

# SUSTAINABILITY REPORT 2017/18

**KRONOS<sup>®</sup>**



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## A MESSAGE FROM OUR COO



The last few years at KRONOS have marked a sea change for the company. In 2016, we celebrated our centenary, an occasion to honor our Company's proud history while

also ushering in a new era for KRONOS. We have been evolving rapidly through a series of major initiatives, which at their core, rest on the bedrock of ONE KRONOS. ONE KRONOS is our vision—and our mission—to be our customers' first choice for a brighter and more colorful life.

ONE KRONOS focuses on fostering broader and deeper communication throughout our global organization and with our stakeholders. We leverage the talent, expertise, and innovative spirit of our people and teams, regardless of where they sit, with a focus on sharing best practices, standardizing key management systems, and driving performance improvement in every aspect of our operations. Major initiatives include implementation of a global enterprise resource planning system and upgrades to manufacturing, demand planning, and logistics—all of which have had positive impacts on sustainability.

We recognize the importance of sustainability in manufacturing and enhanced transparency with respect to our environmental, social, and governance (ESG) strategy. Sustainable business practices are essential elements of our future success. To ensure we are building these principles into our new systems and initiatives, we have identified sustainability performance as a core business goal.

We set specific strategic and operational objectives to ensure continued improvement of our safety, environmental, energy, and quality performance. In the second half of 2018, senior leaders from all functional areas joined to create KRONOS' Functional Leadership Team (FLT).

The FLT developed six global strategic goals and objectives designed to lead us to realization of our ONE KRONOS mission. Robust and diverse key performance indicators support these goals. Sustainability is the subject of one of these six goals; others include safety and employee satisfaction, which also align with our ESG strategy. Through these evolved teams and goals, we hope to drive integration of sustainability principles deeper into all of our activities so they become second nature in our decision-making and in the everyday performance of our jobs.

I am particularly proud to introduce KRONOS' grassroots, employee-led model for corporate philanthropy, KRONOS Cares. This approach enhances a consistent, global approach to KRONOS' social investment, while empowering all KRONOS employees and locations to tailor their individual commitments to meet specific local needs, and engage directly within the communities where we live and work.

This report highlights some of the exciting results of our hard work. Looking ahead, KRONOS will continue to identify and integrate ESG best practices throughout our business, from the boardroom to the factory floor. We will work with stakeholders across our value chain—including key suppliers and customers—to minimize negative environmental and social impacts resulting from our operating activities, and to enhance sustainability for all aspects of our operations.

Jim Buch  
Chief Operating Officer

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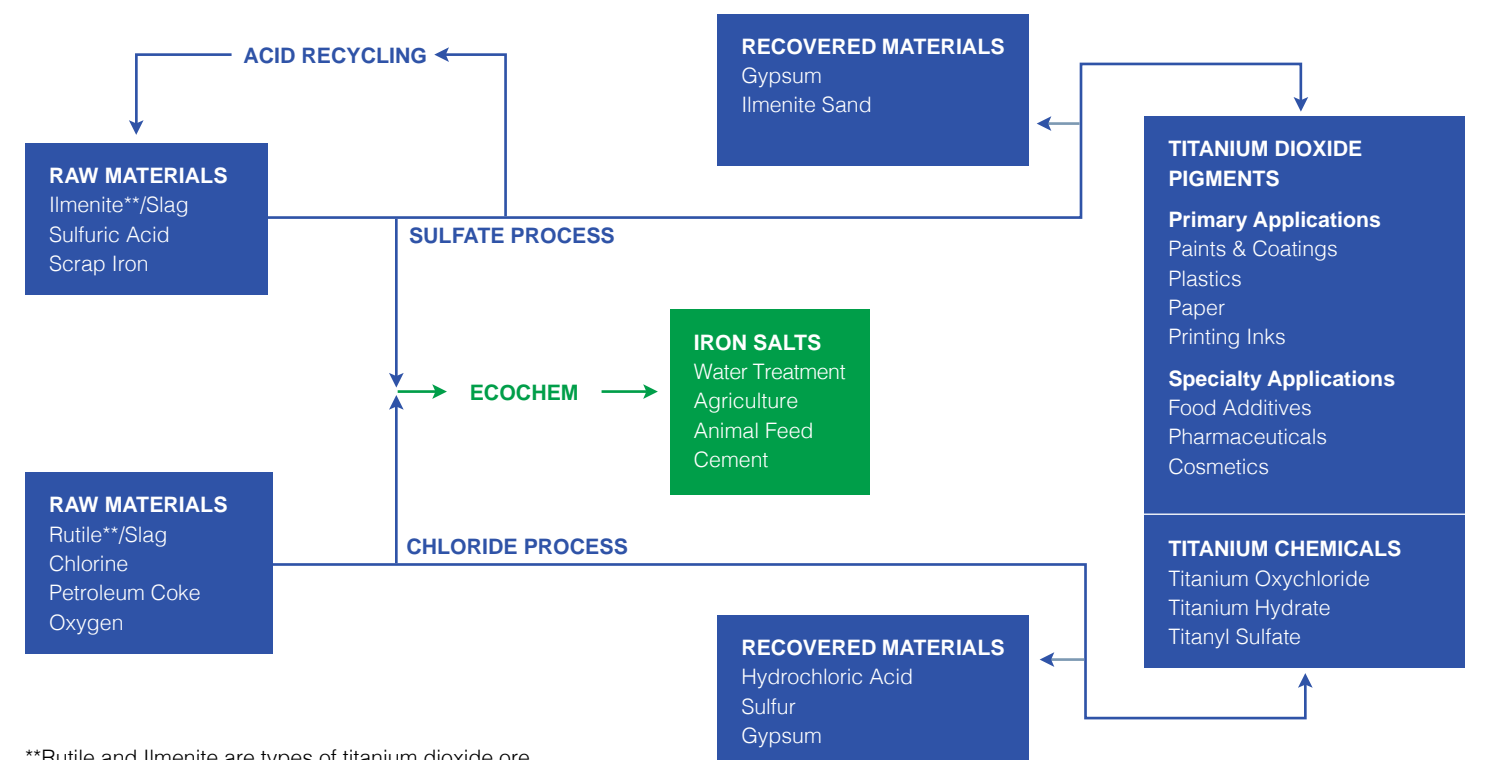
# ABOUT KRONOS

KRONOS Worldwide, Inc. (NYSE: KRO) is a leading global producer of titanium dioxide, a white pigment used in a variety of applications to impart opacity, whiteness, brightness, and durability. Titanium dioxide is utilized in a wide array of products—from paint and coatings, to plastics, paper, and sunscreen. For over 100 years, we have been producing and marketing titanium dioxide for use in products around the world. KRONOS has markets in more than 100 countries, with the majority of sales in Europe, North America, and Asia Pacific.



Because of its high refractive rating, UV resistance, and inertness, titanium dioxide imparts superior brightness and opacity while maintaining durability and resistance to degradation from sunlight and chemicals. Our titanium dioxide is a critical component of paints, coatings, plastics, and paper. Other applications include inks, textiles, cosmetics, and food products. KRONOS manufactures rutile and anatase titanium dioxide through the chloride and sulfate production processes, and we offer over 40 different pigment grades to meet customer needs. KRONOS also markets co-products of titanium dioxide production, such as iron-based chemicals used for a variety of environmentally friendly applications, and titanium dioxide photocatalysts, used in building materials to clean the air. For more information on our products and operations, visit [our website](#).

## KRONOS Value Chain



\*\*Rutile and Ilmenite are types of titanium dioxide ore.

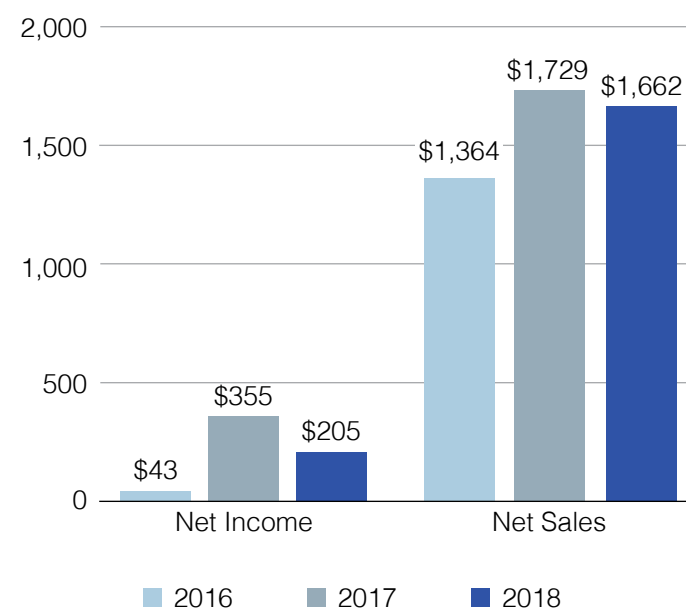




Our strategy focuses on stability, strength, and growth by ensuring sound financial and production management, and high quality and innovative products. To accomplish this goal, KRONOS provides exceptional customer service, accessible titanium dioxide experts, and continuous quality assurance.

Our focus on these areas will generate lasting value for our customers and stakeholders as we move forward. To support the achievement of these goals, we have developed ONE KRONOS, an overarching philosophy for our company that promotes a culture of communication, teamwork, and leadership. This alignment across our global organization establishes unity and collaboration as a foundation for the sharing of best practices as we execute our strategy.

**Financial Metrics (in Millions)**



## ONE KRONOS

ONE KRONOS is a set of guiding principles that enable us to be more effective and aligned as ONE company. ONE KRONOS is about promoting constructive communication and teamwork to support our strategic goals and objectives. ONE KRONOS began in 2016, evolving from our KRONOS 2020 initiative. KRONOS 2020 focused on driving profitability, innovation, and long-term growth. Now, through ONE KRONOS, we have added to our focus collaboration, integration, and unity across our global business. ONE KRONOS encourages and promotes communication and collaboration companywide, resulting in a global team that works together as ONE to achieve our goals.

Our ONE KRONOS vision demands that:

- We are fully aligned with and connected to our mission/vision;
- We value and respect the knowledge, skills, and diversity of our people;
- We are committed to the well-being of our people;
- Our employees own and drive our global business processes;
- We are one strong brand for our customers, employees, and communities; and
- We act as a responsible corporate citizen.

Implementing ONE KRONOS, we incorporate robust management processes that drive continuous improvement, deliver profitability every day with a long-term view, provide products and services to our customers that ensure mutual success, and work with the right partners and opportunities to grow and improve our business. Through input and feedback from all areas of our organization, we ensure that our core principles continue to align with all aspects of our business needs. Through environmental stewardship, engagement in community relations, and a focus on our ONE KRONOS culture, we are driving efficiency and engagement, and pursuing our mission to be our customer's first choice for a brighter, more colorful life.



One of the key elements of ONE KRONOS requires that we conduct ourselves as responsible corporate citizens. We implement corporate social responsibility (CSR) and sustainability programs that support the building of our brand and increase positive brand awareness. Our ONE KRONOS initiative drives the standardization of the KRONOS image and service experience globally, which will further enhance our long-term sustainability.







## IMPLEMENTATION OF SAP HANA

Timely and transparent communication of accurate, specific, and concise information is critically important to the success of ONE KRONOS and to the creation of a truly united global operation. Historically, KRONOS maintained several legacy enterprise resource planning (ERP) systems, resulting in unnecessary complexity, information silos, inflexibility, and hampered organizational level communication and collaboration.

To achieve the vision and mission of ONE KRONOS, we knew we had to make a significant change. Enter SAP HANA—a single, consolidated ERP system designed to manage Big Data and provide real-time analytic capabilities. SAP HANA is also easily scalable, so it will grow with us, and is one of the most versatile ERP solutions available. Transitioning to SAP HANA was a major undertaking and required careful planning, organization, and implementation across all KRONOS departments and locations to ensure business continuity.

The implementation of SAP HANA has resulted in a more robust, resilient, and sustainable KRONOS. Our new ERP system has enabled us to consolidate multiple business processes across diverse geographies, increasing productivity, standardizing the user experience, and delivering a single version of truth, which allows the enterprise to make better decisions faster. While there was a learning curve with the new system, phased implementation has facilitated user adoption and accelerated resumption of day-to-day tasks, thereby easing the transition.

## The implementation of SAP HANA has resulted in a more robust, resilient, and sustainable KRONOS.

With implementation of SAP HANA, we are optimizing our production schedules and resource utilization across all facilities. These new data capabilities have allowed KRONOS to focus on the output we provide to our customers and drive business value. Our customers benefit from optimized demand planning (the right products at the right time) and logistics (on-time delivery). Now that we can access and manage data enterprise-wide, KRONOS is better able to deliver products to customers within the optimal timeframe. These enhancements will further KRONOS' ESG strategy and positively impact our sustainability by driving efficiencies in workforce utilization, raw material and energy consumption, production yield, logistics, and waste reduction.

Three primary SAP HANA modules drive efficiencies: Material Resource Planning (MRP) optimizes inventory volumes and allows for automatic creation of purchase requests; Available to Promise (ATP) allocates materials to orders and automatically plans shipments; and Predictive Maintenance assesses conditions of in-service equipment to estimate the timing of maintenance, increase plant uptime, and optimize work during downtime. Together, these three modules have streamlined our operations and illustrated the key role of sustainability in driving business value.





# SUSTAINABILITY STRATEGY & GOVERNANCE

KRONOS' global operating strategy stands on six pillars: Safety, Employee Satisfaction, Sustainability, Customer Satisfaction, Quality, and Financial Performance. Each of these pillars is integral to long-term value creation and realizing our vision for success.

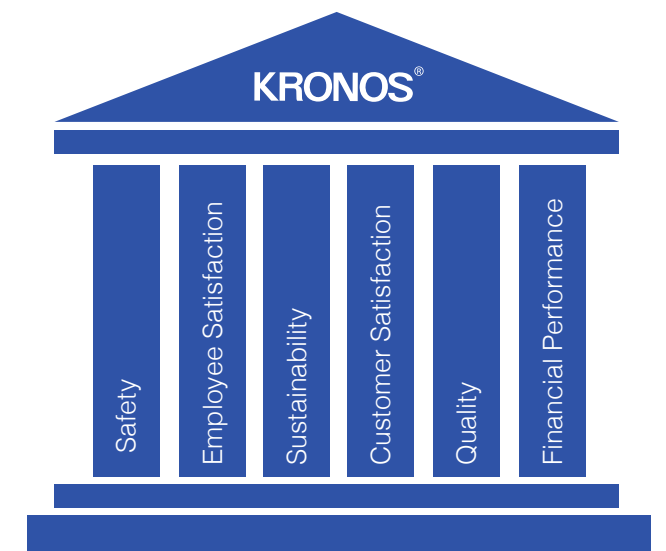
## SUSTAINABILITY STRATEGY

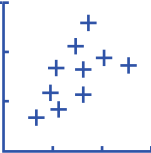
We believe sustainability means operating with the highest standards of environmental and social responsibility; encompassing exemplary ethical standards; focusing on safety as a top priority; respecting and supporting our local communities; and continuously developing our employees. While a synergy exists between the pillars of overall strategy, sustainability integrates each strategy area in a way that ensures a coherent whole that is much greater than the sum of its parts. As we progress on our sustainability journey, we are committed to further integrating each of these factors into our global business and all parts of our value chain to propel our success and differentiate us from our competitors.

We have identified five key focus areas within the sustainability pillar, including:

- Health and safety
- Environmental, social and governance (ESG) reporting
- Environmental stewardship
- Sustainable product innovation
- Talent development

These focus areas align with the delivery of our overall strategy and our ONE KRONOS vision. We focus on continuous improvement in these areas to drive the long-term success of our business. We designed ONE KRONOS to encourage and promote clear and effective communication and teamwork across the business, as we work together as ONE to achieve our goals.





Oversight of sustainability at KRONOS rests with our executive leaders, who receive regular updates from management on each of our five focus areas. KRONOS' Functional Leadership Team, led by our Chief Operating Officer, implements KRONOS' strategy which includes goals related to reductions in energy consumption, continued enhancement of our strong safety culture, and zero releases to the environment. The Functional Leadership Team meets monthly to review progress toward our goals, including sustainability; the Team then periodically shares that progress with the Board of Directors.

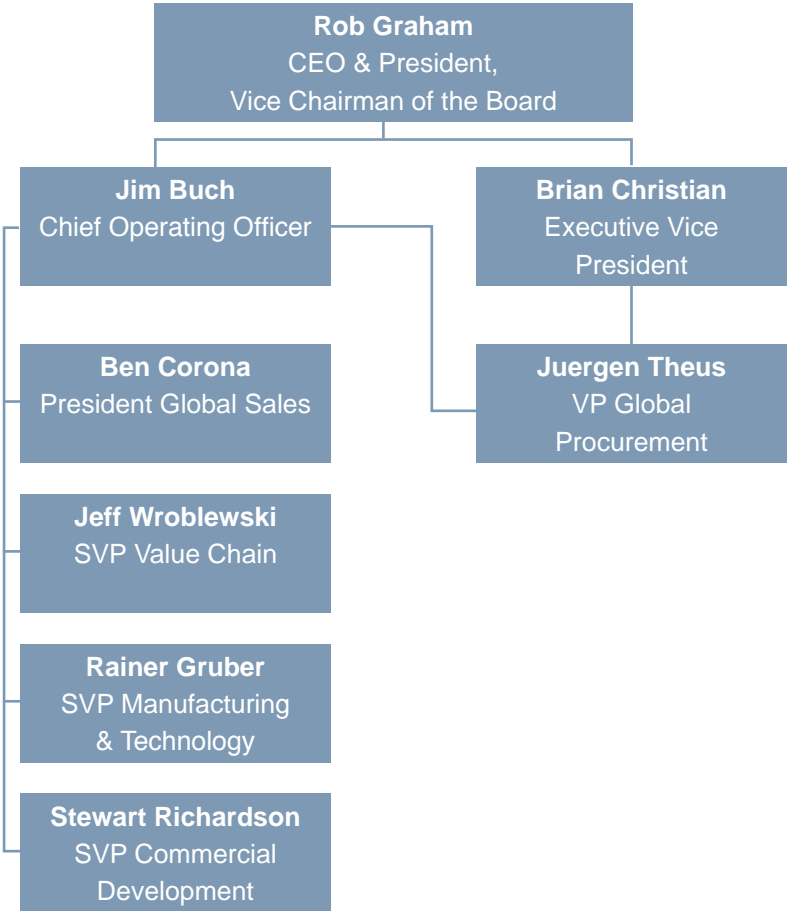
Operational leaders and the Global EHS Team work with individual production facilities to develop enterprise-wide programs that address ESG opportunities and risks and to share best practices across the global business. Local teams at each of our facilities tailor these programs to meet site-specific needs and implement them on the ground via local management systems.

By leveraging all of these contributions, we continue to develop a culture of compliance and sustainability throughout our business that enables us to meet our objectives and be ONE KRONOS.

Corporate Leadership

<b>Kelly Luttmer</b> EVP & Chief Tax Officer
<b>Andrew Nace</b> EVP
<b>Jim Brown</b> SVP & Chief Financial Officer
<b>Clarence Brown</b> VP General Counsel & Secretary
<b>Tim Hefer</b> SVP & Controller
<b>Janet Keckeisen</b> VP Strategy & Investor Relations
<b>Patty Kropp</b> VP Global Human Resources
<b>Courtney Riley</b> VP Environmental Affairs
<b>John Sunny</b> VP & Chief Information Officer
<b>Bryan Hanley</b> VP & Treasurer
<b>Mike Simmons</b> VP Finance
<b>Steve Eaton</b> VP Internal Control

Operating Leadership



# MATERIALITY ASSESSMENT

As a leading global producer of value-added titanium dioxide, KRONOS sells products to thousands of customers in over 100 countries and interacts with stakeholders around the globe. We therefore refreshed our ESG materiality assessment to ensure our ongoing sustainability efforts and associated reporting remain relevant to these stakeholders. Such an assessment provides a systematic and evidence-based approach to identifying ESG topics with the most significance to our business and our stakeholders. The assessment enables KRONOS to focus reporting and strategy on the areas identified as those of greatest importance to our long-term success.

# STAKEHOLDER GROUPS

Stakeholders throughout our value chain continuously influence our business operations, and the same is true of our impact on them. KRONOS engaged with a number of groups as part of this materiality assessment to better understand the relationship between us and our stakeholders. We worked with key internal representatives to identify critical stakeholders with the greatest impact. We engaged with the groups identified below to develop an understanding of the various ESG topics they consider material to KRONOS’ sustainability.



## Stakeholder Engagement Activities by Stakeholder Group

Group	Engagement Activity
Peers	Benchmarking
Industry Groups	Benchmarking
Sustainability Ratings & Rankings Firms	ESG Report Review
Customers	Interviews
Investors	ESG Report Review
Executive Management	Interviews
Internal Stakeholders	Interviews

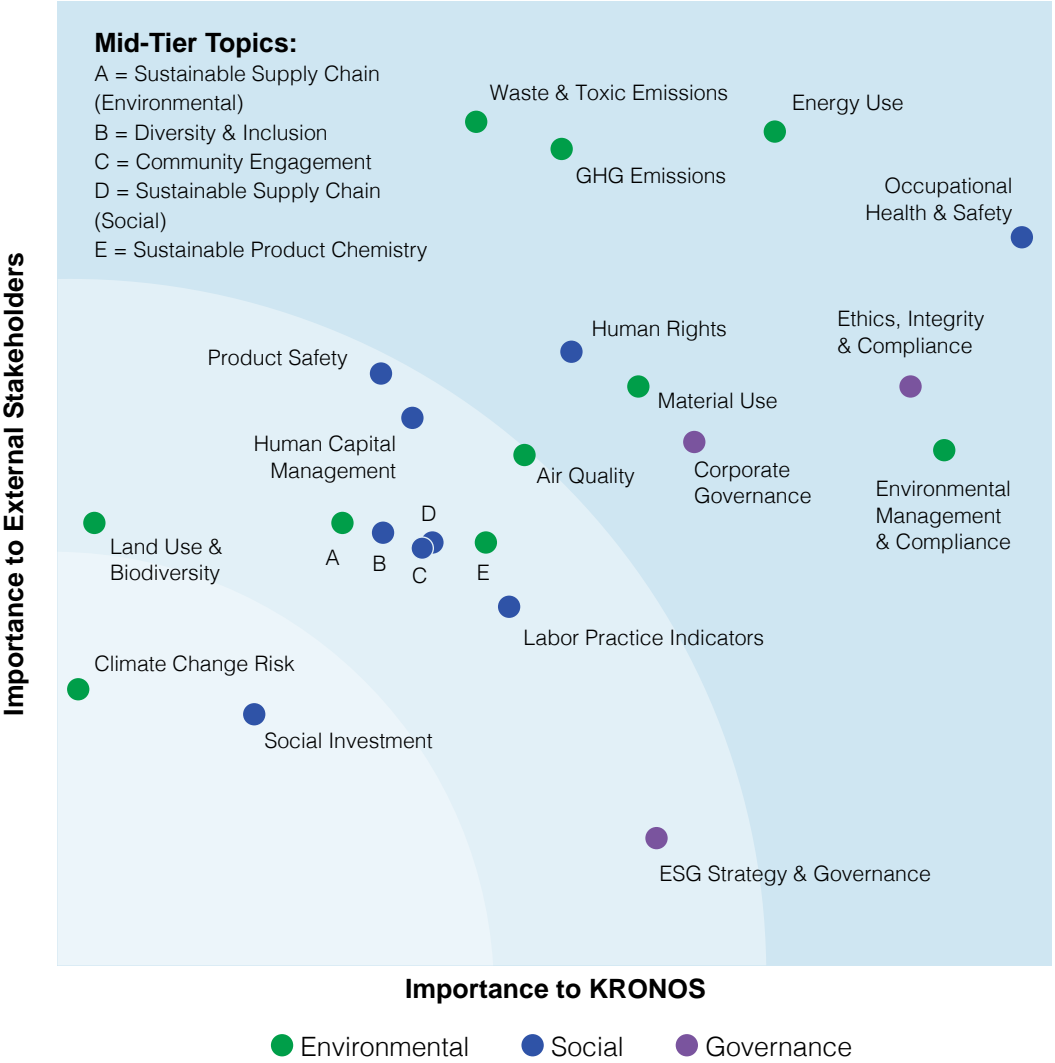
# ENGAGEMENT PROCESS

We leveraged the data generated from our initial research to develop a list of relevant issues for use in our stakeholder engagement process. Our initial review of a range of ESG reporting frameworks, investor reports, and rating and rankings reports provided us with the investor perspective. With support from a third party consultancy, we interviewed a diverse group of internal and external stakeholders, asking participants about the preliminary issue list from multiple angles: greatest risks and opportunities, emerging issues and external pressures.

Following engagement with our key stakeholders, we analyzed the data to identify KRONOS’ material ESG topics. Each stakeholder was scored based on the relative importance placed on topics, weighting each stakeholder accordingly. Our analysis resulted in a draft list of proposed material issues, vetted by members of our executive team, refining topics where appropriate. The results guided development and content of the sustainability report.

# MATERIALITY MATRIX

We focus on the topics in the right top corner of the matrix in this report; however, additional topics warrant disclosure in reporting or active management and are therefore also included, but are of lower priority in relation to stakeholder expectations and business impact. For example, climate change is of obvious importance to KRONOS, but we are currently focused on reductions in energy use and greenhouse gas emissions to minimize our contribution to climate change risk.



### Material Topics

- Corporate Governance
- Ethics, Integrity & Compliance
- Supply Chain

- Environmental Management
- Energy Use

- GHG Emissions
- Material Use & Waste Management

- Occupational Health & Safety
- Human Rights

- Social Investment & Community Engagement
- Employee Relations



# ENVIRONMENTAL

An aerial photograph of a massive open-pit mine carved into a mountain range. The mine's terraced levels and winding access roads are clearly visible, snaking through the dark, rocky landscape. A river flows through the lower part of the valley, its surface reflecting the sky. The surrounding mountains are covered in dense green vegetation, contrasting sharply with the industrial excavation. A white grid is superimposed on the image, with the word 'ENVIRONMENTAL' in large, bold, white capital letters in the upper right corner.





## MANAGEMENT APPROACH

# ENVIRONMENTAL MANAGEMENT

At KRONOS, environmental protection is a primary focus area. We utilize titanium ores, process chemicals, and energy to produce and market value-added titanium dioxide products. We strive to manage our environmental footprint wisely. KRONOS has robust and effective management systems in place underpinning our compliance with applicable laws. We endeavor to minimize the negative environmental impacts of our business operations. These systems cover all of our material environmental topics.

Executive management of environment is the responsibility of our Vice President of Environmental Affairs, who reports directly to our CEO. The Vice President of Environmental Affairs also participates on the Functional Leadership Team (FLT), led by our Chief Operating Officer, and reports to the team monthly regarding internal environmental performance goals and Key Performance Indicators (KPIs).

The corporate Environmental Affairs team is responsible for setting global standards and providing expert support to the business. Our operational leaders, along with their local Environment, Health, and Safety (EHS) teams, are responsible for implementing environmental management at each of our locations. These EHS teams have experience with national and local legal requirements applicable to their respective site operations.

KRONOS' CEO has issued a Sustainability, Environment, Energy, and Quality (SEEQ) Policy applicable globally to all aspects of our business. The SEEQ Policy is made available to employees in their local language and is endorsed by plant leadership. The policy is a constant reminder of our core values in these areas.

The SEEQ Policy and our Corporate Guidelines outline expectations and requirements that apply at all of our sites. We build on our corporate guidelines to create site-specific environmental management systems that align with ISO 14001 and Responsible Care®, and meet each facility's needs to maintain compliance with local laws and regulations. Four of our five operational sites hold ISO 14001 certifications, while the other is certified to the Responsible Care standard. Some of our European facilities are also subject to the SEVESO II Directive, which provides an additional layer of regulatory requirements in the areas of environmental protection, safety, and process safety.



These systems utilize internal and external audit processes that meet ISO 14001 or Responsible Care requirements and ensure adherence to KRONOS standards, applicable laws, and SEVESO standards. We have also implemented rigorous procedures for incident reporting and investigation that enable us to determine the root cause of environmental incidents and near misses, and to put appropriate corrective actions into effect.

KRONOS' global environmental team, comprised of the corporate Environmental Affairs team, Global Environmental and Safety Managers, operations management, and local EHS managers and professionals, collaborate to share best practices and lessons learned across the business. Whether related to process issues, operating procedures and instructions, or equipment maintenance, ongoing communication between and among facility operational leadership and corporate leadership is essential to our success.



# ENERGY USE

Production of titanium dioxide is known to be an energy-intensive process, in even the most efficient plants. KRONOS' energy consumption impacts our production costs and greenhouse gas (GHG) emissions. KRONOS recognizes the importance of efficient use of natural and non-renewable resources and we have made significant improvements to our use and consumption of energy in recent years. Existing commitments and goals related to energy reduction have been refreshed through development of ONE KRONOS. Performance against these goals is routinely evaluated by both operational management and the FLT.

Our Canadian and Norwegian production facilities are sourced with electricity from local power grids, each of which is comprised of nearly 100 percent renewable energy, primarily hydropower. In recent years, KRONOS has made major improvements in our use and

consumption of energy. Debottlenecking efforts have enabled us to increase production without significant equipment upgrades at our facilities, thereby increasing the efficiency of our operations across the company. Combined heat and power, or cogeneration plants, installed at our Langerbrugge and Nordenham facilities, generate steam through combustion of natural gas, which drives generation of clean electricity. Our largest production facility is situated in one of Europe's largest chemical industrial parks, located in Leverkusen, Germany. There we work with other park tenants to reduce energy consumption by sharing best practices and committing to company-specific reduction targets for our share of energy consumed. In addition to implementing improvement projects, we have also performed energy audits and implemented ISO 50001 compliant energy management systems at three of our locations.

# SWIRL FLUIDIZER

KRONOS manages energy use and the efficiency of our processes as a means to reduce operating costs and our environmental footprint. Our energy team works on energy efficiency projects throughout the Company. KRONOS implemented successful energy saving projects in 2017 and 2018, including replacement of several pumps with newer, more efficient models in several of our facilities.

After much planning in 2017 and 2018, we recently installed new pigment drying technology at our Fredrikstad, Norway facility, replacing an existing belt dryer with "swirl fluidizer" dryer technology. The new dryer establishes a fluidized bed in the drying chamber, creating highly efficient contact between hot air and filtered cake. Project implementation will result in several benefits, including reduced risk of production loss due to equipment downtime, reduced annual energy consumption, and reduced annual maintenance costs. KRONOS implemented several successful energy saving projects in 2017 and 2018, including replacement of certain pumps with newer more efficient models in several of our facilities.



# CARBON FOOTPRINT

While energy demand is closely linked to production costs, it also contributes significantly to greenhouse gas emissions. KRONOS is committed to raising the bar within the industry and was a significant contributor in developing new standards within the Titanium Dioxide Manufacturers Association (TDMA) to measure greenhouse gas emissions and the environmental footprint of our industry. TDMA recently updated the Life Cycle Inventory (LCI) data originally published in 2014 (reference year 2012). Availability of the new LCI data (reference year 2016) will be announced soon by TDMA on behalf of all member companies. This information can be used by our customers to calculate the emissions of their end products. The current baseline (reference year 2012) industry average is 5.3 metric tons of carbon dioxide for every metric ton of titanium dioxide manufactured. The TDMA, with KRONOS' participation, continues to enhance data in this area. Release of the updated industry average LCI data will include carbon footprint, as well as other environmental metrics based on a much broader collection of data from not only KRONOS and other members, but also upstream suppliers.





# Logistics Optimization—Fewer Touches Equals Lower GHG Emissions

In 2017 and 2018, KRONOS implemented initiatives designed to optimize all aspects of product logistics. These initiatives are already beginning to show benefits to our customers and the environment. One such initiative is touchpoint reduction through distribution network optimization. We sell titanium dioxide products in large quantities and movement of finished products requires a distribution network of storage infrastructure and transportation systems. By optimizing our distribution network and placing products closer to our customers, we are able to minimize the number of touchpoints in the network and reduce the impacts of distribution such as fuel consumption and GHG emissions.



# MATERIAL USE & WASTE MANAGEMENT

As a Responsible Care® company, we actively manage our environmental footprint to reduce material waste and pollution in adherence to applicable laws and regulations. These laws address the generation, storage, handling, use, and transportation of hazardous materials and/or the emission and discharge of hazardous materials into the ground, air, or water.

We focus on minimizing waste generation and promoting a circular economy by converting by-products to co-products via additional processing. These co-products have multiple applications including beneficial reuse and enhanced sustainability in other industries.

A key part of this focus is KRONOS ecochem®, which we established 45 years ago. When we produce white pigments, we also produce large quantities of iron salts as a byproduct. KRONOS ecochem takes these salts, processes them, and sells the salts into a variety of markets. We reduce our footprint by selling our byproducts for beneficial reuse, reducing the volume of potential waste materials, and enhancing the production benefits of titanium dioxide. Our pioneering achievements with KRONOS ecochem provide economic, social, and environmental benefits to the company and to our stakeholders by maximizing such beneficial reuse while creating economic value through the application of circular economy principles.



# North America Rail Car Transport

KRONOS has also successfully migrated to rail transport of products in the US and combined this logistical change with “geometrics” tracking of rail movements. Rail transport has the capability to move a ton of freight a far greater distance per unit of fuel than truck transport, resulting in an estimated 75 percent reduction in carbon footprint for the same service. Geometrics data drives further efficiency by optimizing rail movement to ensure product arrives closer to end customers, requiring less truck and other transport from the rail location to the customer location. Overall, KRONOS’ logistics efforts are paying environmental dividends now by reducing “non-value added CO<sub>2</sub>” emissions, with the promise of even greater efficiencies and sustainability benefits as we expand them for the future.





KRONOS ecochem division was established in 1974 to market iron-based co-products. Synthesis of titanium dioxide generates large quantities of iron salts. KRONOS ecochem repurposes this material for use in a wide range of applications, including water purification and treatment, odor control, chromate reduction, agriculture, iron oxide pigments, and animal nutrition.

**Applications of These Products**

While KRONOS’ primary focus remains production of titanium dioxide, our co-product business is significant. Water treatment alone comprises approximately 60 percent of all iron salt applications. Wastewater treatment plants throughout Europe use KRONOS’ iron salts to eliminate phosphorus and sulfur, improve flocculation efficiency, abate bulking sludge, desulfurize digester gas, and promote sulfide precipitation. Many municipalities also use our products to control nuisance odors emanating from their sewage systems.

Our iron salts are also used to convert soluble chromate, which is harmful to human health, to a harmless trivalent chromium compound in cement, soil, and landfill leachate. High chromate content in cement can cause contact dermatitis among construction workers who come in contact with it often in their particular line of work. Adding two-valent iron salts to cement reduces chromate content, delivering positive impacts for the construction industry by alleviating the risk of these allergic reactions for thousands of cement workers.

**Technology, Quality, and Service Drive Success**

For over 45 years, KRONOS ecochem products have been characterized by high quality, consistent composition, reliable availability, and favorable cost/benefit ratio. Our success is primarily attributable to decades of direct interaction and cooperation with both local authorities and industry. Continuous optimization of our manufacturing processes, an unwavering focus on research and development, and ongoing collaboration and dialogue with our customers ensure our continued success.

KRONOS ecochem participates in both national and international technical committees. This participation is another way in which we shape the development of new products and innovative applications. We routinely organize workshops to share information and discuss current topics, where various solutions to challenging problems are developed and discussed. KRONOS ecochem has authored many technical reports on iron salt applications and we ensure this information, which we make available to our customers via our website, remains current and relevant.

KRONOS understands promoting and contributing to a circular economy is important to the long term sustainability of our business. Through this circular economy approach, we have been able to turn the diversion and repurposing of co-products into a profitable business. KRONOS’ use of innovative upcycling to generate these products is a pioneering achievement, enabling the Company to find valuable markets for these products, enhance the sustainability of our operations, and benefit both human health and the environment.

KRONOS ecochem repurposes co-products from titanium dioxide synthesis for use in a wide range of applications including water purification and treatment, agriculture, iron oxide pigments, and animal nutrition.







# CIRCULAR ECONOMY & RECYCLING

KRONOS produces titanium dioxide via chloride and sulfate processes. At our largest production facility in Leverkusen, Germany, step one of the chloride process, which involves chlorination of the ore, generates approximately 0.3 tons of by-product for every ton of feedstock. This material consists primarily of equal parts fine rutile and petroleum coke, along with a small amount of quartz sand. KRONOS collaborates with a local partner to separate these three components, facilitating independent marketing and reuse of each. The fine, recovered rutile is recycled back to the start of KRONOS' chloride process, displacing up to 5 percent of the raw ore feedstock. KRONOS sells the recovered petroleum coke to coal power plants and/or local block heat power plants.

KRONOS is able to increase yield and decrease the cost of raw feedstock by separating and reusing the fine rutile and petroleum coke. An increase in yield results in a decrease in energy use per ton of titanium dioxide. Additionally, this recovery and recycling program in Germany reduces the amount of this material that must otherwise be discarded by almost 85 percent. Another industry partner is also evaluating a project that uses the remaining fraction, comprised primarily of quartz sand, as an additive for cobblestones. This could potentially close the circle on this process stream by recovering all components for their value and beneficial use, eliminating the need for any disposal.

85%

Reduction in German  
by-product through  
the recovery and  
recycling program

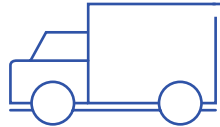
# PRODUCT STEWARDSHIP

Product stewardship impacts most stages of a KRONOS product life cycle and is considered and addressed during product development, manufacture, marketing, sales, and end use applications. Product stewardship at KRONOS focuses on both product safety and regulatory considerations. It involves the collaboration and coordination of multiple functional areas within KRONOS, but primarily our Corporate/Global Environmental, Health, and Safety team (Corporate EHS), the Global Product Stewardship team, which is part of our Value Chain/Global Quality Management group, and our technical services group. The team provides product and regulatory risk assessment and management support, including support for product and commercial development, operations and value chain management, response to customer inquiries, and support of global sales and customer and technical service organizations related to end-use applications.

KRONOS' Product Stewardship team ensures KRONOS has a standardized, consistent, effective process to identify and communicate product stewardship information to internal and external stakeholders. Our product stewardship team develops and maintains product Safety Data Sheets, assesses and reports on product regulatory matters, prepares product information sheets addressing such matters, and effectively communicates this information to interested parties—primarily customers. KRONOS strives for sustainable development, manufacturing, and use of its products and works with suppliers, employees, and customers to address product stewardship-related issues throughout the value chain.







# SUPPLY CHAIN

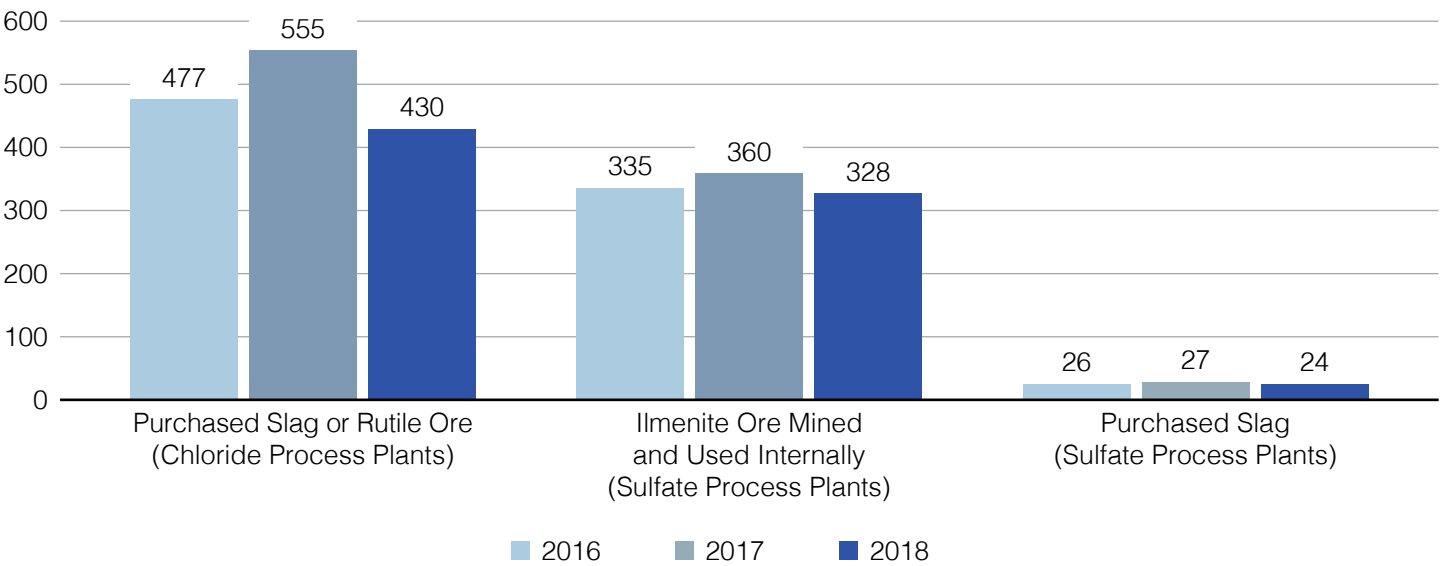
KRONOS produces two variations of crystalline form titanium dioxide at our plants in North America and Europe using both the chloride process and the sulfate process. With direct oversight from our Vice President of Global Procurement, we source up to five varieties of ore and slag as the principle feedstock for our processes. Additional process components include certain bulk chemicals, energy, and water.

## INPUTS

Our chloride process primarily uses either natural rutile or upgraded slag as the titanium-containing feedstock, with chlorine gas and petroleum coke as the other primary inputs. We source the titanium-containing feedstock from a limited number of suppliers under long-term supply contracts.

Ilmenite, or purchased sulfate-grade slag, is the titanium-containing feedstock in the sulfate process, with sulfuric acid and scrap iron as the other main inputs. KRONOS owns and operates a rock ilmenite mine in Norway, which provides the raw input for our European sulfate process titanium dioxide plants. At our Canadian facility, we purchase sulfate-grade slag under annual supply contracts.

Total Raw Materials Procured or Mined (in Thousands of Metrics Tons)



## SUPPLIER SUSTAINABILITY

KRONOS collaborates with suppliers who demonstrate a commitment to effectively managing environmental impacts, health and safety, and other risk factors. KRONOS requests that all key suppliers complete a custom, risk-screening questionnaire, and are subject to audit by our quality team. The screening process enables us to assess supplier operations across these critical factors. We strive to promote safe and fair employment practices across our supply chain.

Our supplier screening questionnaire assesses the following criteria:

- Product Quality
- Supply Quality
- Competitiveness
- Environmental Protection
- Health & Safety
- Ethical Guidelines
- Energy Management

# CIRCULAR PACKAGING PILOT PROGRAM

KRONOS packs a significant portion of finished product in KRONOBags—large, flexible intermediate bulk containers (FIBCs), also referred to as “big bags.” Use of the KRONOBag provides many sustainable benefits, including safer packing/unpacking of pigment, reduced dust from packaging, and enhanced protection and preservation of our products as we transport them to customers around the world. Through partnership with our big bag supplier, KRONOS is participating in a circular packaging pilot program. This program is designed to reduce waste, energy consumption, and greenhouse gas emissions—contributing to UN Sustainable Development Goals—as well as supporting compliance with pending regulatory recycling obligations. The program will have positive impacts on sustainability in our value chain and aligns with our overall ESG strategy. The circular packaging pilot program is just one way we are focusing on our future and our ONE KRONOS mission.

The KRONOBag utilizes premium fabric and a multi-filament “loop-in-loop” design. This design offers our customers the flexibility to easily open and empty the bags in various devices at varying heights. Advanced stitching technologies on the top deck and body maximize dust containment and maintain the quality and integrity of the contents. The rectangular shape of the bags and a new corner stabilizer feature ensure greater stability when palletized, allowing increased stacking height and safer transport.

Perhaps the greatest benefit of the KRONOBag is the opportunity, through industry partnerships, to implement a global concept for reverse logistics and material recuperation. Historically, FIBCs have been considered a high-risk recycling product due to a lack of information regarding their use. Through implementation of a state-of-the-art manifesting and tracking system, our packaging supplier and partners are helping KRONOS transition to high-value reuse/recycling product packaging. Each KRONOBag will have a unique QR code printed on it for tracking and identification through its supply cycle. This custom-made, digital material passport enables us to monitor the bag’s use, noting the number of times it is used and for what product grade. Program partners will collect empty bags from customers and facilitate reuse up to six times before potentially repurposing them within another supply chain, or recycling them.

KRONOS is already participating in an initial, internal testing phase of the circular packaging pilot program—collecting and reusing KRONOBags intended for intercompany shipments of pigment between various KRONOS production facilities. A customized dashboard, developed by our industry partners, will measure, document, and communicate the impact of our participation in the program.

We are excited about this opportunity and look forward to offering a more sustainable packaging solution to our customers in the near future.

6x

Program partners will collect empty bags from customers and reuse them up to six times, before repurposing them within another supply chain, or recycling them.





# SOCIAL







# SOCIAL INVESTMENT & COMMUNITY ENGAGEMENT

KRONOS actively supports the communities where we work through direct engagement, support for employee volunteering, and social investment. Involvement in our communities aligns with our mission at KRONOS to maintain a culture of collaboration and leadership.

## MANAGEMENT APPROACH

KRONOS encourages and sponsors employee participation in varied philanthropic and volunteer events. Opportunities are identified based on employee interest and concern because we believe that approach instills a deeper sense of attachment and personal investment in the projects we support. This approach also ensures we are meeting the unique needs of each of the communities in which we operate. By investing in our communities, we are providing lasting benefits that will continue to enhance the wellbeing of local stakeholders for years to come.



KRONOS encourages and sponsors employee participation in varied philanthropic and volunteer events. Opportunities are identified based on employee interest and concern because we believe that approach instills a deeper sense of attachment and personal investment in the projects we support.

## PHILANTHROPY

We focus on strategic investments that reflect the concerns of our employees. Each KRONOS location designates a portion of annual spending for donation to charitable causes as part of our united approach to social investment. Each facility maintains a KRONOS Cares volunteer team comprised of employees passionate about giving back to the communities where they live and work. These KRONOS Cares teams poll their coworkers to identify philanthropic areas of interest and empower them to give both time and resources by offering opportunities to respond to local needs. In 2018, KRONOS gave back over \$150,000 to our local communities.

In the United States, our United Way partnership matches 150 percent of employee donations and empowers our KRONOS US employees to show their dedication to philanthropy. Through this annual campaign, employees can make donations in the form of payroll deductions that go directly to United Way. In 2017, donations from all U.S. employees (KRONOS and parent company Contran Corporation), along with matching contributions, totaled almost \$140,000. We exceeded these efforts in 2018 raising over \$190,000 for United Way. For our efforts we were recognized with an award for Corporate Leadership, standing out amongst our peers by increasing our contributions over 30 percent from 2017 to 2018.



# VOLUNTEERISM

Our volunteer efforts are coordinated through KRONOS Cares, our initiative to provide employees with opportunities to become more involved in their communities. Each location has an employee-led KRONOS Cares committee that sets priorities that meet local needs and align with our overall strategic framework for community engagement and social investment.

In this way, we tailor our philanthropy to the specific requirements of each location, and maximize employee ownership and engagement in the program. The goals of KRONOS Cares are to schedule regular volunteering events for each location, bring people together for

a greater impact, leverage KRONOS' employees' knowledge and energy, and deliver information to all employees about becoming active participants. The corporate team ensures alignment with our strategic objectives to foster a sense of togetherness within our teams and to create shared value with our community partners. The team also provides a forum for sharing best practices across the global business. To learn more about our efforts, see the case studies on the following page.

While we do not currently track total volunteer hours, we are considering this metric as a way to measure engagement in the future.



## E.D. Walker Middle School Dallas, Texas

In 2018, our U.S. team entered into a long-term partnership to support E.D. Walker Middle School, a school within the Dallas Independent School District located adjacent to our corporate headquarters. Most, if not all, schools in the district rely heavily on parental involvement and community support to subsidize school clubs and various campus improvement projects. E.D. Walker faces a unique challenge due to several nearby charter and private school options that hamper enrollment, and therefore, support from the local community. KRONOS, and our parent company, Contran Corporation, offer support through giving of primarily our time, but also resources. Projects in 2018 included remodeling two teachers' lounges and donating furniture for these common areas. The Dallas team also added pops of color in the student library and in various locations throughout the school in the hope of further engaging students and creating a better learning environment. Some team members choose to focus on supporting teachers by helping with bulletin boards, while others focus on supporting the students by providing tutoring. We also co-sponsor one fundraising event per semester, a carnival in the fall and a one-mile fun run in the spring.



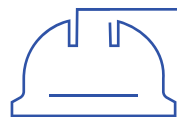
## Relay for Life Langerbrugge, Belgium

In June 2018, our Belgium Team participated in the Relay for Life in Evergem, located near our Langerbrugge production facility. This fundraiser supports cancer patients and cancer research performed by the [Foundation Against Cancer](#). During the Relay for Life, over 40 KRONOS volunteers participated, with the team walking and/or running for 24 hours. Dedicated volunteers had to ensure at least one member of our team was walking/running the course at all times, exemplifying our ONE KRONOS principle of teamwork among our employees. KRONOS sponsored each volunteer. Some employees even organized games to raise extra funds for the cause. The Belgium KRONOS Cares Team, raised almost €7,000—ranking us 5th out of 61 teams.



## De La Commune Park Varenes, Canada

In November 2018, members of our Canada Team collaborated with employees from the city of Varenes to improve the landscaping of De La Commune Park near the St. Lawrence River. KRONOS purchased the trees and helped plant them as part of an employee-led effort to rejuvenate the local area. The site EHS team led the project, and more than 20 KRONOS employees donated their time and effort.



# OCCUPATIONAL HEALTH & SAFETY

Safety is our top priority at KRONOS. We are committed to maintaining a strong safety culture where all of our employees meet or exceed required industry performance standards and continuously seek to improve occupational and process safety performance. We demonstrate our commitment by ensuring our processes, plants, and other facilities maintain safe operations, and by providing our employees with the tools and training necessary to make the right decisions, thereby preventing accidents and injuries.

## MANAGEMENT APPROACH

At KRONOS, safety is the responsibility of everyone at the company, from the Boardroom to the factory floor. Our Vice President of Environmental Affairs provides executive oversight of our safety program together with senior leaders in Operations Management. Plant management reports to senior management, providing general safety statistics daily and a more detailed and wider range of safety and sustainability KPIs monthly. In addition, senior operations managers and the Vice President of Environmental Affairs participate on, and present to, the Functional Leadership Team (FLT) monthly regarding health and safety KPIs and progress toward our internal goals.

Our Sustainability, Environment, Energy, and Quality (SEEQ) Policy identifies our global standards and guides the FLT in development of aspirational goals for safety, environment, energy, and quality. This policy serves as the basis for developing corporate safety standards and guidelines, which in turn drive the creation of, or updates to, local facility safety management systems. Safety management is the responsibility of the operational leaders at each of our facilities, supported by their local safety managers, and in collaboration with corporate safety experts and dedicated global process safety and occupational safety managers.

KRONOS implements site-specific health and safety management systems that align with recognized management system frameworks and ensure compliance with SEVESO, ISO, and other regulatory and management requirements and guidelines applicable to each facility. At each of our locations, we delineate clear responsibility and accountability by leveraging formal task management tools to track compliance.

KRONOS health and safety teams conduct training for KRONOS personnel and contractors at each location to ensure they understand their responsibilities and receive the equipment and skills necessary to perform tasks safely.

Our corporate and global occupational health and safety (OHS) team facilitates sharing of best practices among all KRONOS locations and supports the implementation of corporate policies and procedures. We primarily communicate with operational personnel through weekly safety meetings, led by our frontline team leaders and manufacturing area foremen.

At each location, we implement incident reporting systems open to all personnel. We use these systems to track recordable incidents as well as near misses, hazard observations, and opportunities to improve safety conditions. We thoroughly investigate all incidents, identify corrective actions, and implement solutions to address the root causes of such events.

We enforce adherence with our processes through a robust internal audit program and utilize a system of tiered assurance with regular Shiftmaster safety inspections for the first level of review. We also conduct quarterly site reviews of safety programs and performance, led by our operations teams. Global OHS performs periodic internal audits at each location, and incident investigation and follow-up. There is also further external auditing in accordance with the requirements of local facility management systems and local regulation.

KRONOS works closely with multiple industry groups to support the development and sharing of best practices across the industry. We also support industry associations to engage with legislators and regulators in the development of industry standards.

We track a number of metrics to measure our performance, including Total Frequency Rate (greater than one day of lost time) Lost-time Incident Rate (LTIR), First Aid Incident Rate, and Near Misses. The table on the following page shows our performance from 2016 through 2018.



# CONTRACTOR MANAGEMENT

KRONOS’ contractors are also part of our ONE KRONOS mission and we hold them accountable to the same rigorous quality, safety, and ethics standards to which we hold ourselves. Contractors working in our operating facilities must participate in basic facility health and safety training, unit-specific health and safety training, and area-specific (job-specific) health and safety training. Following completion of all required training, contractors must acknowledge they understand by providing their signature.

When a contractor or subcontractor is onsite to perform a task requiring qualification credentials, they must present valid credentials to KRONOS prior to commencing the subject work task/s. Contractors and subcontractors working in or around certain equipment and processes in our operating facilities must be Safety Certificate

Contractors (SCC) certified. If a contractor in such a position is not SCC certified, KRONOS must review and approve their safety program to ensure compliance with local laws and KRONOS procedures.

KRONOS performs random safety inspections of contractors and subcontractors to ensure all safety rules outlined in the work order, measures defined during safety training, pertinent accident prevention regulations or other safety and industrial hygiene rules, and the environmental protection regulations are being observed by outside contractors. Any observed violation of safety rules and regulations is reported immediately to contractor supervisors and they are asked to remedy any deficiencies. All KRONOS employees are authorized to “stop work” should they observe unsafe behavior or believe there is an immediate danger.

# HEALTH & SAFETY PERFORMANCE

## Employees & Contractors

	2016	2017	2018
Lost days per 1000 full time workers (KRONOS employees incl. KII)	34.3	39.6	124.1
Reported occupational diseases	0	0	0
Lost time injuries for independent contractors working at KRONOS sites	7	7	8
Injuries > 3 lost workdays per 1000 full-time workers at KRONOS	4.7	3.3	4.8
Fatalities	0	0	0

# KRONOS SAFETY CUP

At KRONOS, safety comes first—period. Our employees are our greatest asset—we have a responsibility to them, their families, and our local communities to operate our production facilities with the utmost concern for safety. For that reason, safety and employee satisfaction are two critical pillars of our corporate business goals. At KRONOS, we want to have the best safety record in the industry and we continually strive for zero safety-related incidents.

In pursuit of this target, we are continuously developing, sharing, enhancing, and promoting safety tools and best practices. These efforts are supported by the vision and spirit of ONE KRONOS, which has further enhanced collaboration throughout our global organization, with a renewed focus on communication, teamwork, and leadership.

A key aspect of our dedication to occupational health and safety is maintaining employee awareness of risks and hazards. At KRONOS, we engage our workforce regularly via safety committees and workshops,

pre- and post-shift safety talks, recurring safety training, and an annual face-to-face meeting of all facility safety officers and global/corporate safety managers.

The KRONOS Safety Cup adds a little friendly competition to our health and safety engagement and is awarded to the facility with the lowest injury rate each year. Winning the Safety Cup is a well-recognized honor within KRONOS, so competition between sites to minimize incidents and injuries remains fierce.

In 2017, our facility in Nordenham, Germany won the KRONOS Safety Cup for their safety record. The cup currently resides at our facility in Varennes, Canada following their exemplary safety performance in 2018.



2017

In 2017, our facility in Nordenham, Germany won the KRONOS Safety Cup for their safety record.



# VARENNES EMERGENCY ACTION PLAN

Our Varennes, Canada facility implemented an Emergency Action Plan (EAP), a demonstration of our commitment to safety, to respond to emergencies. The EAP addresses evacuation plans, environmental emergencies, bomb threats, and other potential disasters. Forty-five employees participate in the EAP, ten of which must be on site at all times. Every year we train all of our members on respiratory equipment, firefighting, first aid and CPR, and other key components of our EAP. We simulate disasters annually to test the readiness and effectiveness of our program. We linked our EAP with the emergency plans of surrounding communities and neighboring plants. Over the past twenty years, our Varennes, Canada facility has won the Provincial Civil Security Agency award for Emergency Preparedness and Prevention twice.





# EMPLOYEE RELATIONS: **DIVERSITY & INCLUSION**

At KRONOS, we foster a diverse and inclusive culture, welcoming employees regardless of their backgrounds. A diverse KRONOS means a KRONOS better positioned to achieve our goals and serve our customers through our vision of ONE KRONOS.

## MANAGEMENT APPROACH

Our commitment to diversity and inclusion starts with our Board and our leadership. In October 2017, our CEO signed the [CEO Action for Diversity & Inclusion™](#) pledge, the largest CEO-driven business commitment related to promoting diversity and inclusion in the workplace. The CEO Action for Diversity & Inclusion program focuses on key initiatives to promote inclusion and free discussion of ideas, actions, and experiences, encouraging knowledge sharing by participants in a spirit of collaboration. While each company is different, and success will vary, the program believes organizations can achieve diversity and inclusion goals faster by working together.

KRONOS' Vice President of Human Resources manages our diversity and inclusion efforts at the corporate level. Human Resource team leaders located at each KRONOS facility take the lead on driving diversity and inclusion, ensuring that implementation of these efforts meets the specific needs of each location. Through our efforts, we ensure a diverse workforce that embodies the value of our global culture—ONE KRONOS.

## TRAINING & GRIEVANCE MECHANISMS

All KRONOS managers are trained to investigate and address all complaints, including those related to diversity, in an unbiased and fair manner. When necessary, we engage third party mediators to oversee investigations. Additionally, KRONOS provides training on diversity, inclusion, and related issues to both managers and employees, so they are able to anticipate and avoid potential issues, and address any that do arise in the workplace. We also encourage managers and all employees to report concerns through our confidential reporting hotline, and do not tolerate any threat of retaliation against those who report issues.

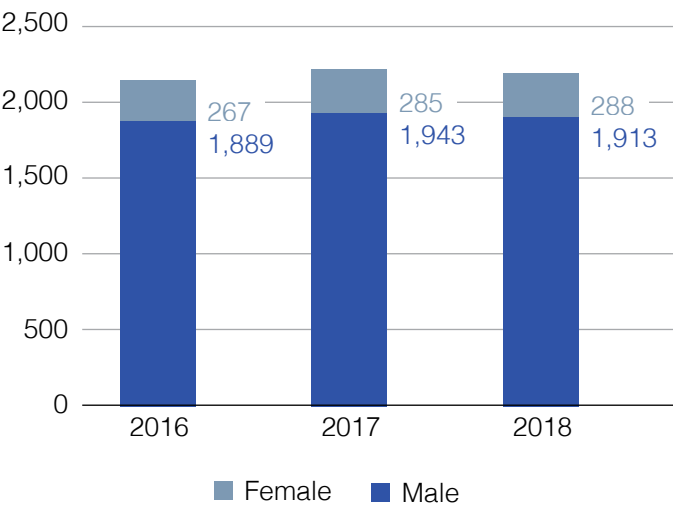


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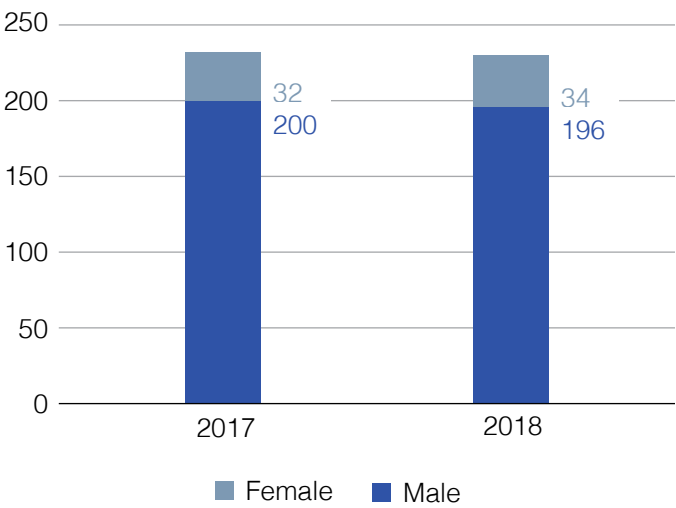


# EMPLOYEE DIVERSITY

Gender Split

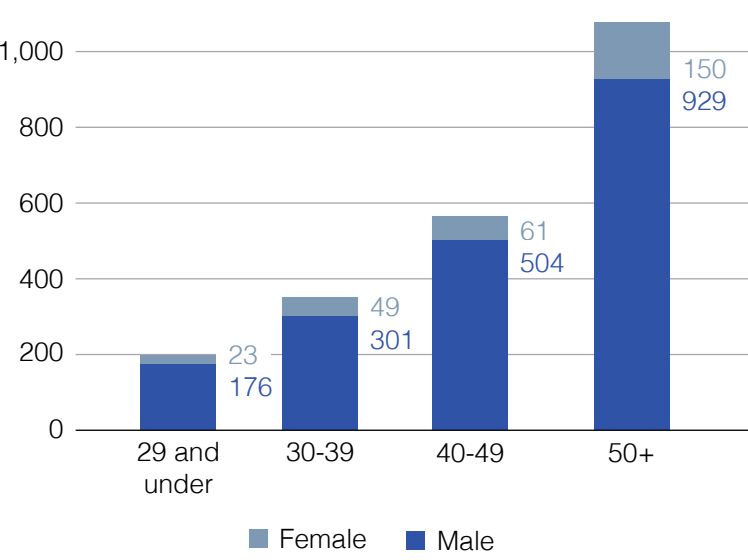


Group Leader, Manager Positions or Higher\*

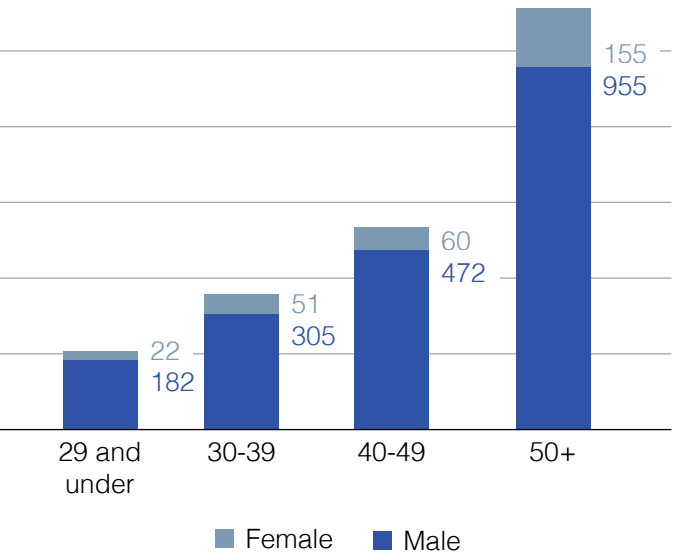


\*Consists of personnel with at least one direct report

2017 Employees by Age Range & Gender



2018 Employees by Age Range & Gender







## EMPLOYEE RELATIONS:

# TRAINING & DEVELOPMENT

It takes the cooperation of all KRONOS employees located around the world, working together, to make our company successful. Our skilled and talented workforce provides the basis for us to create long-term value for our investors and other stakeholders. We implement training and development programs and initiatives to ensure all of our people are able to reach their potential, and we strive to build an empowering environment where everyone can contribute their best work. Maintaining a sustainable business means having a diverse, well-trained, engaged workforce with development plans for long-term stability and growth.

## MANAGEMENT APPROACH

Our employees receive regular performance and career development reviews. Actively providing our employees with feedback supports their success and KRONOS' goal of continuous improvement.

Through our continuous training programs, we ensure well-qualified chemical workers and craftspersons are in place to operate our plants, and that our people are able to maintain and grow their professional competencies.

In Germany, we recently released a training and development program of skills-based workshops for employees and managers to develop their leadership and management abilities. Each module of the program focuses on a specific area of management and uses a mix of classroom and applied learning to build practical leadership skills. This program will debut across the global workforce in 2019 and 2020.

Actively providing our employees with feedback supports their success and KRONOS' goal of continuous improvement.

## PERFORMANCE REVIEWS & TRAINING

As part of our ONE KRONOS strategy, we implemented the KRONOS Professional Development Program (PDP) in 2018. The program is open to all employees and customized to meet each employee's development needs. We expect managers to work with their teams to identify development needs and ensure all participants experience a robust and balanced development program. PDP focuses on the three pillars critical to the success of ONE KRONOS:

- Teamwork
- Communication
- Leadership

By focusing on these three pillars, we built a spirit of collaboration as we work toward a common goal, communicate clearly and transparently, and create a culture focused on engagement, confidence, and optimism.

We teach our PDP participants through five unique modules, four of which we will launch in 2019:

- Leadership@KRONOS (launched in 2018)
- Basics of Communication
- Conflict Management
- Change Management
- Project Management

Each module focuses on topics related to KRONOS' operations that are critical to our success, including strategic leadership, voicing criticism, and the principles of working leaders. The learning involves a three-day classroom training session, preparation work, and practical application after the course.



# GOVERNANCE







# CORPORATE GOVERNANCE

KRONOS operates ethically and transparently throughout our global operations. We hold our employees, Board of Directors, contractors, suppliers, and other stakeholders to the highest standards of ethics. Our commitment to ethical business practices starts with our Board of Directors, which is responsible for the review of our strategic direction and major policies. Our Directors leverage their experience and acumen to guide KRONOS, including our overarching goal of acting as ONE KRONOS—promoting positive and open communication in support of our strategic goals and objectives.

## CORPORATE GOVERNANCE GUIDELINES

Our [Corporate Governance Guidelines](#) outline the structure, responsibilities, and operations of the Board. These responsibilities include:

- Annual selection of executive officers including the chair of the board and the chief executive officer;
- Review of quarterly and annual financial reports, proxy statement, and other items proposed for a vote to our stockholders
- Material acquisitions, divestitures, mergers, and other transactions material to KRONOS outside the ordinary course of business.

Our Board also maintains responsibility for our adherence to, and compliance with, our Code of Business Conduct and Ethics, including compliance with all applicable laws and regulations.

## BOARD COMMITTEES

We maintain two Board Committees. Our Audit Committee has responsibility for overseeing financial accounting and reporting, while our Management Development and Compensation Committee oversees matters related to employee benefit plans and grant awards under our equity compensation plan. For more information on the Audit Committee, please visit the Ethics, Integrity, & Compliance section of this report.





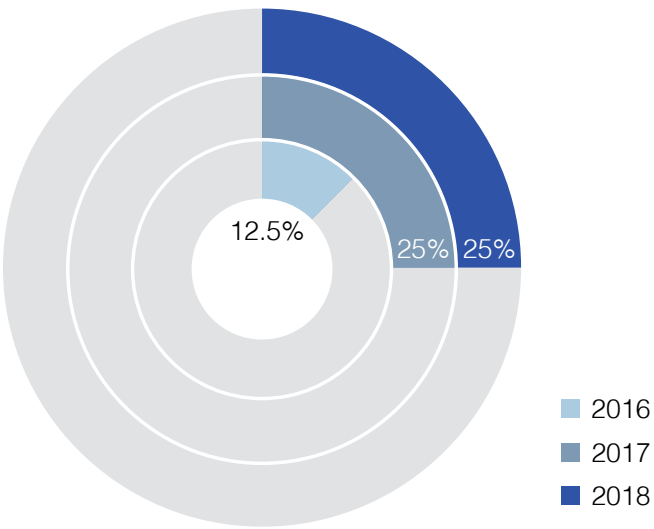
# ELECTION OF DIRECTORS & BOARD DIVERSITY

There are currently seven Directors on our Board, elected by our stockholders. Each nominee has an extensive background in senior management, policy, and/or accounting, with the Board considering each nominee's unique business experience. For more information on each of our Directors, please see our latest Proxy Statement.

While we do not maintain any formal policy related to the diversity of our Board nominees, we do consider the diversity of our nominees in relation to skills, expertise and background.

100% increase of women on the Board since 2016

Board Diversity by Gender  
% of Women on the Board



# REMUNERATION

Directors of KRONOS who are not employees of Contran Corporation (our ultimate parent company) or of one of its subsidiaries or affiliates, are eligible for cash compensation for their position on our Board. We disclose the total compensation awarded to each Board member in our annual Proxy Statement. In accordance with U.S. law and regulation, we disclose the ratio of our CEO compensation to median annual total compensation of all employees in our Proxy Statement.



# GRIEVANCE MECHANISMS

Concerns regarding KRONOS' accounting, financial reporting, internal controls, or auditing matters can be submitted online at [KRONOS Worldwide Ethicspoint](#). For those who prefer to speak directly with a third-party communications specialist in their native language, toll-free country-specific telephone numbers are also provided at the web address noted above. Information regarding how to access a third-party communication specialist, whether online or via telephone, is also posted predominantly in common areas at each facility location.







# ETHICS, INTEGRITY & COMPLIANCE

At KRONOS, we believe in operating ethically. We implement robust governance procedures to uphold ethical business practices throughout our operations. Our commitment to ethics starts with our Code of Business Conduct and Ethics, a standard that applies to all KRONOS employees, including each of KRONOS' subsidiaries. We expect all KRONOS employees to understand and comply with applicable laws and regulations, including those related to insider trading and bribery. The principles outlined in our Code build on this expectation and require employees, suppliers, and business partners to act with integrity, honesty, and ethics.

KRONOS employees must report suspected or known violations of our Code of Business Conduct and Ethics. We encourage employees to report unethical behavior directly to their managers and direct supervisors; however, employees can also report information anonymously through [KRONOS Worldwide Ethicspoint](#) or through the toll-free reporting lines made available in the Code. Employees may also contact KRONOS' General Counsel directly, if so desired. The general counsel or a designee investigates all reports and maintains confidentiality to the greatest extent possible while also adhering to applicable laws. Depending on the nature of the complaint, it may be routed to the Audit Committee chairperson. KRONOS received no reports through our anonymous system during 2017 or 2018.

KRONOS is a U.S. publicly traded company and as such is subject to extensive laws, disclosure requirements, and accounting rules. KRONOS' Audit Committee supports our Board of Directors with oversight of financial accounting and reporting processes. The Committee directly oversees KRONOS' compliance with accounting and reporting regulatory requirements, the reliability of financial statements (including our public disclosure Forms 10-K and 10-Q), internal controls over financial reporting, the qualifications and independence of the independent auditor of our financial statements, and the performance of our internal audit processes and the independent auditor. The Audit Committee maintains responsibility for receiving and responding to complaints regarding accounting, internal accounting controls, or other accounting related matters. For more information, please review our Audit Committee Charter, available on our website.

All employees must follow our Foreign Corrupt Practices Act guidelines. We distribute the policy annually to employees as a reminder of this requirement. The policy is located on the KRONOS intranet site and is offered in several languages.



KRONOS commits to meeting, if not exceeding, applicable regulatory requirements. Each facility implements the appropriate mechanisms to comply with local and national legislation. Our operations teams handle regulatory compliance at the facility level, with guidance from our corporate team, which conducts periodic facility site visits to review policies and procedures, including a review of regulatory issues. Should we find or receive a report of non-compliance at a facility, our corporate team works with local operations teams to address the issue. We comply with applicable aspects of the European Union Registration, Evaluation, Authorization and Restriction of Chemical substances (REACH) regulations, the United States Toxic Substance Control Act (TSCA), and similar laws in other jurisdictions where we make or sell our products. Through timely compliance with these requirements, we promote higher levels of human health and environmental protection related to risks posed by chemicals.



GRI CONTENT INDEX

GRI Standard	Disclosure	Location	Completeness	Page Number
General Disclosures				
Organizational Profile				
GRI 102: General Disclosures 2016	102-1 Name of the organization	KRONOS Worldwide, INC.	Complete	
	102-2 Activities, brands, products, and services	About KRONOS 2018 10-K, Item 1, pp. 4-9	Complete	
	102-3 Location of headquarters	Dallas, Texas	Complete	
	102-4 Location of operations	2018 10-K, Item 1, pp. 7-8	Complete	p. 3
	102-5 Ownership and legal form	2018 10-K, Item 1, p. 4	Complete	
	102-6 Markets served	2018 10-K, Item 1, p. 5	Complete	
	102-7 Scale of the organization	About KRONOS Employee Relations 2018 10-K, Item 1, p. 11, Item 6, pp 19	Complete	
	102-8 Information on employees and other workers	Employee Relations		
	102-9 Supply chain	Supply Chain 2018 10-K, Item 1, pp. 8-9		p. 26
	102-10 Significant changes to the organization and its supply chain	No significant changes to KRONOS' supply chain		p. 27
	102-11 Precautionary Principle or approach	KRONOS Worldwide applies the Precautionary Principle across all of its operations, in line with environmental management best practices, and regulatory requirements in its countries of operation.		
	102-12 External initiatives	KRONOS does not publicly disclose a list of external initiatives we endorse or support		
	102-13 Memberships of associations	KRONOS does not publicly disclose a list of the associations where we maintain a membership		

GRI Standard	Disclosure	Location	Completeness	Page Number
Strategy				
GRI 102: General Disclosures 2016	102-14 Statement from senior decision-maker	COO Letter	Complete	p. 1
Ethics & Integrity				
GRI 102: General Disclosures 2016	102-16 Values, principles, standards, and norms of behavior	Ethics, Integrity & Compliance		p. 52
Governance				
GRI 102: General Disclosures 2016	102-18 Governance structure	Corporate Governance: Corporate Governance Guidelines	Complete	p. 49
	102-20 Executive-level responsibility for economic, environmental, and social topics	Sustainability Strategy & Governance: Sustainability Governance	Partial	p. 10
	102-23 Chair of the highest governance body	2018 Proxy Statement, Proposal 1, p. 8	Complete	
Stakeholder Engagement				
GRI 102: General Disclosures 2016	102-40 List of stakeholder groups	Materiality Assessment: Stakeholder Groups	Complete	
	102-41 Collective bargaining agreements	2018 10-K, Item 1, p. 12	Complete	
	102-42 Identifying and selecting stakeholders	Materiality Assessment: Engagement Process	Complete	p. 12
	102-43 Approach to stakeholder engagement	Materiality Assessment: Engagement Process	Complete	p. 12
	102-44 Key topics and concerns raised	Materiality Assessment: Engagement Process	Complete	p. 12
Reporting Practices				
GRI 102: General Disclosures 2016	102-45 Entities included in the consolidated financial statements	2018 10-K, Exhibit 21.1	Complete	
	102-46 Defining report content and topic Boundaries	Sustainability Strategy and Governance: Sustainability Strategy	Partial	p. 9
	102-47 List of material topics	Materiality Assessment: Materiality Matrix	Complete	p. 13
	102-48 Restatements of information	None		



GRI Standard	Disclosure	Location	Completeness	Page Number
GRI 102: General Disclosures 2016	102-49 Changes in reporting	KRONOS conducted a materiality assessment in 2018 to identify the topics most material to our business. The results of the assessment are included in the <a href="#">Sustainability Strategy and Governance</a> section of this report.	Complete	<a href="#">p. 13</a>
	102-50 Reporting period	2017-2018	Complete	
	102-51 Date of most recent report	2015/2016 Sustainability Report	Complete	
	102-52 Reporting cycle	Biennial	Complete	
	102-53 Contact point for questions regarding the report	<a href="#">Shannon Walker</a>	Complete	
	102-54 Claims of reporting in accordance with the GRI Standards	This report has been prepared in alignment with the GRI Standards: Core option	Partial	
	102-55 GRI content index	<a href="#">GRI Content Index</a>	Complete	<a href="#">p. 54</a>
	102-56 External assurance	The data in this report has not been externally assured	Partial	
Economic Topics				
Economic Performance				
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	<a href="#">2018 10-K</a> , Item 5, pp. 18-19, Item 6, p. 19		
	103-2 Explain management approach components	<a href="#">2018 10-K</a> , Item 5, pp. 18-19, Item 6, p. 19		
	103-3 Evaluate management approach	<a href="#">2018 10-K</a> , Item 5, pp. 18-19, Item 6, p. 19		
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	<a href="#">2018 10-K</a> , Item 5, pp. 18-19, Item 6, p. 19		
Anti-Corruption				
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	<a href="#">Ethics, Integrity &amp; Compliance</a>	Complete	<a href="#">p. 52</a>
	103-2 Explain management approach components	<a href="#">Ethics, Integrity &amp; Compliance</a>	Complete	<a href="#">p. 52</a>
	103-3 Evaluate management approach	<a href="#">Ethics, Integrity &amp; Compliance</a>	Complete	<a href="#">p. 52</a>

GRI Standard	Disclosure	Location	Completeness	Page Number
GRI 205: Anti-Corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	<a href="#">Corporate Governance: Grievance Mechanisms</a>	Partial	<a href="#">p. 51</a>
GRI 414: Social Supplier Assessment	414-1 New suppliers that were screened using social criteria	<a href="#">Supply Chain: Supplier Sustainability</a>	Partial	<a href="#">p. 27</a>
Environmental Topics				
Environmental Compliance				
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	<a href="#">Environmental Management: Management Approach</a>	Complete	<a href="#">p. 17</a>
	103-2 Explain management approach components	<a href="#">Environmental Management: Management Approach</a>	Complete	<a href="#">p. 17</a>
	103-3 Evaluate management approach	<a href="#">Environmental Management: Management Approach</a>	Complete	<a href="#">p. 17</a>
Energy				
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	<a href="#">Environmental Management: Energy Use</a>	Complete	<a href="#">p. 18</a>
	103-2 Explain management approach components	<a href="#">Environmental Management: Energy Use</a>	Complete	<a href="#">p. 18</a>
	103-3 Evaluate management approach	<a href="#">Environmental Management: Energy Use</a>	Complete	<a href="#">p. 18</a>
GRI 302: Energy 2016	302-1 Energy consumption within the organization	<a href="#">Environmental Management: Energy Use</a>	Partial	<a href="#">p. 18</a>
	302-5 Reductions in energy requirements of products and services	<a href="#">Environmental Management: Energy Use</a>	Partial	<a href="#">p. 18</a>
Effluents & Waste				
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	103-2 Explain management approach components	<a href="#">Material Use &amp; Waste Management</a>	Complete	<a href="#">p. 21</a>
	103-3 Evaluate management approach	<a href="#">Material Use &amp; Waste Management</a>	Partial	<a href="#">p. 21</a>
GRI 306: Effluents and Waste 2016	306-2 Waste by type and disposal method	<a href="#">Material Use &amp; Waste Management</a>	Partial	<a href="#">p. 21</a>
	306-4 Transport of hazardous waste	<a href="#">Material Use &amp; Waste Management</a>	Partial	<a href="#">p. 21</a>

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	103-3 Evaluate management approach	Material Use and Waste Management: Product Stewardship	Complete	p. 25
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Material Use and Waste Management: Product Stewardship	Partial	p. 25
GRI 417: Marketing and Labelling 2016	417-1 Requirements for product and service information and labeling	Material Use and Waste Management: Product Stewardship	Partial	p. 25
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Local Communities				
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GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	Social Investment & Community Engagement: Volunteerism	Complete	p. 34
	413-2 Operations with significant actual and potential negative impacts on local communities	Social Investment & Community Engagement: Management Approach	Complete	p. 33

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GRI 403: Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Occupational Health & Safety: Health & Safety Performance	Partial	p. 34
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GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Diversity & Inclusion: Employee Diversity	Partial	p. 38
Training & Education				
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GRI 404: Training and Education 2016	404-3 Percentage of employees receiving regular performance and career development reviews	Training and Development: Performance Reviews and Training	Partial	p. 41



