one-month Secured Overnight Financing Rate ("SOFR") based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value. We have designated this swap agreement as a cash flow hedge. As a cash flow hedge, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swap and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive loss, while the ineffective portion is recorded as a component of Interest expense. Changes in the method by which we pay interest from one-month SOFR to another rate of interest could create ineffectiveness in the swap, and result in amounts being reclassified from other comprehensive income (loss) into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment is appropriate. Realized gains and losses are recorded on the same financial statement line as the hedged item, which is Interest expense.

Foreign Currency Contracts Not Designated as Hedges

On a periodic basis, we enter into forward foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. These foreign exchange contracts do not qualify for hedge accounting; therefore, the gains and losses resulting from the impact of currency exchange rate movements on our forward foreign exchange contracts are recognized as Other expense (income), net in the accompanying consolidated statements of operations in the period in which the exchange rates change.

Foreign Currency Translation Assets and liabilities of certain foreign subsidiaries are translated from foreign currencies into U.S. dollars at period-end exchange rates, and the resulting gains and losses arising from translation of net assets located outside the U.S. are recorded as a cumulative translation adjustment, a component of accumulated other comprehensive loss in the consolidated balance sheets. Income statement amounts are translated at the average exchange rates for the year. Translation adjustments are not adjusted for income taxes, as substantially all translation adjustments relate to permanent investments in non-U.S. subsidiaries. Gains and losses resulting from foreign currency transactions are included in Other expense (income), net, in the Company's consolidated statements of operations.

Revenue Recognition Revenue is measured based on consideration specified in a contract with a customer, and excludes any sales incentives and amounts collected on behalf of third parties. The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to a customer.

Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by the Company from a customer, are excluded from revenue.

Shipping and handling costs associated with outbound freight after control over a product has transferred to a customer are accounted for as a fulfillment cost and are included in cost of sales.

The Company recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the Company otherwise would have recognized is one year or less.

When the Company receives consideration, or such consideration is unconditionally due, from a customer prior to transferring goods or services to the customer under the terms of a sales contract, the Company records deferred revenue, which represents a contract liability. Such deferred revenue typically results from advance payments received on sales of the Company's products. The Company makes the required disclosures with respect to deferred revenue in Note 2 to the consolidated financial statements.

The Company does not disclose information about remaining performance obligations that have original expected durations of one year or less.

The following is a description of principal activities from which the Company generates its revenues. The Company has two reportable segments. For more detailed information about reportable segments, see Note 20 to the consolidated financial statements. For each of the two reportable segments, the recognition of revenue regarding the nature of goods and services provided by the segments are similar and described below. The Company recognizes revenue for product sales at a point in time following the transfer of control of such products to the customer, which generally occurs upon shipment or delivery, depending on the terms of the underlying contracts. For product sales contracts that contain multiple performance obligations, the Company allocates the transaction price to each performance obligation identified in the contract based on relative standalone selling prices, or estimates of such prices, and recognizes the related revenue as control of each individual product is transferred to the customer in satisfaction of the corresponding performance obligations. All material revenue is being recognized at a point in time.

The Company generally recognizes revenue for sales of services when the Company has satisfied the performance obligation. The payment terms and revenue recognized are based on time and materials.

The Company also enters into arrangements to license its intellectual property. These arrangements typically permit the customer to use a specialized manufacturing process and in return the Company receives a royalty fee. The Company recognizes revenue for a sales-based or usage-based royalty promised in exchange for a license of intellectual property when the subsequent sale or usage occurs.

The Company offers certain customers cash discounts and volume rebates as sales incentives. The discounts and volume rebates are recorded as a reduction in sales at the time revenue is recognized in an amount estimated based on historical experience and contractual obligations. The Company periodically reviews the assumptions underlying its estimates of discounts and volume rebates and adjusts its revenues accordingly.

In addition, the Company offers free product rebates to certain customers. The Company utilizes an adjusted market approach to estimate the stand-alone selling price of the loyalty program and allocates a portion of the consideration received to the free product offering. The free product offering is redeemable upon future purchases of the Company's products. The amount associated with free product rebates is recorded as deferred revenue on the balance sheet and is recognized as revenue when the free product is redeemed or when the likelihood of redemption is remote. The Company has deemed that the amount is immaterial for disclosure.

The Company provides for the estimated costs of fulfilling its obligations under product warranties at the time the related revenue is recognized. The Company estimates the costs based on historical failure rates, projected repair costs, and knowledge of specific product failures (if any). The specific warranty terms and conditions vary depending upon the product sold and the country in which we do business, but generally include parts and labor over a period generally ranging from 90 days to one year. The Company regularly reevaluates its estimates to assess the adequacy of the recorded warranty liabilities and adjusts the amounts as necessary.

The Company's contracts are generally short-term in nature. Most contracts do not exceed twelve months. Payment terms vary by the type and location of the Company's customers and the products or services offered. The term between invoicing and when payment is due is not significant. For certain products or services and customer types, the Company requires payment before the products or services are delivered to the customer. Those customers that prepay are represented by the contract liabilities until the performance obligations are satisfied.

Engineering, Research and Development Expenses Engineering, research and development expenses are expensed as incurred.

Share-Based Compensation The Company measures the cost of employee services received in exchange for the award of equity instruments based on the fair value of the award at the date of grant. Share-based compensation expense is recognized using the straight-line attribution method to recognize share-based compensation over the service period of the award, with adjustments recorded for forfeitures as they occur. Awards issued to employees who are retirement eligible or nearing retirement eligibility are expensed on an accelerated basis.

Government Grants The Company entered into certain incentive arrangements with the state of Colorado and U.S. Department of Commerce. We account for funds we receive from government grants by either reducing the costs of the assets (if the grant relates to capital expenditures) or expenses which could be Cost of goods sold, Selling, general and administrative, and Research and development expenses in the consolidated statements of income once the conditions and restrictions of the grant have been met and payment has been received.

Income Taxes The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income tax expense in the period that includes the enactment date.

The Company recognizes deferred tax assets to the extent that it believes these assets are more likely than not to be realized. A valuation allowance is recorded to reduce deferred tax assets when it is more likely than not that the Company would not be able to realize all or part of its deferred tax assets. In making such a determination, the Company considers all available positive and negative evidence, including future reversals of existing temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If the Company determines that it would be able to realize its deferred tax assets in the future in excess of their net recorded amount, the Company would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company's policy for recording interest and penalties associated with audits and unrecognized tax benefits is to record such items as a component of income before taxes. Penalties and interest to be paid or received are recorded in other expense (income), net, in the statement of operations.

Comprehensive Income Comprehensive income represents the change in equity resulting from items other than shareholder investments and distributions. The Company's foreign currency translation adjustments, unrealized gains and losses on available-for-sale investments, interest rate swap - cash flow hedge and minimum pension adjustments are included in accumulated other comprehensive loss. Comprehensive income and the components of accumulated other comprehensive loss are presented in the accompanying consolidated statements of comprehensive income and consolidated statements of equity.

Recent Accounting Pronouncements Adopted

During the year ended December 31, 2024, the Company adopted Accounting Standards Update (ASU) 2023-07, "Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures". This update enhances segment reporting by requiring additional disclosures, including disclosure of significant segment expenses, identification of the Chief Operating Decision Maker (CODM) and their use of segment profit or loss measures, and enhanced interim reporting requirements. The Company applied the guidance retrospectively to all periods presented. These changes did not impact the Company's consolidated financial results but improved transparency for users of the financial statements. See Note 20 to the consolidated financial statements for further details.

Recent Accounting Pronouncements Yet to be Adopted

In December 2023, the FASB issued ASU 2023-09, "Income Taxes (Topic 740): Improvements to Income Tax Disclosures". ASU 2023-09 is intended to enhance the transparency and decision usefulness of income tax disclosures. The amendments in ASU 2023-09 address investor requests for enhanced income tax information primarily through changes to the rate reconciliation and income taxes paid information. Early adoption is permitted. The updated standard is effective for our annual reporting periods beginning in fiscal year 2025. The Company is currently evaluating the impact of this standard on our consolidated financial statements and related disclosures.

In November 2024, the FASB issued ASU 2024-03, Income Statement—Reporting Comprehensive Income—Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses, which requires public companies to disclose, in interim and annual reporting periods, additional information about certain expenses in the notes to financial statements. The amendments in this ASU are effective for our annual reporting periods beginning in fiscal 2027 and interim reporting periods beginning in the first quarter of fiscal year 2028, with early adoption permitted. We are currently evaluating the impact of this ASU on our consolidated financial statements and related disclosures.

The Company currently has no other material recent accounting pronouncements yet to be adopted.

2. REVENUES

The following table provides information about disaggregated net sales by customer category for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Semiconductor:			
Fabs	\$ 1,965,569	\$ 1,919,998	\$ 1,747,437
Equipment and Engineering	493,501	566,806	547,956
Chemical and Materials	327,441	355,157	382,552
Semi Distributor/Other	262,584	326,936	343,559
Non-Semi	192,113	355,029	260,529
Total net sales	<u>\$ 3,241,208</u>	<u>\$ 3,523,926</u>	<u>\$ 3,282,033</u>

The following table provides information about current contract liabilities from contracts with customers. The contract liabilities are included in other accrued liabilities balance in the consolidated balance sheet.

<i>(In thousands)</i>	2024	2023
Balance at beginning of year	\$ 69,051	\$ 60,476
Revenue recognized that was included in the contract liability balance at the beginning of the period	(65,064)	(37,830)
Increases due to cash received, excluding amounts recognized as revenue during the period	37,751	52,720
Contract liabilities included as part of dispositions and held for sale	—	(6,315)
Balance at end of year	<u>\$ 41,738</u>	<u>\$ 69,051</u>

3. GOODWILL AND LONG-LIVED ASSET IMPAIRMENT

During 2023, the Company was exploring market interest in sales of two of our businesses, Electronic Chemicals and a small, industrial specialty chemicals business, both within our Materials Solutions (“MS”) segment. As a result, the Company had triggering events and evaluated goodwill and long-lived assets for impairment.

Goodwill

In 2023, the Company compared the reporting units’ fair value to the carrying amounts, including goodwill. As the reporting units’ carrying amount, including goodwill exceeded fair value, the Company recorded goodwill impairment charges of \$115.2 million in 2023. The impairment is classified as goodwill impairment in the Company’s consolidated statement of operations. The goodwill impairment is not deductible for tax purposes. The fair value of the reporting unit was determined using a market and income-based approach. We consider this a Level 3 measurement in the fair value hierarchy. There was no goodwill impairment charge recorded during 2024.

Long-lived assets, including finite-lived intangible assets

The Company compared the estimated undiscounted future cash flows generated by the asset groups to the carrying amount of the asset groups for the reporting units and determined that the undiscounted cash flows were expected to exceed the carrying value on a held and used basis for the EC business but did not for the small, industrial specialty chemical business. As a result, the Company recorded an impairment of \$30.5 million in 2023 and \$13.0 million in 2024 related to the industrial specialty chemical business. The impairment is classified as selling, general and administrative expenses in the Company’s consolidated statements of operations. The fair value of the reporting unit was determined using a market-based approach. We consider this a Level 3 measurement in the fair value hierarchy. The small, industrial specialty chemical business remains classified as an asset held-for-sale as of December 31, 2024; see Note 5 for further discussion.

4. ACQUISITION

CMC Materials, Inc.

On July 6, 2022, the Company completed its acquisition of CMC Materials, Inc. (“CMC Materials”), a Delaware corporation, for approximately \$6.0 billion in cash and stock (the “Acquisition”) pursuant to an Agreement and Plan of Acquisition dated as

of December 14, 2021 (the “Acquisition Agreement”). As a result of the Acquisition, CMC Materials became a wholly owned subsidiary of the Company. The Acquisition was accounted for under the acquisition method of accounting and the results of operations of CMC Materials are included in the Company's consolidated financial statements as of and since July 6, 2022. CMC Materials reports into the MS segment of the Company. Direct costs of \$39.5 million associated with the acquisition of CMC Materials, consisting primarily of professional and consulting fees, were expensed as incurred in the twelve months ended December 31, 2022, respectively. These costs are classified as selling, general and administrative expense in the Company's consolidated statement of operations. The amounts of net sales and net loss from CMC Materials since the acquisition date included in the consolidated statement of operations for the twelve months ended December 31, 2022 are \$581.0 million and \$75.8 million, respectively.

The purchase price of CMC Materials consisted of the following:

(In thousands)

Cash paid to CMC Materials' shareholders	\$	3,836,983
Stock paid to CMC Materials' shareholders		1,265,690
Repayment of CMC Materials' indebtedness		918,578
Total purchase price		6,021,251
Less cash and cash equivalents acquired		280,636
Total purchase price, net of cash acquired	\$	5,740,615

Under the terms of the Acquisition Agreement, the Company paid \$133.00 per share for all outstanding shares of CMC Materials (excluding treasury shares). In addition, the Company settled all outstanding share-based compensation awards held by CMC Materials' employees at the same per share price except for certain unvested performance units that were replaced by the Company's restricted share units. The acquisition method of accounting requires the Company to include the amount associated with pre-combination service as purchase price for the acquisition, reflected in the table immediately above.

The Acquisition was funded with existing cash balances as well as funds raised by the Company through the issuance of debt in the form of a new term loan facility in the aggregate principal amount of \$2,495.0 million, senior secured notes due 2029 in an aggregate principal amount of \$1,600.0 million, senior unsecured notes due 2030 in an aggregate principal amount of \$895.0 million, and a 364-Day Bridge Credit Facility in the aggregate principal amount of \$275.0 million (collectively “CMC Materials Acquisition Financing”).

The following table summarizes the allocation of the purchase price to the fair values assigned to the assets acquired and liabilities assumed at the date of the Acquisition as originally reported and as of December 31, 2022:

(In thousands)

	As of July 6, 2022
Cash and cash equivalents	\$ 280,636
Accounts receivable and other current assets	207,472
Inventory	256,598
Property, plant and equipment	537,387
Identifiable intangible assets	1,736,219
Other noncurrent assets	39,725
Current liabilities	(211,417)
Deferred tax liabilities and other noncurrent liabilities	(452,805)
Net assets acquired	2,393,815
Goodwill	3,627,436
Total purchase price	\$ 6,021,251

The final valuation of assets acquired and liabilities assumed in connection with the Acquisition was completed in the second quarter of 2023.

The fair value of acquired inventories was \$256.6 million and was valued at the estimated selling price less the cost of disposal and reasonable profit for the selling effort. The fair value write-up of acquired finished goods inventory was \$61.9 million. This amount was recorded as an incremental cost of sales charge, amortized over the expected turn of the acquired inventory, during the year ended December 31, 2022.

The fair value of acquired property, plant and equipment of \$537.4 million is valued at its fair value assuming held and used, unless market data was available supporting the fair value.

The Company recognized the following intangible assets as part of the acquisition of CMC Materials and finite lived assets will be amortized on a straight-line basis:

<i>(In thousands)</i>	Amount	Weighted average life in years
Developed technology	\$ 1,043,000	7.3
Trademarks and trade names	236,600	14.9
Customer relationships	414,300	18.3
In-process research and development ⁽¹⁾	31,400	
Other	10,919	1.2
	<u>\$ 1,736,219</u>	11.0

(1) In-process research and development assets are treated as indefinite-lived until the completion or abandonment of the associated research and development project, at which time the appropriate useful lives would be determined.

The fair value of acquired identifiable finite intangible assets was determined using an income method, which utilizes discounted cash flows to fair value each of the identifiable intangible assets. The Company normally utilizes the “income method,” which starts with a forecast of all of the expected future net cash flows attributable to the subject intangible asset. These cash flows are then adjusted to present value by applying an appropriate discount rate that reflects the risk factors associated with the cash flow streams. Depending on the asset valued, the key assumptions included one or more of the following: (1) future revenue growth rates, (2) future gross margin, (3) future selling, general and administrative expenses, (4) royalty rates, and (5) discount rates. The valuations were based on the information that was available as of the acquisition date and the expectations and assumptions that have been deemed reasonable by the Company’s management. There are inherent uncertainties and management judgment required in these determinations. The fair value measurements of the assets acquired and liabilities assumed were based on valuations involving significant unobservable inputs, or Level 3 in the fair value hierarchy.

The purchase price of CMC Materials exceeded the fair value of the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed by \$3,627.4 million. Cash flows used to determine the purchase price included strategic and synergistic benefits (investment value) specific to the Company, which resulted in a purchase price in excess of the fair value of identifiable net assets. The purchase price also included the fair values of other assets that were not identifiable, not separately recognizable under accounting rules (e.g., assembled workforce) or of immaterial value in addition to a going-concern element that represents the Company’s ability to earn a higher rate of return on the group of assets than would be expected on the separate assets as determined during the valuation process. This additional investment value resulted in goodwill. No amount of goodwill is expected to be deductible for tax purposes.

Pro Forma Results (Unaudited)

The following unaudited pro forma financial information presents the combined results of operations of the Company as if the acquisition of CMC Materials had occurred as of the beginning of the year presented. The unaudited pro forma financial information is not necessarily indicative of what the Company’s consolidated results of operations would have been had the acquisition occurred at the beginning of the year. In addition, the unaudited pro forma financial information does not attempt to project the future results of operations of the combined company. The pro forma information does not include any potential revenue enhancements, cost synergies or other operating efficiencies that could result from the acquisition.

<i>(In thousands)</i>	Year Ended	
	December 31, 2022	
Net sales	\$	3,920,850
Net income		292,867
Per share amounts:		
Net income per common share - basic	\$	1.97
Net income per common share - diluted	\$	1.95

The unaudited pro forma financial information above gives effect to the following:

- The elimination of transactions between Entegris and CMC Materials, which upon completion of the Acquisition would be considered intercompany transactions. This reflects the elimination of intercompany sales and associated intercompany accounts.
- Incremental amortization and depreciation expense related to the estimated fair value of identifiable intangible assets and property, plant and equipment from the purchase price allocation.
- Interest expense on the new debt raised to fund in part the consideration paid to effect the Acquisition using the effective interest rates.
- The elimination of interest expense, net of the gain on the termination of two swap instruments which were terminated on June 24, 2022 associated with the extinguished CMC Materials' debt outstanding.
- The elimination of interest expense associated with the repayment of the \$145.0 million senior secured term loan facility due 2025.
- The amortization of deferred financing costs and original issue discount associated with the aggregate new debt facilities.
- Transaction and integration costs directly attributable to the Acquisition were reclassified as of the beginning of the comparable prior annual reporting period.
- The incremental pro forma stock-based compensation expense for accelerated vesting upon the change in control for stock options, restricted stock units, restricted stock shares, phantom units, and other deferred restricted stock units.
- The additional cost of goods sold recognized in connection with the write-up of acquired finished goods inventory of \$61.9 million. The write-up is recognized in cost of sales as the inventory is sold, which for purposes of these pro forma financial statements is assumed to occur within the first quarter after the Acquisition.
- The income tax effect of the transaction accounting adjustments related to the Acquisition calculated using a blended statutory income tax rate of 22.5%.

5. ASSETS HELD-FOR-SALE AND DIVESTITURES

Asset Held-For-Sale - Other

During the fourth quarter of 2023, the Company began the process to sell a small, industrial specialty chemicals business that reports within the MS segment. The related assets and liabilities of the business were classified as held-for-sale in the Company's consolidated balance sheets and measured at the lower of their carrying amount or fair value less cost to sell. The assets and liabilities continue to be marketed for sale and are classified as held-for-sale at December 31, 2024.

The proposed disposition of the business did not meet the criteria to be classified as a discontinued operation in the Company's financial statements since the disposition did not represent a strategic shift that had, or will have, a major effect on the Company's operations and financial results.

Assets held-for-sale and liabilities held-for-sale recorded on the balance sheet were \$5.5 million and \$1.2 million, respectively, as of December 31, 2024. The loss before income taxes attributable to the business was not significant for the twelve months ended December 31, 2024, except for the impairment charge of \$13.0 million as noted in Note 3 for the twelve months ended December 31, 2024.

Divestiture - Pipeline and Industrial Materials

During the first quarter of 2024, the Company completed the sale of its Pipeline and Industrial Materials (“PIM”) business, which became part of the Company with the acquisition of CMC Materials, to SCF Partners, Inc. The PIM business specializes in the manufacture and sale of drag reducing agents and a range of valve maintenance products and services for the oil and gas industry, and reported into the MS segment of the Company.

The Company received gross cash proceeds of \$263.2 million, or net proceeds of \$256.2 million, and may receive up to \$25.0 million in cash earn-out payments contingent upon the performance of the PIM business in 2025 and 2026.

The Company’s policy is to account for the contingent consideration arrangement in accordance with ASC 450, Contingencies (Subtopic 450-30). Under this approach, the Company recognizes the contingent consideration receivable in earnings after the contingency is resolved. Accordingly, to determine the initial gain on the sale of the PIM business, the Company did not include an amount related to the contingent consideration arrangement as part of the consideration received.

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

<i>(In thousands)</i>	March 1, 2024
Cash proceeds received, gross	\$ 263,208
Final working capital adjustment	1,189
Cash transferred to the buyer on the closing balance sheet	(230)
Direct costs to sell	(8,005)
Fair value of sale consideration	<u>\$ 256,162</u>

The disposition of the PIM business did not meet the criteria to be classified as a discontinued operation in the Company’s financial statements since the disposition did not represent a strategic shift that had, or will have, a major effect on the Company’s operations and financial results.

The carrying amount of net assets associated with the PIM business was approximately \$252.8 million. The major classes of assets and liabilities sold consisted of the following:

<i>(In thousands)</i>	March 1, 2024
Assets:	
Current assets	\$ 58,684
Property, Plant and Equipment, net	118,146
Intangible assets, net	76,692
Goodwill	12,707
Other assets	2,500
Total assets-held-for sale	<u>\$ 268,729</u>
Liabilities:	
Accounts payable	\$ 9,485
Accrued expenses	4,672
Long-term liabilities	1,737
Total liabilities-held-for sale	<u>\$ 15,894</u>

As a result of the sale of the PIM business, the Company recognized a pre-tax gain of \$4.3 million, inclusive of a \$1.0 million gain reclassified from Accumulated other comprehensive loss for foreign currency translation, presented in Selling, general and administrative expenses in the consolidated statements of operations for the year ended December 31, 2024. The Company recorded an income tax expense associated with the PIM divestiture of approximately \$1.0 million for the year ended December 31, 2024.

Divestiture - QED

On March 1, 2023, the Company completed the divestiture of QED. The Company received proceeds of \$134.3 million, net of final adjustments with respect to cash, working capital, indebtedness and transaction expenses. The carrying amount of net assets associated with the QED business was approximately \$149.2 million. As a result of the QED divestiture, the Company recognized a pre-tax loss of \$14.9 million presented in selling, general and administrative expenses on the consolidated statements of operations for the twelve months ended December 31, 2023. The Company recorded an income tax expense associated with the QED divestiture of approximately \$16.9 million in the twelve months ended December 31, 2023.

The disposition of QED did not meet the criteria to be classified as a discontinued operation in the Company's financial statements since the disposition did not represent a strategic shift that had a major effect on the Company's operations and financial results.

Divestiture - EC Business

On October 2, 2023, the Company completed the divestiture of its EC business. The Company received proceeds of \$675.3 million, net of final adjustments with respect to cash, working capital, indebtedness and transaction expenses. The carrying amount of net assets associated with the EC business was approximately \$681.5 million. As a result of the EC business divestiture, the Company recognized a pre-tax loss of \$8.9 million, including a \$2.6 million loss reclassified from accumulated other comprehensive income for foreign currency translation and minimum pension liability, presented in selling, general and administrative expenses on the consolidated statements of operations for the twelve months ended December 31, 2023. The Company recorded an income tax benefit associated with the EC business divestiture of approximately \$63.4 million in the twelve months ended December 31, 2023.

The disposition of the EC business did not meet the criteria to be classified as a discontinued operation in the Company's financial statements since the disposition did not represent a strategic shift that had, or will have, a major effect on the Company's operations and financial results.

Termination - Alliance Agreement

On June 5, 2023, the Company announced the termination of the Alliance Agreement (the "Alliance Agreement") between the Company and MacDermid Enthone Inc., a global business unit of Element Solutions Inc ("MacDermid Enthone"). Under the Alliance Agreement, Entegris had been granted the exclusive right to distribute MacDermid Enthone's Viaform products, subject to certain conditions. In connection with the termination of the Alliance Agreement, Entegris received net proceeds of \$191.2 million for the twelve months ended December 31, 2023. The Company recognized a pre-tax gain of \$184.8 million (tax expense of \$41.7 million) presented in gain on termination of the Alliance Agreement on the consolidated statements of operations for the twelve months ended December 31, 2023.

6. TRADE ACCOUNTS AND NOTES RECEIVABLE

Trade accounts and notes receivable from customers at December 31, 2024 and 2023 consist of the following:

<i>(In thousands)</i>	2024	2023
Trade accounts receivable	\$ 497,284	\$ 457,566
Notes receivable	1,164	5,898
Total trade accounts and notes receivable	498,448	463,464
Less allowance for credit losses	3,136	6,412
Trade accounts and notes receivable, net	<u>\$ 495,312</u>	<u>\$ 457,052</u>

7. INVENTORIES

Inventories at December 31, 2024 and 2023 consist of the following:

<i>(In thousands)</i>	2024	2023
Raw materials	\$ 231,046	\$ 248,656
Work-in-process	59,620	49,704
Finished goods ⁽¹⁾	347,414	308,691
Inventories, net	<u>\$ 638,080</u>	<u>\$ 607,051</u>

⁽¹⁾ Includes consignment inventories held by customers of \$24.0 million and \$20.8 million at December 31, 2024 and 2023, respectively.

8. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment at December 31, 2024 and 2023 consists of the following:

<i>(In thousands)</i>	2024	2023	Estimated useful lives in years
Land	\$ 47,192	\$ 44,177	
Buildings and improvements	849,835	779,589	5-35
Manufacturing equipment	799,611	685,504	5-10
Canisters and cylinders	203,962	186,231	3-12
Molds	85,403	83,745	3-5
Office furniture and lab equipment	338,208	299,438	3-8
Construction in progress	356,087	297,448	
Total property, plant and equipment	2,680,298	2,376,132	
Less accumulated depreciation	1,057,372	908,089	
Property, plant and equipment, net	<u>\$ 1,622,926</u>	<u>\$ 1,468,043</u>	

The table below sets forth the depreciation expense for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Depreciation expense	\$ 188,120	\$ 172,683	\$ 135,371

9. GOODWILL AND INTANGIBLE ASSETS

Goodwill activity for each of the Company's reportable segments, Materials Solutions ("MS") and Advanced Purity Solutions ("APS"), for the years ended December 31, 2024 and 2023 is shown below:

<i>(In thousands)</i>	MS	APS	Total
December 31, 2022	\$ 4,092,141	\$ 316,190	\$ 4,408,331
Goodwill impairment	(115,217)	—	(115,217)
Disposition of businesses	(340,643)	—	(340,643)
Purchase accounting adjustments	(1,021)	—	(1,021)
Goodwill included in assets held-for-sale	(3,885)	—	(3,885)
Foreign currency translation	(25)	(1,680)	(1,705)
December 31, 2023	\$ 3,631,350	\$ 314,510	\$ 3,945,860
Foreign currency translation	(36)	(2,253)	(2,289)
December 31, 2024	<u>\$ 3,631,314</u>	<u>\$ 312,257</u>	<u>\$ 3,943,571</u>

As of December 31, 2024, goodwill amounted to approximately \$3,943.6 million, a decrease of \$2.3 million from the balance at December 31, 2023, relating to foreign currency translation. As described in Note 20, the Company realigned its segments in the fourth quarter of 2024. The Company combined its previous segments, Advanced Materials Handling and Microcontamination Control into the new APS segment. We completed an assessment of any potential goodwill impairment for all reporting units immediately prior and subsequent to the reallocation and determined that no impairment existed.

Identifiable intangible assets at December 31, 2024 and 2023 consist of the following:

2024				
<i>(In thousands)</i>	Gross carrying amount	Accumulated amortization	Net carrying value	Weighted average life in years
Developed technology	\$ 1,256,766	\$ 601,700	\$ 655,066	7.2
Trademarks and trade names	171,970	48,754	123,216	14.0
Customer relationships	630,496	326,495	304,001	14.0
In-process research and development ⁽¹⁾	6,600	—	6,600	
Other	25,544	22,681	2,863	5.1
	<u>\$ 2,091,376</u>	<u>\$ 999,630</u>	<u>\$ 1,091,746</u>	9.7

2023				
<i>(In thousands)</i>	Gross carrying amount	Accumulated amortization	Net carrying value	Weighted average life in years
Developed technology	\$ 1,256,469	\$ 455,720	\$ 800,749	7.2
Trademarks and trade names	172,031	37,877	134,154	14.0
Customer relationships	630,743	293,782	336,961	14.0
In-process research and development ⁽¹⁾	7,100	—	7,100	
Other	23,924	20,919	3,005	5.6
	<u>\$ 2,090,267</u>	<u>\$ 808,298</u>	<u>\$ 1,281,969</u>	9.7

⁽¹⁾ Intangible assets acquired in a business combination that are in-process and used in research and development activities are considered indefinite-lived until the completion or abandonment of the research and development efforts. Once the research and development efforts are completed, we determine the useful life and begin amortizing the assets.

The table below sets forth the amortization expense for finite-lived intangible assets for the years ended December 31, 2024, 2023, and 2022:

<i>(In thousands)</i>	2024	2023	2022
Amortization expense	\$ 190,119	\$ 214,477	\$ 143,953

The amortization expense for each of the five succeeding years and thereafter relating to finite-lived intangible assets currently recorded in the Company's consolidated balance sheets is estimated to be the following at December 31, 2024:

<i>(In thousands)</i>	2025	2026	2027	2028	2029	Thereafter	Total
Future amortization expense	\$ 185,671	182,505	178,891	176,449	110,693	257,537	\$ 1,091,746

10. DEBT

The Company's debt at December 31, 2024 and 2023 consists of the following:

<i>(In thousands)</i>	2024	2023
Senior secured term loan due 2029 at 4.71% ⁽¹⁾	\$ 750,000	\$ 1,373,774
Senior secured notes due 2029 at 4.75%	1,600,000	1,600,000
Senior unsecured notes due 2030 at 5.95%	895,000	895,000
Senior unsecured notes due 2029 at 3.625%	400,000	400,000
Senior unsecured notes due 2028 at 4.375%	400,000	400,000
Revolving facility due 2027 at 6.07% ⁽²⁾	—	—
Total debt (par value)	\$ 4,045,000	\$ 4,668,774
Unamortized discount and debt issuance costs	63,895	91,633
Total debt, net	\$ 3,981,105	\$ 4,577,141
Less current portion of long-term debt	—	—
Total long-term debt, net	<u>\$ 3,981,105</u>	<u>\$ 4,577,141</u>

Annual maturities of long-term debt, excluding unamortized discount and issuance costs, due as of December 31, 2024 are as follows:

<i>(In thousands)</i>	2025	2026	2027	2028	2029	Thereafter	Total
Long-term debt obligation maturities*	\$ —	—	—	400,000	2,750,000	895,000	\$ 4,045,000

* Senior secured term loans B subject to Excess Cash Flow payments to the lenders.

(1) The Company entered into a floating-to-fixed swap contract on its variable rate debt under our senior secured term loan facility due 2029. The effective interest rate after consideration of this floating-to-fixed swap contract was 4.71%. Refer to Note 12 for a description of our interest rate swap contract.

(2) Our senior secured revolving credit facility due 2027 (the “Revolving Facility”) bears interest at a rate per annum equal to SOFR, plus an applicable margin of 1.75%. The Revolving Facility has commitments of \$575.0 million.

Senior secured term loans B due 2029

On March 28, 2024, the Company and certain of its subsidiaries entered into Amendment No. 3 (the “Third Amendment”), with the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent, which amended the Credit and Guaranty Agreement, dated as of November 6, 2018 (as amended and restated as of July 6, 2022 and as subsequently amended on each of March 10, 2023 and September 11, 2023, the “Existing Credit Agreement” and, the Existing Credit Agreement as amended by the Third Amendment, the “Amended Credit Agreement”), by and among the Company, as borrower, certain subsidiaries of the Company party thereto, as guarantors, the lenders party thereto and Morgan Stanley Senior Funding, Inc., as administrative agent and collateral agent.

The Third Amendment provides for, among other things, the reduction of the applicable rate of the Company’s outstanding senior secured term loans B under the Existing Credit Agreement. After giving effect to the Third Amendment, such outstanding term loans B bear interest, at a rate per annum equal to, at the Company’s option, either (i) Term SOFR plus an applicable margin of 1.75% or (ii) a base rate plus an applicable margin of 0.75%. Other than as described herein (and more fully described in the Third Amendment), the terms of the Amended Credit Agreement are substantially similar to the terms of the Existing Credit Agreement. In connection with the Third Amendment, the Company made a prepayment of \$354.5 million on the term loans B.

During the twelve months ended December 31, 2024, the Company has repaid \$623.8 million of the outstanding borrowings under the term loans B. In connection with these repayments and entry into the Third Amendment, the Company incurred a pre-tax loss on extinguishment and modification of debt of \$14.3 million for the twelve months ended December 31, 2024, which is included in Other expense, net on the consolidated statements of operations.

11. FAIR VALUE OF FINANCIAL INSTRUMENTS

The Company is required to record certain assets and liabilities at fair value. The valuation methods used for determining the fair value of these financial instruments by hierarchy are as follows:

Level 1 Cash and cash equivalents consist of various bank accounts used to support our operations and investments in institutional money-market funds that are traded in active markets.

Level 2 Derivative financial instruments include an interest rate swap contract and foreign exchange contracts. The fair value of our derivative instruments is estimated using standard valuation models and market-based observable inputs over the contractual term, including the prevailing SOFR-based yield curves for the interest rate swap, and forward rates and/or the Overnight Index Swap curve for forward foreign exchange contracts, among others. The fair value of our debt is estimated based on independent broker/dealer bids or by comparison to other debt securities having similar durations, yields and credit ratings.

Level 3 No Level 3 financial instruments

The following table presents financial instruments that we measure at fair value on a recurring basis. See Note 10 to our consolidated financial statements for a discussion of our debt. In instances where the inputs used to measure the fair value of an

asset fall into more than one level of the hierarchy, we have classified it based on the lowest level input that is significant to the determination of the fair value.

<i>(In thousands)</i>	Fair Value Measurements at Reporting Date Using							
	Level 1		Level 2		Level 3		Total	
	2024	2023	2024	2023	2024	2023	2024	2023
Assets:								
Cash and cash equivalents	\$ 329,213	\$ 456,929	\$ —	\$ —	\$ —	\$ —	\$ 329,213	\$ 456,929
Derivative financial instruments - interest rate swap - cash flow hedge	—	—	7,135	24,069	—	—	7,135	24,069
Total Assets	\$ 329,213	\$ 456,929	\$ 7,135	\$ 24,069	\$ —	\$ —	\$ 336,348	\$ 480,998

Other Fair Value Disclosures

The fair value of our debt is considered Level 2. The estimated fair value and carrying value of our debt as of December 31, 2024 and 2023 were as follows:

<i>(In thousands)</i>	December 31, 2024		December 31, 2023	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Total debt, net	\$ 3,981,105	\$ 3,909,256	\$ 4,577,141	\$ 4,536,238

12. DERIVATIVE INSTRUMENTS

The Company is exposed to various market risks, including risks associated with interest rates and foreign currency exchange rates. One objective of the Company's risk management program is to mitigate these risks using derivative instruments.

Cash Flow Hedges - Interest Rate Swap Contract

In July 2022, the Company entered into a floating-to-fixed swap agreement on its variable rate debt under the Term Loan Facility. The interest rate swap was designated specifically to the Term Loan Facility, is highly effective and qualifies as a cash flow hedge. The notional amount is scheduled to decrease quarterly and will expire on December 30, 2025. As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of Accumulated other comprehensive loss and will be reflected in earnings during the period the hedged transaction effects earnings, while the ineffective portion is recorded as a component of Interest expense.

Foreign Currency Contracts Not Designated as Hedges

The Company enters into foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. These foreign exchange contracts do not qualify for hedge accounting. The Company recognizes the change in fair value of its foreign currency forward contracts in the consolidated statement of operations.

The notional amounts of our derivative instruments are as follows:

<i>(In thousands)</i>	December 31, 2024	December 31, 2023
Derivatives designated as hedging instruments:		
Interest rate swap contract - cash flow hedge	\$ 750,000	\$ 1,350,000

The fair values of our derivative instruments included in the consolidated balance sheets are as follows:

<i>(In thousands)</i>	Derivative Assets	
	December 31, 2024	December 31, 2023
Consolidated Balance Sheet Location		
Derivatives designated as hedging instruments: Interest rate swap contract - cash flow hedge		
Other current assets	\$ 7,135	\$ 21,451
Other assets	—	2,618

The following table summarizes the effects of our derivative instruments on our consolidated statements of operations for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>		Consolidated Statements of Operations Location			Gain recognized in Consolidated Statements of Income		
Derivatives designated as hedging instruments:			2024	2023	2022		
Interest rate swap contract - cash flow hedge	Interest expense	\$	(26,969)	\$	(37,220)	\$	—
Derivatives not designated as hedging instruments:			2024	2023	2022		
Foreign exchange contracts	Other expense, net	\$	—	\$	(374)	\$	(3,435)

The following table summarizes the effects of our derivative instruments on Accumulated other comprehensive loss for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>		(Loss) gain recognized in Accumulated other comprehensive loss		
Derivatives designated as hedging instruments:		2024	2023	2022
Interest rate swap contract - cash flow hedge	\$	(13,111)	\$	(17,435)
			\$	36,069

We expect approximately \$7.1 million to be reclassified from Accumulated other comprehensive loss into Interest expense during the next twelve months related to our interest rate swap based on projected rates of the SOFR forward curve as of December 31, 2024.

13. OTHER EXPENSE, NET

The table below sets forth the Other expense, net for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Infineum termination fee, net	\$ —	\$ (10,876)	\$ —
Patent infringement settlement gain, net	(20,033)	—	—
Loss on foreign currency remeasurement	7,705	5,718	23,034
Loss on extinguishment of debt and modification	14,348	29,896	3,287
Other, net	2,001	629	(2,395)
Other expense, net	<u>\$ 4,021</u>	<u>\$ 25,367</u>	<u>\$ 23,926</u>

Patent infringement settlement gain, net

During the fourth quarter of 2024, the Company settled patent infringement litigation and received net proceeds of \$20.0 million.

Infineum termination fee, net

On October 11, 2022, the Company and Infineum entered into a definitive agreement for the sale of the Company's PIM business. On February 10, 2023, the Company terminated the definitive agreement. In accordance with the terms of the definitive agreement, the Company received a \$12.0 million termination fee from Infineum in the first quarter of 2023 and incurred a transaction fee of \$1.1 million to the third-party financial adviser it had engaged to assist with the transaction.

14. LEASES

As of December 31, 2024, the Company was obligated under operating and finance lease agreements for certain office space and manufacturing facilities, manufacturing equipment, vehicles, information technology equipment and warehouse space. Our leases have remaining lease terms of 1 year to 29 years, some of which may include options to extend the lease for up to 10 years, and some of which may include options to terminate the leases within 1 year.

As of December 31, 2024 and 2023, the Company's operating and financing lease components with initial or remaining terms in excess of one year were classified on the consolidated balance sheets as follows, together with certain supplemental balance sheet information:

<i>(In thousands)</i>	Classification	2024	2023
Assets			
Right-of-use assets:			
Operating lease	Right-of-use assets	62,548	57,990
Finance lease	Right-of-use assets	20,927	22,409
Total right-of-use assets		<u>\$ 83,475</u>	<u>\$ 80,399</u>
Liabilities			
Short-term lease liability:			
Operating lease	Other accrued liabilities	13,793	14,475
Finance lease	Other accrued liabilities	1,898	1,880
Total short-term lease liability		<u>\$ 15,691</u>	<u>\$ 16,355</u>
Long-term lease liability:			
Operating leases	Long-term lease liability	53,758	49,719
Finance leases	Long-term lease liability	18,401	19,267
Total long-term lease liability		<u>\$ 72,159</u>	<u>\$ 68,986</u>
Total lease liabilities		<u>\$ 87,850</u>	<u>\$ 85,341</u>
Lease Term and Discount Rate			
Weighted average remaining lease term (years) - Operating leases		7.8	6.9
Weighted average remaining lease term (years) - Finance leases		13.4	14.7
Weighted average discount rate - Operating leases		4.5 %	4.2 %
Weighted average discount rate - Finance leases		5.1 %	5.0 %

Expense for leases less than 12 months for the year ended December 31, 2024, 2023 and 2022 were not material. The components of lease expense for the year ended December 31, 2024, 2023 and 2022 are as follows:

<i>(In thousands)</i>	2024	2023	2022
Operating lease cost	\$ 17,936	\$ 18,107	\$ 17,997
Finance lease cost:			
Amortization of ROU assets	2,216	1,841	1,213
Interest on lease liabilities	1,069	821	401

The Company combines the amortization of the right-of-use assets and the change in the operating lease liability in the same line item in the Statement of Cash Flows. Other information related to the Company's operating leases for the year ended December 31, 2024, 2023 and 2022 are as follows:

<i>(In thousands)</i>	2024	2023	2022
Cash paid for amounts included in the measurement of lease liabilities:			
Cash flows - Operating leases	\$ 18,931	\$ 18,528	\$ 14,916
Cash flows - Finance leases	2,719	2,164	1,300
Right-of-use assets obtained in exchange for lease obligations:			
Operating leases	\$ 22,341	\$ 6,155	\$ 16,241
Finance leases	1,544	8,806	7,357

Future minimum lease payments for noncancellable leases as of December 31, 2024, were as follows:

<i>(In thousands)</i>	Operating leases	Finance leases
One year	\$ 17,265	\$ 2,747
Two years	13,572	2,728
Three years	9,864	2,630
Four years	8,053	2,639
Five years	6,542	2,629
Beyond five years	21,222	18,283
Total minimum lease payments	\$ 76,518	\$ 31,656
Less: Interest	8,967	11,357
Present value of lease liabilities	\$ 67,551	\$ 20,299

15. ASSET RETIREMENT OBLIGATIONS

The Company has asset retirement obligations (“AROs”) related to environmental disposal obligations associated with cylinders used to supply customers with gas products, and certain restoration obligations associated with certain of its leased facilities.

Changes in the carrying amounts of the Company’s AROs for the years ended December 31, 2024 and 2023 are shown below:

<i>(In thousands)</i>	2024	2023
Balance at beginning of year	\$ 21,715	\$ 28,035
Liabilities settled	(612)	(7,254)
Liabilities incurred	2,341	2,869
Accretion expense	143	139
Revision of estimate	(1,180)	(2,074)
Balance at end of year	\$ 22,407	\$ 21,715

ARO liabilities expected to be settled within twelve months are included in the consolidated balance sheets in Other accrued liabilities, while all other ARO liabilities are included in Pension benefit obligations and other liabilities in the consolidated balance sheets.

16. INCOME TAXES

Income before income tax expense (benefit) for the years ended December 31, 2024, 2023 and 2022 was derived from the following sources:

<i>(In thousands)</i>	2024	2023	2022
Domestic	\$ (239,773)	\$ (457,888)	\$ (272,365)
Foreign	561,825	630,558	519,445
Income before income tax expense (benefit)	\$ 322,052	\$ 172,670	\$ 247,080

Income tax expense (benefit) for the years ended December 31, 2024, 2023 and 2022 is summarized as follows:

<i>(In thousands)</i>	2024	2023	2022
Current:			
Federal	\$ 14,786	\$ 10,835	\$ 39,216
State	896	1,267	4,077
Foreign	91,552	125,091	97,611
	<u>\$ 107,234</u>	<u>\$ 137,193</u>	<u>\$ 140,904</u>
Deferred (net of valuation allowance):			
Federal	\$ (73,952)	\$ (135,408)	\$ (90,238)
State	(3,225)	(5,829)	(5,749)
Foreign	(1,725)	(4,369)	(6,757)
	<u>\$ (78,902)</u>	<u>\$ (145,606)</u>	<u>\$ (102,744)</u>
Income tax expense (benefit)	<u>\$ 28,332</u>	<u>\$ (8,413)</u>	<u>\$ 38,160</u>

Income tax expense (benefit) differs from the expected amounts based upon the statutory federal tax rates for the years ended December 31, 2024, 2023 and 2022 as follows:

<i>(In thousands)</i>	2024	2023	2022
Expected federal income tax at statutory rate	\$ 66,657	\$ 36,261	\$ 51,887
State income taxes before valuation allowance, net of federal tax effect	(6,169)	(9,374)	(5,907)
Effect of foreign source income	(25,685)	(18,383)	(7,607)
Tax contingencies	(2,271)	11,048	5,762
Valuation allowance	11,501	9,032	8,052
U.S. federal research credit	(14,250)	(18,679)	(13,525)
Equity compensation	5,386	7,431	5,290
Foreign derived intangible income	(7,861)	(5,144)	(15,265)
Acquisition related retention, severance, and transaction costs	—	—	8,924
Legal entity divestiture activity	973	(20,311)	—
Other items, net	51	(294)	549
Income tax expense (benefit)	<u>\$ 28,332</u>	<u>\$ (8,413)</u>	<u>\$ 38,160</u>

The Company has made employment and spending commitments to Singapore. In return for those commitments, the Company was granted a partial tax holiday for eight years starting in 2013. During 2017, this agreement was extended to 2027 in exchange for revised employment and spending commitments. The income tax benefits attributable to the tax status are \$27.7 million (\$0.18 per diluted share), \$19.7 million (\$0.13 per diluted share) and \$24.8 million (\$0.17 per diluted share) for the years ending December 31, 2024, 2023 and 2022, respectively. The 2024, 2023 and 2022 effective tax rates include additional benefits of \$17.1 million, \$12.1 million and \$14.2 million because the corporate tax rate in Singapore is lower than the U.S. rate.

At December 31, 2024, there were approximately \$339.7 million of accumulated undistributed earnings of subsidiaries outside of the United States, all of which are considered to be indefinitely reinvested. Management estimates that approximately \$23.0 million of withholding taxes would be incurred if these undistributed earnings were distributed.

The significant components of the Company's deferred tax assets and deferred tax liabilities at December 31, 2024 and 2023 are as follows:

(In thousands)

	2024	2023
Deferred tax assets attributable to:		
Accounts receivable	\$ 1,307	\$ 1,304
Inventory	11,891	12,456
Accruals not currently deductible for tax purposes	11,984	16,341
Net operating loss and credit carryforwards	69,461	55,685
Capital loss carryforward	7,542	5,281
Equity compensation	10,701	11,382
Interest expense limitations	51,429	37,691
Capitalization of engineering, research and development expenses	134,398	100,832
Other, net	6,298	15,064
Gross deferred tax assets	\$ 305,011	\$ 256,036
Valuation allowance	(71,785)	(60,330)
Net deferred tax assets	\$ 233,226	\$ 195,706
Deferred tax liabilities attributable to:		
Purchased intangible assets	\$ (215,906)	\$ (230,550)
Depreciation and amortization	(24,853)	(44,007)
Total deferred tax liabilities	\$ (240,759)	\$ (274,557)
Net deferred tax liabilities	\$ (7,533)	\$ (78,851)

Deferred tax assets are generally required to be reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred tax assets will not be realized.

As of December 31, 2024 and 2023, the Company had net U.S. deferred tax assets of \$20.1 million and deferred tax liabilities of \$76.7 million, respectively, which are composed of temporary differences and various tax credit carryforwards. The Company had state operating loss and credit carryforwards of approximately \$26.3 million, which begin to expire in 2025. Management believes that it is more likely than not that the benefit from certain state net operating loss carryforwards, state credit carryforwards, capital loss carryforwards and certain federal foreign tax credit carryforwards will not be realized. In recognition of this risk, management has provided valuation allowances of \$36.5 million and \$29.7 million as of December 31, 2024 and 2023, respectively, on the related deferred tax assets. If the assumptions change and management determines the assets will be realized, the tax benefits relating to any reversal of the valuation allowance on deferred tax assets at December 31, 2024 will be recognized as a reduction of income tax expense.

As of December 31, 2024 and 2023, the Company had net non-U.S. deferred tax assets of \$44.2 million and \$58.2 million, respectively, for which management determined based upon the available evidence a valuation allowance of \$35.3 million and \$30.6 million as of December 31, 2024 and 2023, respectively, was required against the non-U.S. gross deferred tax assets. For other non-U.S. jurisdictions, management relies upon projections of future taxable income to utilize deferred tax assets.

At December 31, 2024, the Company had foreign operating loss carryforwards of \$64.3 million, which begin to expire in 2025.

Benefits from tax positions should be recognized in the financial statements only when it is more likely than not that the tax positions will be sustained upon examination by the appropriate taxing authority that would have full knowledge of all relevant information. A tax position that meets the more-likely-than-not recognition threshold is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. Tax positions that fail to meet the more-likely-than-not recognition threshold should be recognized in the first subsequent financial reporting period in which that threshold is met. Previously recognized tax positions that no longer meet the more-likely-than-not recognition threshold should be derecognized in the first subsequent financial reporting period in which that threshold is no longer met. The provisions also provide guidance on the accounting for and disclosure of unrecognized tax benefits, interest and penalties.

Reconciliations of the beginning and ending balances of the total amounts of gross unrecognized tax benefits for the years ended December 31, 2024 and 2023 are as follows:

(In thousands)

	2024	2023
Gross unrecognized tax benefits at beginning of year	\$ 67,717	\$ 53,478
Increase in tax positions from prior years	305	242
Decrease in tax positions from prior years	(4,818)	—
Increases in tax positions for current year	5,455	17,111
Settlement of tax positions for current year	(21,570)	—
Lapse in statute of limitations	(2,765)	(3,114)
Gross unrecognized tax benefits at end of year	<u>\$ 44,324</u>	<u>\$ 67,717</u>

The total amount of net unrecognized tax benefits that, if recognized, would affect the effective tax rate was \$39.3 million at December 31, 2024.

Penalties and interest paid or received are recorded in other expense, net in the consolidated statements of operations. As of December 31, 2024 and 2023, the Company had accrued interest and penalties related to unrecognized tax benefits of \$6.0 million and \$6.6 million, respectively. Expenses of \$3.0 million, \$2.5 million and \$2.0 million were recognized as interest and penalties in the consolidated statements of operations for the years ended December 31, 2024, 2023 and 2022, respectively.

The Company files income tax returns in the U.S. and in various state, local and foreign jurisdictions. The statutes of limitations related to both the consolidated federal income tax return and state returns are closed for all years up to and including 2020 and 2020, respectively. With respect to foreign jurisdictions, the statute of limitations varies from country to country, with the earliest open year for the Company's major foreign subsidiaries being 2018.

Due to the expiration of various statutes of limitations and settlements of audits, it is reasonably possible that the Company's gross unrecognized tax benefit balance may decrease within the next twelve months by approximately \$0.2 million.

The Organization Economic Co-operation and Development ("OECD") introduced Base Erosion and Profit Shifting ("BEPS") Pillar 2 rules that impose a global minimum tax rate of 15%. Numerous countries, including European Union member states, have enacted or are expected to enact legislation to be effective as early as January 1, 2024, with general implementation of a global minimum tax by January 1, 2025. There was no material impact in 2024 and we continue to evaluate the future potential impact on our consolidated financial statements and related disclosures.

17. EQUITY

Dividends

Holders of the Company's common stock are entitled to receive dividends when and if they are declared by the Company's board of directors. The Company's board of directors declared quarterly cash dividends of \$0.10 per share during 2024, which totaled \$60.7 million. The Company's board of directors declared quarterly cash dividends of \$0.10 per share during 2023, which totaled \$60.3 million. The Company's board of directors declared quarterly cash dividends of \$0.10 per share during 2022, which totaled \$57.3 million.

On January 15, 2025, the Company's board of directors declared a quarterly cash dividend of \$0.10 per share to be paid on February 19, 2025 to shareholders of record as of January 29, 2025.

Future dividend declarations, if any, as well as the record and payment dates for such dividends, are subject to the final determination of the Company's board of directors.

2020 Stock Plan

In 2020, the Company's board of directors and stockholders approved the Entegris, Inc. 2020 Stock Plan (the "2020 Stock Plan"). The 2020 Stock Plan replaced the Entegris, Inc. 2010 Stock Plan for future stock awards and stock option grants. The 2020 Stock Plan has a term of ten years and provides for the issuance of stock options and other share-based awards to selected employees, directors, and other individuals or entities that provide services to the Company or its affiliates. Under the 2020 Stock Plan, the board of directors or a committee selected by the board of directors will determine for each award, the term, price, number of shares, rate at which each award is exercisable and whether restrictions are imposed on the shares subject to the awards. The exercise price for option awards generally may not be less than the fair market value per share of the underlying common stock on the date granted. The 2020 Stock Plan provides that after December 31, 2019, any shares subject to stock awards that were awarded from the Company's expired plans and that are forfeited, expired or otherwise terminated without issuance of shares will again be available for issuance under the 2020 Stock Plan.

For all plans, exclusive of the employee stock purchase plan, the Company had shares available for future grants of 9.7 million, 10.2 million, and 10.9 million shares at December 31, 2024, 2023 and 2022, respectively.

Stock Options

Stock option activity for the years ended December 31, 2024, 2023 and 2022 is summarized as follows:

	2024		2023		2022	
	Number of shares	Weighted average exercise price	Number of shares	Weighted average exercise price	Number of shares	Weighted average exercise price
<i>(Shares in thousands)</i>						
Options outstanding, beginning of year	1,314	\$ 71.83	1,839	\$ 62.59	657	\$ 55.32
Granted	135	140.62	232	81.79	146	128.44
Assumed in CMC acquisition	—	—	—	—	1,178	55.80
Exercised	(281)	52.19	(715)	51.04	(141)	40.00
Cancelled or forfeited	(2)	88.11	(42)	76.02	(1)	61.42
Options outstanding, end of year	1,166	\$ 84.51	1,314	\$ 71.83	1,839	\$ 62.59
Options exercisable, end of year	788	\$ 71.76	900	\$ 63.08	1,386	\$ 54.53

Options outstanding under the Company's stock plans at December 31, 2024 are summarized as follows:

	Options outstanding			Options exercisable	
	Number outstanding	Weighted average remaining life in years	Weighted-average exercise price	Number exercisable	Weighted average exercise price
<i>(Shares in thousands)</i>					
Range of exercise prices					
\$0.00 to \$35.15	129	1.2 years	\$ 31.83	129	\$ 31.83
\$35.16 to \$70.30	276	2.9 years	58.20	275	58.20
\$70.31 to \$105.45	500	4.5 years	86.29	311	87.07
\$105.46 to \$140.62	261	5.1 years	134.73	73	128.44
	1,166	3.9 years	\$ 84.51	788	\$ 71.76

The weighted average remaining contractual term for options outstanding and options exercisable for all plans at December 31, 2024 was 3.9 years and 3.3 years, respectively.

Under the stock plans, the total pre-tax intrinsic value of stock options exercised during the years ended December 31, 2024 and 2023 was \$23.2 million and \$29.2 million, respectively. The aggregate intrinsic value, which represents the total pre-tax intrinsic value based on the Company's closing stock price of \$99.06 at December 31, 2024, which theoretically could have been received by the option holders had all option holders exercised their options as of that date, was \$26.3 million and \$23.6 million for options outstanding and options exercisable, respectively.

Share-based payment awards in the form of stock option awards for 0.1 million, 0.2 million and 0.1 million shares were granted to employees during the years ended December 31, 2024, 2023 and 2022, respectively. Compensation expense is based on the grant date fair value. The awards vest annually over a period of four years and have a contractual term of 7 years. The Company estimates the fair value of stock options using the Black-Scholes valuation model. Key inputs and assumptions used to estimate the fair value of stock options include the grant price of the award, the expected option term, volatility of the Company's stock, the risk-free rate and the Company's dividend yield. Estimates of fair value are not intended to predict actual future events or the value ultimately realized by employees who receive equity awards, and subsequent events are not indicative of reasonableness of the original estimates of fair value made by the Company.

The fair value of each stock option grant was estimated at the date of grant using a Black-Scholes option pricing model. The following table presents the weighted-average assumptions used in the valuation and the resulting weighted-average fair value per option granted for the years ended December 31, 2024, 2023 and 2022:

Employee stock options:

	2024	2023	2022
Volatility	47.6 %	46.5 %	40.9 %
Risk-free interest rate	4.4 %	3.7 %	1.5 %
Dividend yield	0.3 %	0.5 %	0.3 %
Expected life (years)	4.6	4.7	4.2
Weighted average fair value per option	\$ 61.94	\$ 34.40	\$ 43.47

A historical daily measurement of volatility is determined based on the expected life of the option granted. The risk-free interest rate is determined by reference to the yield on an outstanding U.S. Treasury note with a term equal to the expected life of the option granted. Expected life is determined by reference to the Company's historical experience. The Company determines the dividend yield by dividing the expected annual dividend on the Company's stock by the option exercise price.

Employee Stock Purchase Plan

During 2024, the Company adopted a new 2024 Employee Stock Purchase Plan ("ESPP") that superseded the Entegris, Inc. Amended and Restated Employee Stock Purchase Plan. The ESPP allows employees to elect, at six-month intervals, to contribute up to 10% of their compensation, subject to certain limitations, to purchase shares of the Company's common stock at a discount of 15% from the fair market value on the first day or last day of each six-month period. The Company treats the ESPP as a compensatory plan. At December 31, 2024, 0.9 million shares remained available for issuance under the ESPP. Employees purchased 0.2 million, 0.2 million and 0.2 million shares, at a weighted-average price of \$89.59, \$68.87, and \$65.25 during the years ended December 31, 2024, 2023 and 2022, respectively.

Restricted Stock Units

Restricted stock units are awards of common stock made under the Stock Plans that are subject to a risk of forfeiture if the awardee terminates employment with the Company prior to the lapse of the restrictions. The value of such restricted stock units is determined using the market price on the grant date. Compensation expense for restricted stock units is generally recognized using the straight-line single-option method. A summary of the Company's restricted stock unit activity for the years ended December 31, 2024, 2023 and 2022 is presented in the following table:

	2024		2023		2022	
<i>(Shares in thousands)</i>	Number of shares	Weighted average grant date fair value	Number of shares	Weighted average grant date fair value	Number of shares	Weighted average grant date fair value
Unvested, beginning of year	1,005	\$ 89.08	844	\$ 90.37	897	\$ 62.69
Granted	484	138.44	640	80.45	366	117.82
Assumed in CMC acquisition	—	—	—	—	155	92.96
Vested	(371)	86.92	(389)	78.17	(523)	64.77
Forfeited	(61)	101.31	(90)	89.23	(51)	85.16
Unvested, end of year	<u>1,057</u>	111.81	<u>1,005</u>	89.08	<u>844</u>	90.37

During the years ended December 31, 2024, 2023 and 2022, the Company awarded performance-based restricted stock units for up to 0.1 million, 0.2 million and 0.1 million shares of common stock, respectively, to be issued upon the achievement of performance conditions under the Company's stock plans to certain officers. Compensation expense is based on the grant date fair value. The awards vest on the third anniversary of the award date if the performance conditions have been satisfied. The Company estimates the fair value of the performance shares using a Monte Carlo simulation process.

As of December 31, 2024, the total compensation cost related to unvested stock options, performance-based restricted stock units and restricted stock unit awards not yet recognized was \$5.0 million, \$5.4 million and \$62.7 million, respectively, and is expected to be recognized over the next 2.7 years on a weighted-average basis.

Modifications

During the year ended December 31, 2022, the Company modified all employee awards of restricted share units, options, and performance-based restricted share units that were granted in the 2022 fiscal year to provide that the awards will generally vest in connection with the grantee's qualifying retirement. The Company accounted for this as a modification of awards and recognized incremental compensation cost of \$15.3 million. The incremental compensation cost was measured as the

accelerated expense over the requisite service period. The fair-value-based measure of the modified awards was the same as the fair-value based measure of the original award immediately before modification because the modification only affected the service period of the award.

During the years ended December 31, 2023 and 2022, the Company modified restricted share units, options, and performance-based restricted share units granted prior to the 2022 fiscal year for certain employees to accelerate the unvested awards upon their respective retirements from the Company. The Company accounted for this as a modification of awards and recognized incremental compensation cost of \$0.7 million and \$6.2 million for the years ended December 31, 2023 and 2022, respectively. The incremental compensation cost was measured as the excess of the fair value of the modified award over the fair value of the original award immediately before its terms were modified and was recognized on the date of the modification for the vested awards.

There were no material modifications to employee awards during the year ended December 31, 2024.

Valuation and Expense Information

The Company recognizes compensation expense for all share-based payment awards made to employees and directors based on their estimated fair values on the date of grant. Compensation expense is recognized using the straight-line attribution method to recognize share-based compensation over the service period of the award, with adjustments recorded for forfeitures as they occur. Awards issued to employees who are retirement eligible or nearing retirement eligibility are expensed on an accelerated basis. The following table summarizes the allocation of share-based compensation expense related to employee stock options, restricted stock awards, performance-based restricted stock awards and grants under the employee stock purchase plan for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Cost of sales	\$ 11,086	\$ 8,896	\$ 5,780
Engineering, research and development expenses	10,461	7,999	4,596
Selling, general and administrative expenses	44,312	44,476	56,201
Share-based compensation expense	\$ 65,859	\$ 61,371	\$ 66,577
Tax benefit	12,967	12,472	13,977
Share-based compensation expense, net of tax	<u>\$ 52,892</u>	<u>\$ 48,899</u>	<u>\$ 52,600</u>

18. BENEFIT PLANS

401(k) Plan

The Company maintains 401(k) defined contribution plans covering employees in the U.S. The related expense totaled \$24.6 million, \$25.4 million and \$21.9 million in the fiscal years ended December 31, 2024, 2023 and 2022, respectively. During the year ended December 31, 2024, the Company matched employees' contributions to a maximum of 6% of the employee's eligible wages. The Company's Singapore and South Korea subsidiaries also make immaterial contributions to retirement plans that function as defined contribution retirement plans.

Defined Benefit Plans

The employees of the Company's subsidiaries in Japan, Taiwan, France and Germany are covered in defined benefit pension plans. The benefit obligation was reduced by \$1.4 million due to the EC disposition in the year ended December 31, 2023. On December 31, 2023, the Company converted its South Korea defined pension plans to defined contribution plans. As a result of this conversion, the Company settled and paid out to beneficiaries an amount of \$2.3 million on January 2, 2024. The Company uses a December 31 measurement date for its pension plans. A summary of these combined plans are:

<i>(In thousands)</i>	2024	2023
Projected benefit obligation	\$ 11,606	\$ 12,618
Fair value of plan assets	1,475	1,407
Plan assets less benefit obligation - net amount recognized	(10,131)	(11,211)
Accumulated benefit obligation	8,996	10,375

Cash Flows

Benefits for the combined plans were \$0.6 million, \$1.0 million and \$0.7 million in fiscal years 2024, 2023 and 2022, respectively, consisting primarily of service costs. Net service costs are included in Cost of sales and Operating expenses, and

all other costs are recorded in Other expense, net in our Consolidated Statements of Operations. The Company expects to make the following benefit payments:

<i>(In thousands)</i>	Payments
2025	\$ 592
2026	218
2027	246
2028	361
2029	218
Years 2030-2034	1,581

19. EARNINGS PER COMMON SHARE

Basic earnings per common share (“EPS”) is calculated based on the weighted average number of shares of common stock outstanding during the applicable period. Diluted EPS is calculated based on the weighted average number of shares of common stock outstanding plus potentially dilutive shares of common stock outstanding during the applicable period. The following table presents a reconciliation of the share amounts used in the computation of basic and diluted EPS:

<i>(In thousands)</i>	2024	2023	2022
Basic—weighted average common shares outstanding	150,946	149,900	142,294
Weighted average common shares assumed upon exercise of stock options and vesting of restricted common stock	894	1,045	852
Diluted—weighted average common shares and common shares equivalent outstanding	151,840	150,945	143,146

The Company excluded the following shares underlying stock-based awards from the calculations of diluted EPS because their inclusion would have been anti-dilutive for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Shares excluded from calculations of diluted EPS	464	657	447

20. SEGMENT INFORMATION

In the fourth quarter of 2024, the Company announced an internal reorganization, combining two complementary divisions into one and realigning its customer facing organization. Our business is now organized and operated in two operating segments as discussed below. All prior periods have been recast to reflect the change. These segments share common business systems and processes, technology centers and technology roadmaps. With our complementary capabilities, we believe we are uniquely positioned to create new, co-optimized and increasingly integrated solutions for our customers, which should translate into improved device performance, lower cost of ownership and faster time to market.

- The Materials Solutions segment, or MS, provides materials-based solutions, such as chemical vapor and atomic layer deposition materials, chemical mechanical planarization (“CMP”) slurries and pads, ion implantation specialty gases, formulated etch and clean materials, and other specialty materials that enable our customers to achieve better device performance and faster time to yield, while providing for lower total cost of ownership.
- The Advanced Purity Solutions segment, or APS, offers filtration, purification and contamination-control solutions that improve customers’ yield, device reliability and cost by ensuring the purity of critical liquid chemistries and gases and the cleanliness of wafers and other substrates used throughout semiconductor manufacturing processes, the semiconductor ecosystem and other high-technology industries.

The Company's method for measuring profitability on a reportable segment basis is segment profit. Segment profit is defined as net sales less direct and indirect segment operating expenses, including certain general and administrative costs for the Company’s human resources, finance and information technology functions. The Company accounts for inter-segment sales and transfers as if the sales or transfers were to third parties. Inter-segment sales are presented as an elimination below. The remaining unallocated expenses consist mainly of the Company’s corporate functions as well as interest expense, interest income, amortization of intangible assets and income tax expense.

The Company's chief operating decision maker (CODM) is the President and Chief Executive Officer. For each of the reportable segments, the CODM uses segment profit (based on each segment's target model) for determining the allocation of resources (including employees, financial, or capital resources) to the segments to achieve the Company's strategic plan and to assess the performance of each segment by monitoring actual results against performance targets established in the Company's annual budget and forecasting process. Total assets by segment are not presented as that information is not used to allocate resources or assess performance at the segment level and is not regularly reviewed by the Company's CODM.

Summarized financial information for the Company's reportable segments is shown in the following tables for the years ended December 31, 2024, 2023 and 2022:

	2024			
<i>(In thousands)</i>	MS	APS	Inter-segment	Total
Net sales	\$ 1,400,082	\$ 1,850,199	\$ (9,073)	\$ 3,241,208
Cost of sales	769,182	994,380	(9,073)	1,754,489
Operating expenses	344,680	359,688	—	704,368
Segment profit	<u>\$ 286,220</u>	<u>\$ 496,131</u>	<u>\$ —</u>	<u>\$ 782,351</u>

	2023			
<i>(In thousands)</i>	MS	APS	Inter-segment	Total
Net sales	\$ 1,689,467	\$ 1,846,596	\$ (12,137)	\$ 3,523,926
Cost of sales	1,060,639	977,819	(12,137)	2,026,321
Operating expenses	332,453	337,329	—	669,782
Segment profit	<u>\$ 296,375</u>	<u>\$ 531,448</u>	<u>\$ —</u>	<u>\$ 827,823</u>

	2022			
<i>(In thousands)</i>	MS	APS	Inter-segment	Total
Net sales	\$ 1,380,208	\$ 1,913,985	\$ (12,160)	\$ 3,282,033
Cost of sales	892,801	1,004,979	(12,160)	1,885,620
Operating expenses	268,218	313,793	—	582,011
Segment profit	<u>\$ 219,189</u>	<u>\$ 595,213</u>	<u>\$ —</u>	<u>\$ 814,402</u>

The following table reconciles total segment profit to income before income tax expense (benefit) for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Total segment profit	\$ 782,351	\$ 827,823	\$ 814,402
Less:			
Amortization of intangibles	190,119	214,477	143,953
Unallocated general and administrative expenses	58,310	114,188	190,468
Operating income	\$ 533,922	\$ 499,158	479,981
Interest expense	215,217	312,378	212,669
Interest income	(7,368)	(11,257)	(3,694)
Other expense, net	4,021	25,367	23,926
Income before income tax expense (benefit)	\$ 322,052	\$ 172,670	\$ 247,080

The following tables summarize depreciation and capital expenditures for the Company's reportable segments for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Depreciation:			
MS	\$ 90,242	\$ 95,373	\$ 82,841
APS	97,878	77,310	52,530
Total depreciation	\$ 188,120	\$ 172,683	\$ 135,371

<i>(In thousands)</i>	2024	2023	2022
Capital expenditures:			
MS	\$ 86,694	\$ 141,851	\$ 151,331
APS	228,912	314,996	314,861
Total capital expenditures	\$ 315,606	\$ 456,847	\$ 466,192

In the following tables, revenue is disaggregated by country or region based on the ship to location of the customer for the years ended December 31, 2024, 2023 and 2022:

	2024			
<i>(In thousands)</i>	MS	APS	Inter-segment	Total
North America	\$ 316,010	\$ 364,718	\$ (9,073)	\$ 671,655
Taiwan	238,835	423,869	—	662,704
South Korea	202,555	216,195	—	418,750
Japan	128,537	180,857	—	309,394
China	256,966	414,253	—	671,219
Europe	115,755	159,733	—	275,488
Southeast Asia	141,424	90,574	—	231,998
	\$ 1,400,082	\$ 1,850,199	\$ (9,073)	\$ 3,241,208

	2023			
<i>(In thousands)</i>	MS	APS	Inter-segment	Total
North America	\$ 540,347	\$ 363,042	\$ (12,137)	\$ 891,252
Taiwan	231,982	358,651	—	590,633
South Korea	218,192	224,993	—	443,185
Japan	104,977	262,331	—	367,308
China	196,970	369,934	—	566,904
Europe	229,368	172,982	—	402,350
Southeast Asia	167,631	94,663	—	262,294
	\$ 1,689,467	\$ 1,846,596	\$ (12,137)	\$ 3,523,926

<i>(In thousands)</i>	2022			
	MS	APS	Inter-segment	Total
North America	\$ 422,185	\$ 385,634	\$ (12,160)	\$ 795,659
Taiwan	202,565	457,562	—	660,127
South Korea	162,601	251,476	—	414,077
Japan	107,239	242,763	—	350,002
China	198,022	303,934	—	501,956
Europe	150,914	174,101	—	325,015
Southeast Asia	136,682	98,515	—	235,197
	<u>\$ 1,380,208</u>	<u>\$ 1,913,985</u>	<u>\$ (12,160)</u>	<u>\$ 3,282,033</u>

The following table summarizes property, plant and equipment, net, attributed to significant countries for the years ended December 31, 2024, 2023 and 2022:

<i>(In thousands)</i>	2024	2023	2022
Property, plant and equipment, net:			
North America	\$ 876,767	\$ 747,823	\$ 776,913
South Korea	117,662	101,107	84,253
Japan	114,770	118,872	104,282
Malaysia	44,258	50,183	46,703
China	30,380	32,884	31,592
Taiwan	434,641	412,346	253,285
Other	4,448	4,828	96,309
	<u>\$ 1,622,926</u>	<u>\$ 1,468,043</u>	<u>\$ 1,393,337</u>

The Company reported net sales of 10 percent or more for one customer in the amount of \$508.0 million, \$382.9 million and \$408.6 million for the years ended December 31, 2024, 2023 and 2022, respectively, all of which include sales from all the Company's segments.

21. GOVERNMENT GRANTS

CHIPS and Science Act Agreement

On December 3, 2024, the Company entered into a definitive agreement to receive funding under the CHIPS and Science Act of 2022 ("CHIPS Act"). The agreement provides the Company with up to \$77.0 million intended to support capital expenditures related to the construction of a manufacturing facility in Colorado Springs, Colorado, research and development, and workforce training initiatives.

The grant is subject to certain conditions, including compliance with applicable federal regulations, progress milestones, and reporting requirements as set forth by the U.S. Department of Commerce. The Company is also required to meet specific performance and employment targets to maintain eligibility for the funding. As of December 31, 2024, the Company has not received any disbursements and anticipates completing milestones beginning in 2025.

There are no material penalties or contingencies that would significantly affect the Company's financial position, except as described above.

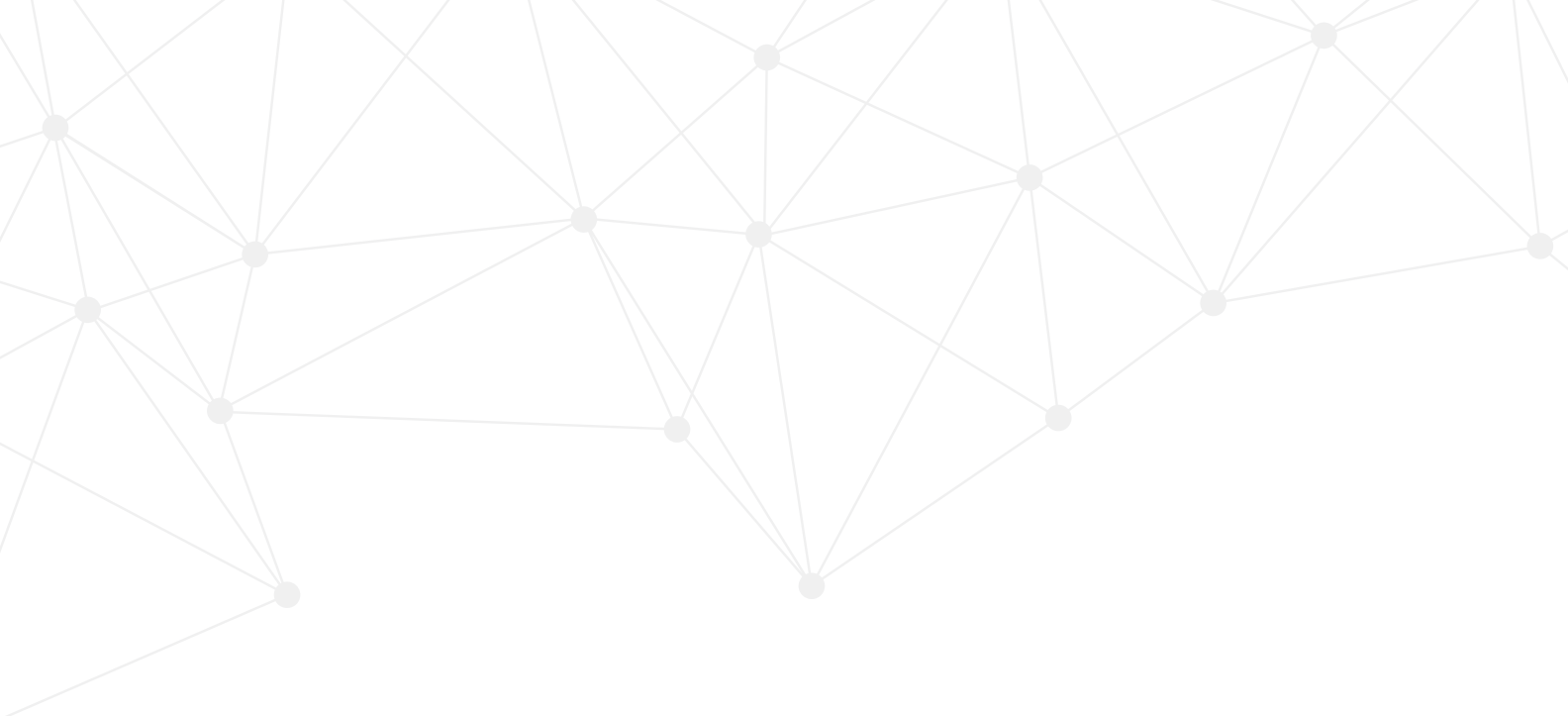
22. COMMITMENTS AND CONTINGENT LIABILITIES

We are, from time-to-time, involved in various claims, proceedings and lawsuits relating to our business, employees, intellectual property and other matters. The outcomes of these legal actions are not within our complete control and may not be known for prolonged periods of time. In some actions, the claimants seek damages, as well as other relief, that could require significant expenditures or result in lost revenues. We record a liability for these legal actions when a loss is known or considered probable and the amount can be reasonably estimated. If the reasonable estimate of a known or probable loss is a range, and no amount within the range is a better estimate than any other, the minimum amount of the range is accrued. There is judgment required in the determination of the likelihood of outcome, and if necessary determination of the estimate or range of potential outcomes. Based on the current information, the Company does not believe any known matters have a reasonable possibility of a material amount for litigation or other contingencies related to legal proceedings.

23. SUBSEQUENT EVENTS

The Company has evaluated subsequent events to the date of the issuance of the consolidated financial statements. The Company has determined that there are no events occurring in this period that require disclosure or adjustment, except as disclosed above.

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