Risk Factors Comparison 2024-02-15 to 2023-02-16 Form: 10-K

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Our business, financial condition, results of operations, and cash flows can be affected by a number of factors, including, but not limited to, those set forth below and elsewhere in this Form 10- K, any one of which could cause our actual results to vary materially from recent results or from our anticipated future results. Therefore, an investment in us involves some risks, including the risks described below. Although the risks are organized by headings, and each risk is discussed separately, many are interrelated. You should not interpret the disclosure of any risk factor to imply that the risk has not already materialized. The risks discussed below are not the only risks that we may experience. If any of the following risks occur, our business, results of operations, or financial condition could be negatively impacted. Risks Relating to Economic Conditions The businesses of many of our customers are subject to significant fluctuations as a result of the cyclical nature of their industries and their sensitivity to general economic conditions, which could adversely affect their demand for our products and reduce our sales and profitability. A substantial number of our customers are in the semiconductor, industrial, aerospace and defense, automotive, energy, consumer electronics, and telecom and data center end markets. Each of these end markets is cyclical in nature, influenced by a combination of factors which could have a negative impact on our business, including, among other things, periods of economic growth or recession, inflation, rising interest rates and the strength or weakness of the U. S. dollar, the strength of the semiconductor, automotive electronics, and oil and gas industries, the rate of construction of telecommunications infrastructure equipment, and government spending on defense. Also, in times when growth rates in our markets are lower, or negative, there may be temporary inventory adjustments by our customers that may negatively affect our business. ~~Risks Relating to the COVID- 19 Pandemic The COVID- 19 pandemic has had, and may continue to have, an adverse impact on our business. The worldwide spread of the COVID- 19 virus resulted in a global slowdown of economic activity which could continue to impact demand for a broad variety of goods and services, including from the Company' s customers, while also continuing to disrupt sales channels and marketing activities for an unknown period of time. New and potentially more contagious variants of the virus have emerged over the course of the pandemic, along with a surge in cases in several regions across the globe, including Europe and Asia, resulting in renewed shutdown, mandatory quarantines and shelter-in place orders in certain regions. These events have led, at times, to slowdowns in our operations, including the temporary shutdown of the Company' s Shanghai facility in the first half of 2022. Through continued economic challenges, there continue to be periodic shipping and logistics challenges and continued supply chain constraints, shortages and delays, along with inflationary pricing pressures. As normal business operations resume, we continue to practice enhanced sanitation procedures, health checks and social distancing protocols, however, none of these measures can completely eliminate the risk of exposure or spread of COVID- 19. There could be additional waves or spikes in infection, again causing widespread social, economic and operational impacts. Further, the lingering impacts of the COVID- 19 pandemic may continue to adversely affect the economies and financial markets in many countries. Any prolonged disruption of manufacturing or shipment of our products caused by the COVID- 19 pandemic or any future pandemics could materially and adversely affect our results of operations and financial conditions. Surges in infection rate, new shutdowns or quarantines, emergence of new and potentially more contagious variants of the virus and staffing and labor supply challenges may impact our suppliers and our ability to source materials in a timely manner. Further, ongoing supply chain constraints and inflationary pressure could have a negative impact on our results. Risks Relating to Our Business and Operations Because we experience seasonal fluctuations in certain end- market sales, our quarterly results will fluctuate, and our annual performance will be affected by the fluctuations. We expect seasonal patterns to continue, which may cause our quarterly results to fluctuate. If our revenue during any quarter were to fall below the expectations of investors or securities analysts, our share price could decline, perhaps significantly. Unfavorable economic conditions, lower than normal levels of demand, and other occurrences in any quarter could also harm our results of operations.~~ For example, we have experienced customers building inventory in anticipation of increased demand, whereas in other periods, **we experienced decreased** demand ~~decreased~~ because our customers had excess inventory. **Risks Relating to Our Business and Operations** A portion of our revenue is derived from the sale of defense- related products through various contracts and subcontracts. These contracts may be suspended, canceled, or delayed, which could have an adverse impact on our revenues. In ~~2022~~ **2023** , ~~16~~ **14** % of our value-added sales were to customers in the aerospace and defense end market. A portion of these customers operate under contracts with the U. S. Government, which are vulnerable to termination at any time, for convenience or default. Some of the reasons for cancellation include, but are not limited to, budgetary constraints or re- appropriation of government funds, timing of contract awards, violations of legal or regulatory requirements, and changes in political agenda. If cancellations were to occur, it would result in a reduction in our revenue. Furthermore, significant reductions to defense spending could occur over the next several years due to government spending cuts, which could have a significant adverse impact on us. For example, high- margin defense application delays and / or push- outs may adversely impact our results of operations, including quarterly earnings. The markets for our products are experiencing rapid changes in technology. We operate in markets driven by rapidly changing technology and evolving customer specifications and industry standards. Next- generation solutions may quickly render an existing product obsolete and unmarketable. For example, for many years thermal and mechanical performance have been at the forefront of device packaging for wireless communications infrastructure devices. In recent years, a tremendous effort has been put into developing disruptive thermal spreading materials which requires newer technology that replaces the traditional approach of building package. Our growth and future results of operations depend in part upon our ability to enhance existing products and processes which introduce newly developed products on a timely basis that conform to prevailing and evolving industry standards, meet or exceed technological advances in the marketplace, meet changing customer specifications, achieve market acceptance, and respond to our competitors' products. The process of developing new products can be technologically challenging and requires the accurate anticipation of technological and market trends. We may not be able to introduce new products successfully or do so on a timely basis. If we fail to develop new products that are appealing to our customers or fail to develop products on time and within budgeted amounts, we may lose customers or otherwise be unable to recover our research and development costs, which could adversely affect our margins and profitability. The availability of competitive substitute materials for beryllium- containing products may reduce our customers' demand for these products and reduce our sales. In certain product applications, we compete with manufacturers of non- beryllium- containing products, including organic composites, metal alloys or composites, titanium, and aluminum. Our customers may choose to use substitutes for beryllium- containing products in their products for a variety of reasons, including, among other things, the lower costs of those substitutes, the health and safety concerns relating to these products (despite numerous studies affirming the safety of beryllium in these products), and the risk of litigation relating to beryllium- containing products. If our customers use substitutes for beryllium- containing materials in their products, the demand for beryllium- containing products may decrease, which could reduce our sales. Our long and variable sales and development cycle makes it difficult for us to predict if and when a new product will be sold to customers. Our sales and development cycle, which is the period from the generation of a sales lead or new product idea through the development of the product and the recording of sales, may typically take several years, making it very difficult to forecast sales and results of operations. Our inability to accurately predict the timing and magnitude of sales of our products, especially newly introduced products, could affect our ability to meet our customers' product delivery requirements or cause our results of operations to suffer if we incur expenses in a particular period that do not translate into sales during that period, or at all. In addition, these failures would make it difficult to plan future capital expenditure needs and could cause us to fail to meet our cash flow requirements. The availability and prices of some raw materials we use in our manufacturing operations fluctuate, and increases in raw material costs can adversely affect our operating results and our financial condition. We manufacture advanced engineered materials using various precious and non- precious metals, including beryllium, tantalum, aluminum, cobalt, copper, gold, nickel, palladium, platinum, ruthenium, silver, tin, iridium, rhodium, niobium, hafnium, and tungsten. The availability of, and prices for, these raw materials are volatile and are influenced by worldwide economic conditions, speculative action, world supply and demand balances, inventory levels, availability of substitute metals, the U. S. dollar exchange rate, production costs of U. S. and foreign competitors, anticipated or perceived shortages, and other factors. Prices for precious metal and certain non- precious metals including tantalum, nickel, iridium, rhodium, niobium, hafnium and tungsten have fluctuated significantly in recent years. Additionally, geopolitical instability and the inflationary environment have added to the volatility. Higher prices can cause adjustments to our inventory carrying values, whether as a result of quantity discrepancies, normal manufacturing losses, differences in scrap rates, theft or other factors, which could have a negative impact on our profitability and cash flows. Also, the price of our products will generally increase in tandem with rising metal prices, as a result of changes in precious metal prices that are passed through to our customers, which could deter them from purchasing our products and adversely affect our net sales and operating profit. Further, we maintain some precious metals and copper on a consigned inventory basis. The owners of the precious metals and copper charge a fee that fluctuates based on the market price of those metals and other factors. A significant increase in the market price or the consignment fee of precious metals and / or copper would increase our costs, negatively impacting our operating profit. We are not dependent on any one supplier for our primary raw materials, but the business could be impacted by supply constraints. If, in the future, we are unable to obtain sufficient amounts of metals on a timely basis, we may not be able to obtain metals from alternate sources at competitive prices. In addition, interruptions or reductions in our supply of metals could make it difficult to satisfy our customers' delivery requirements, which could have a material adverse effect on our business, financial condition, results of operations and cash flows. Utilizing precious metals in the manufacturing process creates challenges in physical inventory valuations that may impact earnings. We manufacture precious, non- precious, and specialty metal products and also have metal cleaning operations and in- house refineries that allow for the reclaim of precious metals from internally generated or customer scrap. We refine that scrap through our internal operations and externally through outside vendors. When taking periodic physical inventories in our refinery operations, we reconcile the actual precious metals to what was estimated prior to the physical inventory count. Those estimates are based in part on assays or samples of precious metals taken during the refining process. If those estimates are inaccurate, we may have an inventory long (more physical precious metal than what we had estimated) or short (less physical precious metal than what we had estimated). These fluctuations could have a material impact on our financial statements and may impact earnings. In the past, our gross margin has been reduced by a net quarterly physical inventory adjustment. Higher precious metal prices may magnify the value of any potential inventory long or short. Because we maintain a significant inventory of precious metals, we may experience losses due to theft or employee error. Because we manufacture products that contain precious metals, we maintain a significant amount of precious metals at certain of our manufacturing facilities. Accordingly, we are subject to the risk of precious metal shortages resulting from employee error or theft. In the past, we have had precious metal shortages resulting from theft and employee error, which could reoccur in the future. While we maintain controls to prevent theft, including physical security measures, if our controls do not operate effectively or are designed ineffectively, our profitability could be adversely affected, including any charges that we might incur as a result of the shortage of our inventory and by costs associated with increased security, preventative measures, and insurance. Additionally, while we maintain insurance to cover the theft of our inventory, such coverage may not sufficiently cover any loss. Access to consigned metals may restrict our operations We use gold and other precious metals in the production of some of our products. We obtain most precious metals from consignors under consignment agreements. The consignors retain ownership of the precious metals and charge us fees based on the amounts we consign and the period of consignment. Because we do not control the consigned inventory, we may not be able to access the inventory to meet our forecasted needs, which could adversely impact our results of operations. We have a limited number of manufacturing facilities, and damage to those facilities, or to critical pieces of equipment in these facilities, could interrupt our operations, increase our costs of doing business, and impair our ability to deliver our products on a timely basis. Some of our facilities are interdependent. For instance, our manufacturing facility in Elmore, Ohio relies on our mining operation for its supply of beryllium hydroxide used in production of most of its beryllium-containing materials. Additionally, our Reading, Pennsylvania and Tucson, Arizona manufacturing facilities are dependent on materials produced by our Elmore, Ohio manufacturing facility, and our Wheatfield, New York manufacturing facility is dependent on our Buffalo, New York manufacturing facility. The destruction or closure of our mine, any of our manufacturing facilities, or to critical pieces of equipment within these facilities for a significant period of time as a result of harsh weather (including that caused by climate change), fire, explosion, act of war or terrorism, or other natural disaster or unexpected event **, including a security incident such as a ransomware attack,** may interrupt our manufacturing capabilities, increase our capital expenditures and our costs of doing business, and impair our ability to deliver our products on a timely basis. In addition, many of our manufacturing facilities depend on one source for electric power and natural gas, which could be interrupted due to equipment failures, terrorism, or another cause. If such events occur, we may need to resort to an alternative source of manufacturing or to delay production, which could increase our costs of doing business and / or result in lost sales. Our property damage and business interruption insurance may not cover all of our potential losses and may not continue to be available to us on acceptable terms, if at all. A security ~~breach of~~ **incident impacting** customer, employee, supplier, or Company information **, or Company systems or infrastructure,** may have a material adverse effect on our business, financial condition, and results of operations. In the conduct of our business, we collect, use, transmit, store, and report data on information systems **owned by the Company or hosted by third parties,** and interact with customers, vendors, and employees. Increased global information technology (IT) security threats and more sophisticated and targeted computer crime pose a risk to the security of our systems and networks **, as well as those of third parties who we rely on,** and **risk** the confidentiality, availability, and integrity of our data. We protect our sensitive **, confidential, or proprietary** information ~~and confidential~~ **as well as** personal data, our facilities, and information technology systems, but we **and third parties upon whom we rely to host or protect our data, facilities, and IT systems** may be vulnerable to future security ~~breaches~~ **incidents** . Despite our security measures, ~~our~~ **the** IT systems and infrastructure **of the Company and third parties who host or secure our data** may be vulnerable to customer viruses, cyber- attacks, security breaches caused by employee error or malfeasance, **and exploitable third- party software vulnerabilities** or other disruptions. Any such threat could compromise our networks and **those of third parties and** the information stored there could be accessed, publicly disclosed, lost, or stolen. **Attacks impacting** ~~A security breach of~~ our ~~computer~~ systems **or data** could interrupt or damage our operations or harm our reputation, resulting in a loss of sales, operating profits, and assets. The Company has taken steps to protect our computer systems **;** however **,** there is always a risk of ~~undetected~~ successful intrusions ~~. The Company requires employees to complete information security training programs multiple times a year to reinforce the importance of protecting company information and assets. Materion has not experienced a known information security breach to our~~ - **or** ~~systems~~ **attacks** , ~~however~~ **and any** intrusions **or attacks** could pose a risk of undetected data loss or theft that could later be used to harm the Company. ~~There~~ **These** ~~have been no financial penalties or settlements associated with an information security breach within the last three years. Similar~~ security threats exist with respect to the IT systems of our lenders, suppliers, consultants, advisers, and other third parties with whom we conduct business. ~~A security breach of~~ **Cyber attacks, vulnerabilities, and disruptions impacting** those ~~computer~~ systems could result in the loss, theft, or disclosure of confidential **, proprietary, or personal** information and could also interrupt or damage our operations, harm our reputation, and subject us to legal claims. Data privacy breaches and the evolving global governmental regulation relating to data privacy could adversely affect our results of operations and profitability. ~~We collect, store, access~~ **The Company is subject to increasingly complex** and ~~otherwise process certain confidential or sensitive~~ **changing laws and regulations enacted to protect business and personal information in the United States and other jurisdictions regarding privacy,** data **protection and data security** , including ~~proprietary~~ **those related to the collection, storage, use, transmission and protection of personal information and other** customer **, vendor or employee data. Laws** and ~~business~~ **regulations addressing personal** information, ~~personal~~ **including with respect to the European Union' s General Data Protection Regulation (GDPR), and the California Consumer Privacy Act of 2018 (CCPA) as amended by the California Privacy Rights Act (CPRA), and other similar United States state privacy laws, and the interpretation and enforcement of these and similar laws and regulations, are continuously evolving and there is significant uncertainty with respect to how compliance with these laws and regulations may develop and the costs and complexity of future compliance. The interpretation and application of** data ~~or other information~~ **protection laws may be interpreted and applied in a manner** that is ~~subject~~ **inconsistent with our data practices. In addition, as a result of existing or new data protection requirements, we incur and expect** to **continue to incur significant ongoing costs as part of our efforts to protect our business data and personal information and comply with applicable law. Any failure, or perceived failure, to comply with our data protection or** privacy ~~and security laws, regulations and customer~~ - **related legal obligations** ~~imposed requirements. The data privacy laws of the specific jurisdictions in which we operate~~ may **result in** ~~vary and potentially conflict. As such, we cannot predict the cost of compliance with future data privacy laws, regulations and standards, future interpretations of current laws, regulations and standards, or the potential effects on our business. Government~~ **governmental** enforcement actions **, litigation, or negative publicity, and could have** ~~can~~ - **an adverse effect on our** ~~be costly and interrupt the regular operation~~ - **operating** ~~of our business, and a violation of data privacy laws or a security breach involving personal data can result in fines, reputational damage and civil lawsuits, any of which may adversely affect our~~ results ~~of operations~~ and ~~profitability~~ **financial condition** . Our defined benefit pension plans and other post- employment benefit plans are subject to financial market risks that could adversely impact our financial performance. In 2019, the Company' s Board of Directors approved changes to the U. S. defined benefit pension plan. The Company froze the pay and service amounts used to calculate the pension benefits for active participants as of January 1, 2020. The Company has defined benefit pension plans in other non-U. S. locations. Our pension expense and our required contributions to our pension plans are directly affected by the value of plan assets, the projected rate of return on plan assets, the actual rate of return on plan assets, and the actuarial assumptions we use to measure our defined benefit pension plan obligations, including the rate at which future obligations are discounted to a present value, or the discount rate. Significant changes in market interest rates and decreases in the fair value of plan assets and investment losses on plan assets would increase funding requirements and expenses and may adversely impact our results of operations. We provide post- employment health benefits to eligible employees. Our retiree health expense is directly affected by the assumptions we use to measure our retiree health plan obligations, including the assumed rate at which health care costs will increase and the discount rate used to calculate future obligations. For retiree health accounting purposes, we have used a graded assumption schedule to assume the rate at which health care costs will increase. We cannot predict whether changing market or economic conditions, regulatory changes, or other factors will further increase our retiree health care expenses or obligations, diverting funds we would otherwise apply elsewhere. Unexpected events and natural disasters at our mine or manufacturing facilities could increase the cost of operating our business. A portion of our production costs at our mine are fixed regardless of current operating levels. Our operating levels are subject to conditions beyond our control that may increase the cost of mining for varying lengths of time. These conditions include, among other things, weather (including severe weather caused by climate change), fire, natural disasters, pit wall failures, and ore processing changes. Our operations also involve the handling and production of potentially explosive materials. It is possible that an explosion at our mine or other manufacturing facilities could result in death or injuries to employees and others and material property damage to third parties and us. Any explosion could expose us to adverse publicity or liability for damages and materially adversely affect our operations. Any of these events could increase our cost of operations. Tax increases and changes in tax ~~rules~~ **laws** may adversely affect our financial results As a company conducting business on a global basis with material operations throughout the United States, we are exposed, both directly and indirectly, to the effects of changes in U. S., state, local, and foreign tax ~~rules~~ **laws** . Taxes for financial reporting purposes and cash tax liabilities in the future may be adversely affected by changes in such tax ~~rules~~ **laws** . Such changes may put us at a competitive disadvantage compared to some of our major competitors, to the extent we are unable to pass the tax costs through to our customers. **Our success is dependent upon our relationships with** ~~The Biden administration has announced in 2021 and 2022, and in~~ certain ~~cases has enacted,~~ **key customers. Although the Company serves** a **diverse customer base, a portion of our sales is concentrated amongst a limited** number of ~~tax proposals to fund new government investments in infrastructure~~ **customers. If we lost one or more of these major customers** , ~~healthcare~~ **or if one or more major customers significantly decreased its orders for our products** , ~~and education~~ **our business** , ~~among~~ **results of operations and financial condition could be materially and adversely impacted. In fiscal year 2023, one customer accounted for approximately ten percent of our net sales. Our business may be impacted by external factors that we may not be able to control. War, civil conflict, terrorism,** other **geopolitical** ~~things. Certain of these proposals involve an~~ **and** ~~increase in the~~ **diplomatic tensions, natural disasters, climate change and public health issues including** domestic ~~corporate tax rate~~ **or international pandemics** , ~~which if implemented could~~ **other outbreaks of contagious diseases (such as the COVID- 19 pandemic) and other adverse public health developments** have **caused or could cause damage or disruption to domestic or international commerce by creating economic or political uncertainties. Additionally, the volatility in the financial markets could negatively impact our business. These events could result in** a **decrease in demand for our products, affect the availability of credit facilities to us, our customers or other members of the supply chain necessary to transact business, make it difficult or impossible to deliver orders to customers or receive** ~~material~~ **materials** ~~impact on~~ **from suppliers, affect the availability** ~~our~~ - **or** ~~future~~ **pricing of energy sources or** ~~results~~ - **result** ~~of operations and cash flows~~ **in other severe consequences that may or may not be predictable** . **As** ~~Economic and geopolitical instability including as~~ a result **,** ~~of military conflict could have a material adverse effect on~~ our **business** ~~operating results~~ , financial condition ~~,~~ and **results of** ~~cash flows Geopolitical conflict may have a global impact on our~~ operations ~~, customers, or suppliers. Conflicts may result in various sanctions, including asset freezes and prohibitions on transactions. These sanctions~~ could **be materially adversely affected** ~~have a larger impact that expands into other geographies where we do business, including our supply chain, business partners, and customers in those markets, which could result in lost sales, supply shortages, commodity price fluctuations, increased manufacturing costs, transportation logistics challenges, customer credit and liquidity issues, and lost efficiencies~~ . Risks Related to Legal, Compliance and Regulatory Matters We conduct our sales and distribution operations on a worldwide basis and are subject to the risks associated with doing business outside the United States. We sell to customers outside of the United States from our domestic and international operations. Revenue from international operations (principally Europe and Asia) accounted for approximately 51 % in **2023, 51 % in** 2022, **and** 47 % in 2021 ~~, and 45 % in 2020~~ of Net sales. We anticipate that international shipments will account for a significant portion of our sales for the foreseeable future. There are a number of risks associated with international business activities, including: • burdens to comply with multiple and potentially conflicting foreign laws and regulations, including export requirements, tariffs and other barriers, environmental health and safety requirements, increasingly complex requirements concerning privacy and data security, including the European Union' s General Data Protection Regulation, and unexpected changes in any of these factors; • difficulty in obtaining export licenses from the U. S. Government; • political and economic instability and disruptions, including terrorist attacks; • disadvantages of competing against companies from countries that are not subject to U. S. laws and regulations, including the Foreign Corrupt Practices Act (FCPA); • potentially adverse tax consequences due to overlapping or differing tax structures; • fluctuations in currency exchange rates; and • disruptions in our business or the businesses of our suppliers or customers due to cyber security incidents, public health concerns (including viral outbreaks, such as COVID- 19), **war or** ~~the~~ **other hostilities,** ~~ongoing conflict between Russia and Ukraine~~ or natural disasters. Any of these risks could have an adverse effect on our international operations by reducing the demand for our products or reducing the prices at which we can sell our products, which could result in an adverse effect on our business, financial position, results of operations, or cash flows. We may hedge our currency transactions to mitigate the impact of currency price volatility on our earnings; however, hedging activities may not be successful. For example, hedging activities may not cover the Company' s net euro and yen exposure, which could have an unfavorable impact on our results of operations. In addition, we could be adversely affected by violations of the FCPA and similar worldwide anti- bribery laws. The FCPA and similar anti- bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to non- U. S. officials for the purpose of obtaining or retaining business. While policies mandate compliance with these anti- bribery laws, we operate in many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti- bribery laws may conflict with local customs and practices. We cannot assure that our internal controls and procedures will always protect us from the reckless or criminal acts committed by our employees or agents. If we are found to be liable for FCPA violations or other anti- bribery laws, we could suffer from criminal or civil penalties or other sanctions, which could have a material adverse effect on our business. Changes in laws or regulations or the manner of their interpretation or enforcement could adversely impact our financial performance and restrict our ability to operate our business or execute our strategies. New laws or regulations, or changes in existing laws or regulations, or the manner of their interpretation or enforcement, could increase our cost of doing business and restrict our ability to operate our business or execute our strategies. In particular, there may be significant changes in U. S. laws and regulations and international trade agreements that could affect a wide variety of industries and businesses, including those businesses we own and operate. We may be exposed to certain regulatory and financial risks related to climate change. Growing concerns about climate change may result in the imposition of additional regulations or restrictions to which we may become subject. A number of governments or governmental bodies have introduced or are contemplating regulatory changes in response to climate change, including regulating greenhouse gas emissions. The outcome of new legislation or regulation in the U. S. and other jurisdictions in which we operate may result in new or additional requirements, additional charges to fund energy efficiency activities, and fees or restrictions on certain activities. Compliance with these climate change initiatives may also result in additional costs to us, including, among other things, increased production costs, additional taxes, reduced emission allowances or additional restrictions on production or operations. Any adopted future climate change regulations could also negatively impact our ability to compete with companies situated in areas not subject to such limitations. Even without such regulation, increased public awareness and adverse publicity about potential impacts on climate change emanating from us or our industry could harm us. We may not be able to recover the cost of compliance with new or more stringent laws and regulations, which could adversely affect our results of operations, financial position or cash flows. We are exposed to lawsuits in the normal course of business, which could harm our business. During the ordinary conduct of our business, we may become involved in certain legal proceedings, including those involving product liability claims, third- party lawsuits relating to exposure to beryllium, claims against us of infringement of intellectual property rights of third parties, or other litigation matters. Due to the uncertainties of litigation, we can give no assurance that we will prevail in the resolution of future claims. Certain of these matters involve types of claims that, if they result in an adverse ruling to us, could give rise to substantial liability, which could have a material adverse effect on our business, operating results, or financial condition. Although we have insurance which may be applicable in certain circumstances, some jurisdictions preclude insurance coverage for punitive damage awards. Accordingly, our profitability could be adversely affected if any current or future claimants obtain judgments for any uninsured compensatory or punitive damages. Further, an unfavorable outcome or settlement of a pending beryllium case or adverse media coverage could encourage the commencement of additional similar litigation. Health issues, litigation, and government regulations relating to our beryllium operations could significantly reduce demand for our products, limit our ability to operate, and adversely affect our profitability. If exposed to respirable beryllium fumes, dusts, or powder, some individuals may demonstrate an allergic reaction and may later develop a chronic lung disease known as chronic beryllium disease (CBD). Severe cases of CBD can cause disability or death. Further, some scientists claim there is evidence of an association between beryllium exposure and lung cancer, and certain standard- setting organizations have classified beryllium and beryllium compounds as human carcinogens. The health risks relating to exposure to beryllium have been, and will continue to be, a significant issue confronting the beryllium- containing products industry. The health risks associated with beryllium have resulted in product liability claims, employee, and third- party lawsuits. ~~As of December 31, 2022, we had one CBD case outstanding.~~ The increased levels of scrutiny by federal, state, foreign, and international regulatory authorities could lead to regulatory decisions relating to the approval or prohibition of the use of beryllium- containing materials for various uses. Concerns over CBD and other potential adverse health effects relating to beryllium, as well as concerns regarding potential liability from the use of beryllium, may discourage our customers' use of our beryllium- containing products and significantly reduce demand for our products. In addition, adverse media coverage relating to our beryllium- containing products could damage our reputation or cause a decrease in demand for beryllium- containing products, which could adversely affect our profitability. Additionally we, as well as our customers, are subject to laws regulating worker exposure to beryllium. **In 2018** ~~OSHA~~ - **OHSA issued** ~~has published~~ a ~~new~~ **final** standard for workplace exposure to beryllium ~~that, among other things, lowered the permissible exposure by a factor of ten and established new requirements for respiratory protection, personal protective clothing and equipment, medical surveillance, hazard communication, and recordkeeping~~ . Materion was a participant in the development of the ~~new~~ standards, which fundamentally represent our current health and safety operating practices. Other government and standard- setting organizations are also reviewing beryllium- related worker safety rules and standards, and will likely make them more stringent. The development, proposal, or adoption of more stringent standards may affect buying decisions by the users of beryllium- containing products. If the standards are made more stringent and / or our customers or other downstream users decide to reduce their use of beryllium- containing products, our results of operations, liquidity, and financial condition could be materially adversely affected. The impact of this potential adverse effect would depend on the nature and extent of the changes to the standards, the cost and ability to meet the new standards, the extent of any reduction in customer use, and other factors. The magnitude of this potential adverse effect cannot be estimated. Our bertrandite ore mining and manufacturing operations are subject to extensive environmental regulations that impose, and will continue to impose, significant costs and liabilities on us, and future regulation could increase these costs and liabilities or prevent production of beryllium- containing products. We are subject to a variety of governmental regulations relating to the environment, including those relating to our handling of hazardous materials and air and wastewater emissions. Some environmental laws impose substantial penalties for non- compliance. Others, such as the federal Comprehensive Environmental Response, Compensation, and Liability Act, impose strict, retroactive, and joint and several liability upon entities responsible for releases of hazardous substances. Bertrandite ore mining is also subject to extensive governmental regulation on matters such as permitting and licensing requirements, plant and wildlife protection, reclamation and restoration of mining properties, the discharge of materials into the environment, and the effects that mining has on groundwater quality and availability. Future requirements could impose on us significant additional costs or obligations with respect to our extraction, milling, and processing of ore. If we fail to comply with present and future environmental laws and regulations, we could be subject to liabilities or our operations could be interrupted. In addition, future environmental laws and regulations could restrict our ability to expand our facilities or extract our bertrandite ore deposits. These environmental laws and regulations could also require us to acquire costly equipment, obtain additional financial assurance, or incur other significant expenses in connection with our business, which would increase our costs of production. Expectations relating to environmental, social and governance considerations expose us to potential liabilities, increased costs and other adverse effects on our business. Many governments, regulators, investors, employees, customers and other stakeholders are increasingly focused on environmental, social and governance considerations relating to businesses, including climate change and greenhouse gas emissions, human capital and diversity, equity and inclusion. The Company is committed to ensuring that our organization' s governance and operations are fully aligned with environmentally and socially responsible practices. We make statements about our environmental, social and governance goals and initiatives through information provided on our website and other communications. Responding to these environmental, social and governance considerations and implementation of these goals and initiatives involves risks and uncertainties, requires investments, which could be material, and are impacted by factors that may be outside our control. In addition, some stakeholders may disagree with our goals and initiatives and the focus of stakeholders may change and evolve over time. Stakeholders also may have very different views on where environmental, social and governance focus should be placed, including differing views of regulators in various jurisdictions in which we operate. Any failure, or perceived failure, by us to achieve our goals, further our initiatives, adhere to our public statements, comply with federal, state or international environmental, social and governance laws and regulations, or meet evolving and varied stakeholder expectations and standards could result in legal and regulatory proceedings against us and materially adversely affect our business, reputation, results of operations, financial condition and stock price. Risks Related to Our Debt A major portion of our bank debt consists of variable-rate obligations, which subjects us to interest rate fluctuations. Our credit facilities are secured by substantially all of our assets (other than non- mining real property and certain other assets). Our working capital line of credit includes variable- rate obligations, which expose us to interest rate risks. If interest rates increase, our debt service obligations on our variable- rate indebtedness would increase even if the amount borrowed remained the same, resulting in a decrease in our net income. Additional information regarding our market risks is contained in Item 7A" Quantitative and Qualitative Disclosures About Market Risk." Our failure to comply with the covenants contained in the terms of our indebtedness could result in an event of default, which could materially and adversely affect our operating results and our financial condition. **Additionally, restrictive covenants contained in our indebtedness may restrict our operations, including our ability to pursue our growth and acquisition strategies.** The terms of our credit facilities require us to comply with various covenants, including financial covenants. A global economic downturn could have a material adverse impact on our earnings and cash flow, which could adversely affect our ability to comply with our financial covenants and could limit our borrowing capacity. Our ability to comply with these covenants depends, in part, on factors over which we may have no control. A breach of any of these covenants could result in an event of default under one or more of the agreements governing our indebtedness which, if not cured or waived, could give the holders of the defaulted indebtedness the right to terminate commitments to lend and cause all amounts outstanding with respect to the indebtedness to be due and payable immediately. Acceleration of any of our indebtedness could result in cross- defaults under our other debt instruments. Our assets and cash flow may be insufficient to fully repay borrowings under all of our outstanding debt instruments if some or all of these instruments are accelerated upon an event of default, in which case we may be required to seek legal protection from our creditors. ~~The~~ **Additionally, the** terms ~~and amount~~ of **the agreements governing** our indebtedness ~~may restrict our operations, including our ability to pursue our growth and acquisition strategies. The terms of our credit facilities~~ contain a number of restrictive covenants, including restrictions in our ability to, among other things, borrow and make investments, acquire other businesses, and consign additional precious metals. These covenants could adversely affect our business by limiting our ability to plan for or react to market conditions or to meet our capital needs, as well as adversely affect our ability to pursue our growth and acquisition strategies, and other strategic initiatives. Adverse business conditions could impact our ability to generate cash and service our indebtedness. Our ability to pay interest on our debt and to satisfy our other debt obligations depends in part upon our future financial and operating performance and that of our subsidiaries, and upon our ability to renew or refinance borrowings. Prevailing economic conditions and financial, business, competitive, legislative, regulatory and other factors, many of which are beyond our control, affect our ability to make these payments. While we believe that cash flow from our current level of operations, available cash and available borrowings under our revolving credit facility provide adequate sources of liquidity, a significant drop in operating cash flow resulting from economic conditions, competition or other uncertainties beyond our control could create the need for alternative sources of liquidity. If we are unable to generate sufficient cash flow to meet our debt service obligations, we will have to pursue one or more alternatives, such as reducing or delaying capital or other expenditures, refinancing debt, selling assets, or raising equity capital. Risks Related to the Execution of Our Strategy We may not be able to complete our acquisition strategy or successfully integrate acquired businesses. We are active in pursuing acquisitions. We intend to continue to consider further growth opportunities through the acquisition of assets or companies and routinely review acquisition opportunities. We cannot predict whether we will be successful in pursuing any acquisition opportunities or whether we will be able to achieve the strategic and other objectives related to any acquisitions, including ~~our recent acquisition of HCS- Electronic Materials, including~~ the achievement of any expected synergies. Future acquisitions may involve the expenditure of significant funds and management time. Depending upon the nature, size, and timing of future acquisitions, we may be required to raise additional financing, which may not be available to us on acceptable terms, or at all. Further, we may not be able to successfully integrate any acquired business with our existing businesses or recognize any expected advantages from any completed acquisition. In addition, there may be liabilities that we fail, or are unable, to discover in the course of performing due diligence investigations on the assets or companies we have already acquired or may acquire in the future. We cannot assure that rights to indemnification by the sellers of these assets or companies to us, even if obtained, or applicable representation and warranty insurance, will be enforceable, collectible, or sufficient in amount, scope, or duration to fully offset the possible liabilities associated with the business or property acquired. Any such liabilities, individually or in the aggregate, could have a materially adverse effect on our business, financial condition, and results of operations. Our products are deployed in complex applications and may have errors or defects that we find only after deployment. Our products are highly complex, designed to be deployed in complicated applications, and may contain undetected defects, errors, or failures. Although our products are generally tested during manufacturing, prior to deployment, they can only be fully tested when deployed in specific applications. For example, we sell beryllium- copper alloy strip products in a coil form to some customers, who then stamp the alloy for its specific purpose. On occasion, it is not until such customer stamps the alloy that a defect in the alloy is detected. Consequently, our customers may discover errors after the products have been deployed. The occurrence of any defects, errors, or failures could result in installation delays, product returns, termination of contracts with our customers, diversion of our resources, increased service and warranty costs, and other losses to our customers, end users, or to us. Any of these occurrences could also result in the loss of, or delay in, market acceptance of our products, and could damage our reputation, which could reduce our sales. In addition to the risk of unanticipated warranty or recall expenses, our customer contracts may contain provisions that could cause us to incur penalties, be liable for damages, including liquidated damages, or incur other expenses, if we experience difficulties with respect to the functionality, deployment, operation, and availability of our products and services. In the event of late deliveries, late or improper installations or operations, failure to meet product or performance specifications or other product defects, or interruptions or delays in our managed service offerings, our customer contracts may expose us to penalties, liquidated damages, and other liabilities. In the event we were to incur contractual penalties, such as liquidated damages or other related costs that exceed our expectations, our business, financial condition, and operating results could be materially and adversely affected.