



KRONOS ESG

Report 2023

TOMORROW TOGETHER



KRONOS ESG



TMP / TME-FREE

For TMP/TME-free architectural coatings



COOL ROOFS

For crack-resistant and solar reflective roof-paints



INCREASED EFFICIENCY

For polyurethane top coat



LONGER LIFECYCLE

For high-end polycarbonate applications



HIGHER PROTECTION

For UV protected medications



SUPERIOR DURABILITY

For exterior powder coatings



HIGHER SAFETY

Reflective road markings for safety



ABOUT THIS REPORT

KRONOS is pleased to publish this ESG Report focusing on key ESG accomplishments as well as metrics from 2021 and 2022. This report is aligned with the Global Reporting Initiative (GRI) standard.

Our products contribute to a more sustainable world. We invite all stakeholders to review additional information on our ESG programs, previous ESG reports, and our virtual showroom on our website.



ESG Website

Tomorrow Together

Throughout our long history, KRONOS has been committed to strong ESG values. Our mission is to continue this tradition fueled by forward-thinking innovation, a relentless drive to improve, and our long-standing relationships with stakeholders, to build a more sustainable business in every sense - for the environment, as well as for our customers, our people and our communities.

**"TOGETHER WE WILL
ACHIEVE OUR VISION
FOR TOMORROW."**

In this report we highlight our recent ESG focus and progress areas, in particular our critical mission to transform through innovation to position KRONOS for a bright and responsible future.



Jim Buch, President & CEO

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About KRONOS

KRONOS is a leading global producer and marketer of value-added titanium dioxide (TiO₂) pigments, a base industrial product used in a wide range of applications. We produce TiO₂ using both the chloride process (CP) and the sulfate process (SP).

We take pride in making the world brighter with the most effective whitening agent in the world - titanium dioxide.

TiO₂ is a white pigment that plays a key role in the production of paints and coatings, plastics, papers, and fibers, as well as in specialties such as cosmetics, pharmaceuticals, glass, and ceramics.

It has the highest opacity of all white pigments due to its exceptionally high refractive index and subsequently high light-scattering power. Applications using TiO₂ are characterized by superior whiteness and brightness, a neutral tone, outstanding dispersibility, and excellent tint reduction in colored media.

Brighter together is much more than our claim - it is the natural evolution of our ONE KRONOS initiative and highlights the breadth of our culture aligned around our values. Brighter together is our compass in everything we do and gives direction to all our projects and initiatives.



Global Presence



At a Glance

About TiO₂



Titanium dioxide is a naturally occurring oxide of titanium. It has the highest refractive index of any material known to man, including diamonds, and is one of the whitest materials on earth. When produced as a powder, it transforms into a pigment that provides maximum whiteness and opacity.

Performance

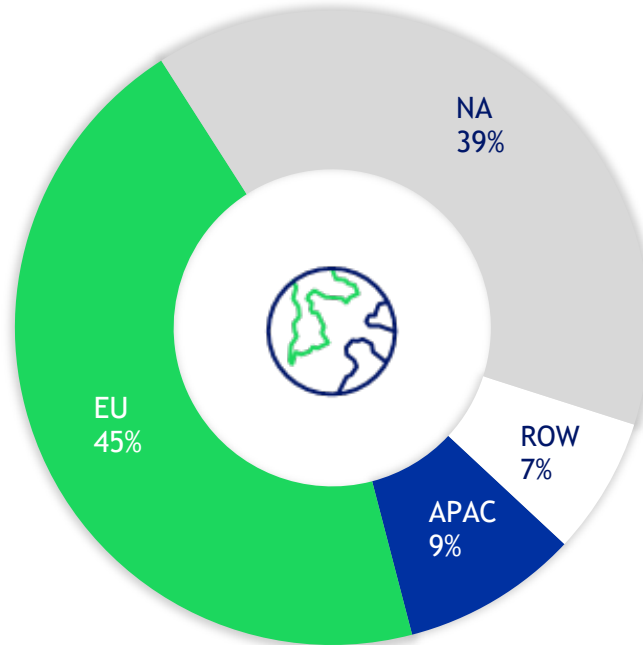


Titanium Dioxide Production Volume, metric tons (mt)

2021 **545,000**

2022 **492,000**

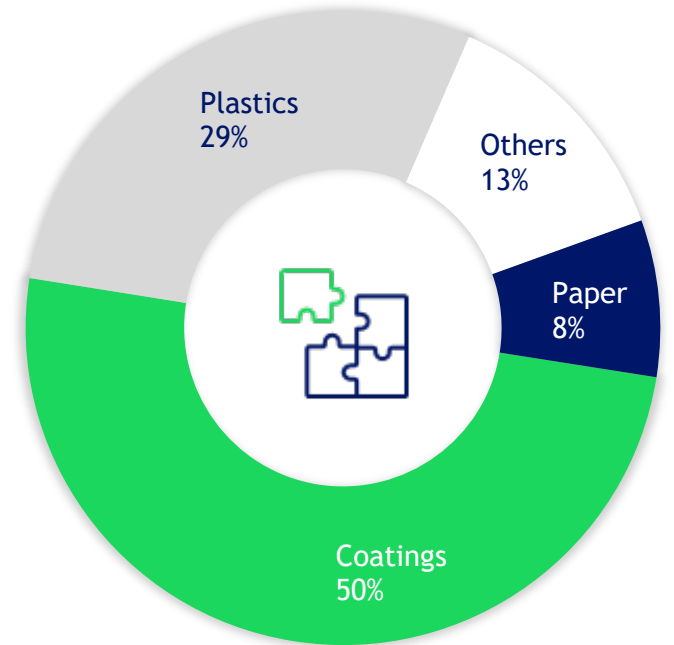
2022 Sales Volume by Region



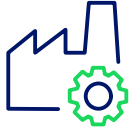
NA North America
ROW Rest of World

EU Europe
APAC Asia-Pacific

2022 Sales Volume by Application



This Report Focuses on Recent ESG Progress Areas



TRANSFORMATION

We are transforming and evolving through a committed focus on innovating our operations, products, and performance.



RESPONSIBLE SUPPLY CHAIN

KRONOS is committed to maintaining high levels of ethics and integrity and requires our business partners to do the same by committing to our Supplier Code of Conduct and risk assessment program.



RESPONSIBLE PRODUCTS

Our products contribute to a sustainable future in many ways, including product safety, durability, and unique characteristics that will allow us to capture additional opportunities through further innovation.



SAFETY

In 2022 we achieved the lowest injury rate in our history and have cut our injury rate by 60% over the last 12 years through our KRONOSafe continuous improvement program.



Our ESG Priorities

As a leading global producer of titanium dioxide, KRONOS is continually assessing ESG priorities through various means of engagement with critical stakeholders. Our priority assessment uses a systematic and evidence-based approach to identify ESG areas with the most significance to our unique business and stakeholders, and to guide our ESG programs.

Stakeholder Engagement

Assessment of our ESG priorities includes periodic surveys and interviews of key internal stakeholders, ranging from shift-level employees through executive management. Participants are provided with a list of topics and asked to consider greatest risks and opportunities, emerging issues, and internal and external pressures from multiple perspectives. We also regularly engage with external stakeholders, including customers, suppliers, and other business partners to identify and discuss their ESG priorities, their perception of KRONOS, and how we can best work together to support our mutual needs as they relate to enhancing overall ESG performance.

Tools

Peers	✓ Benchmarking
Industry Groups	✓ Advocacy, Benchmarking
Sustainability Ratings	✓ Benchmarking, Continuous Improvement
Executive Management	✓ Engagement, Interviews
Internal Stakeholders	✓ Engagement, Surveys
Customers	✓ Engagement, ESG Communications, Surveys
Suppliers	✓ Risk Assessment, Supplier Code of Conduct



Our Priorities



ENVIRONMENTAL

- Decarbonization
- Energy Management
- Compliance
- Circular Economy



SOCIAL

- People & Product Safety
- Human Capital Management
- Responsible Supply Chain
- Social Investment & Community Engagement



GOVERNANCE

- Corporate Governance
- Sustainability Governance
- Public Reporting & Compliance

Where does KRONOS rank in ESG?

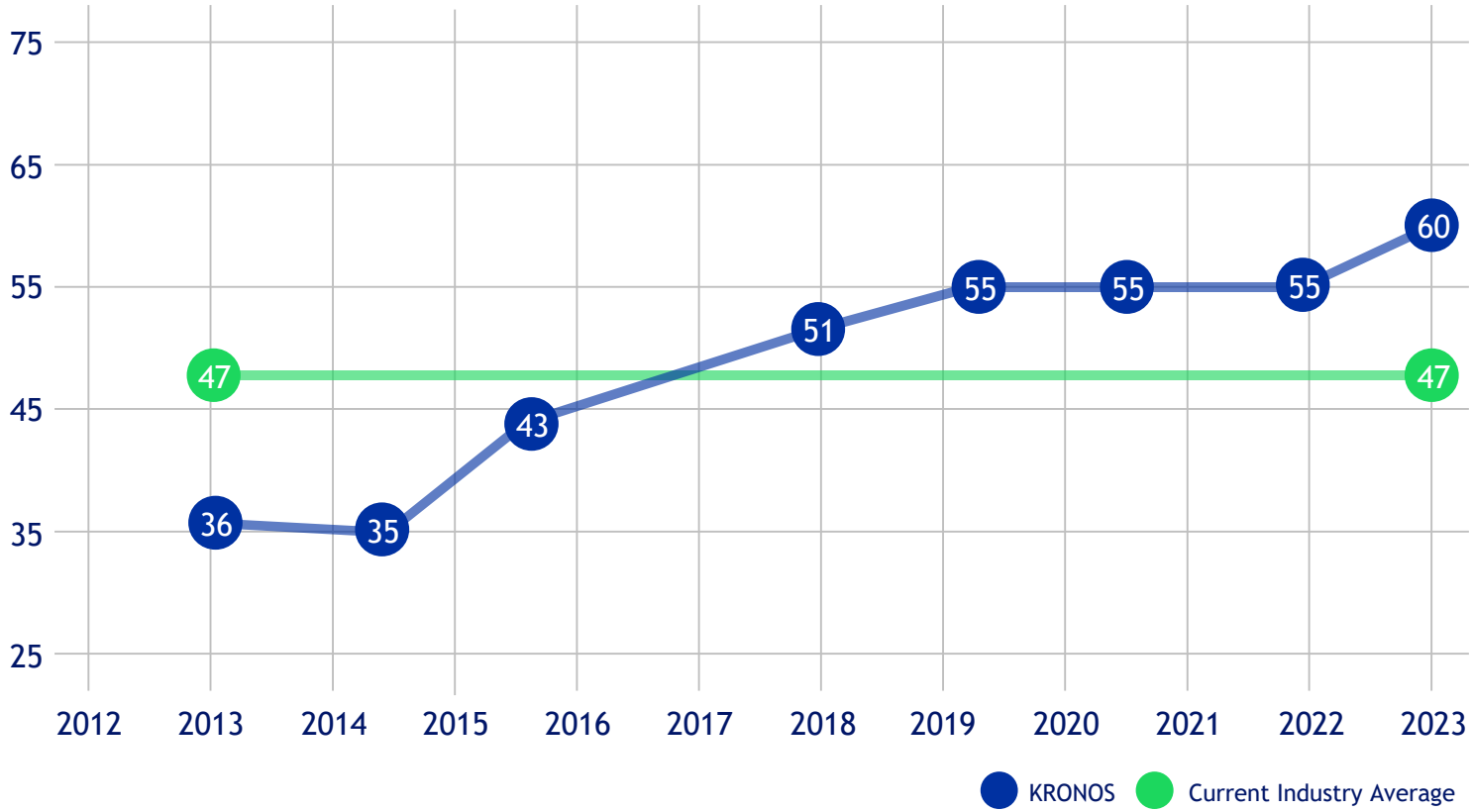
KRONOS partners with EcoVadis for annual assessment and benchmarking of our ESG performance in the areas of environment, labor and human rights, ethics, and sustainable procurement. We value this feedback from EcoVadis for the same reason our customers do - it provides a third-party, holistic sustainability rating covering a broad range of non-financial management systems.

A significant number of our customers and suppliers also team with EcoVadis, providing KRONOS the opportunity to perform consistent, robust, benchmarking and assessment of trading partners throughout our supply chain. We use this information to further enhance our focus areas and engagements with customers and suppliers.

While we remain focused on continuous improvement, we are proud of our consistent progress, which reflects the evolution of our ESG policies, programs, and performance. We openly share access to our EcoVadis Scorecard through the dedicated online portal and via our public KRONOS website.



EcoVadis Rating



KRONOS is included in the industry group "Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics, and synthetic rubber."

ESG Leadership

KRONOS has a robust ESG management approach based on a culture of compliance, management systems focused on continuous improvement, and ethics-oriented leadership. ESG elements permeate every corner of our company, and our management model has evolved to position ESG as a critical function within our organization. Now more than ever, we are focused on real change by establishing our Transformation by Innovation critical global mission. This mission focuses primarily on innovation of our own technologies and processes, while also positioning the company to take advantage of external opportunities as they become available. We continue to evolve in several key ESG areas as highlighted throughout this report and on our website. Our Chief Transformation Officer is responsible for managing our overall ESG programs and sits on the strategic leadership team guiding our Transformation mission, participating in setting company strategy, driving consequential change, and regularly communicating about ESG and Transformation matters with our Board of Directors.



“Meaningful and decisive change for the benefit of our stakeholders, our company, and our communities is at the core of our ESG mission, and KRONOS is proud of the progress we are making.”

Courtney Riley
Executive Vice President and Chief Transformation Officer



CORPORATE LEADERSHIP

Executive Team

- James M. Buch, President and CEO
- Brian W. Christian, EVP and Chief Operating Officer
- Benjamin R. Corona, President, Americas
- Rainer Gruber, EVP and Chief Manufacturing & Technology Officer
- Tim C. Hafer, EVP and Chief Financial Officer
- William Miller, VP Global Human Resources
- Courtney J. Riley, EVP and Chief Transformation Officer
- Alexis A. Thomason, VP and General Counsel
- Dennis Werner, President, EMEAA

Corporate Officers

- Kristin B. McCoy, EVP Global Tax
- Andrew B. Nace, EVP
- Amy A. Samford, EVP
- John A. Sunny, EVP and Chief Information Officer
- Bryan A. Hanley, SVP and Treasurer
- Bart W. Reichert, VP Internal Audit



BOARD OF DIRECTORS

- Loretta J. Feehan, Chair of the Board (Non Mgmt)
- Michael S. Simmons, Vice Chair (Mgmt)
- James M. Buch, Director (Mgmt)
- John E. Harper, Independent Director
- Meredith W. Mendes, Independent Director
- Cecil H. Moore, Jr., Independent Director
- General Thomas P. Stafford (retired), Independent Director
- R. Gerald Turner, Independent Director

Strong Governance Ensures a Culture of Compliance, Ethics and Integrity

KRONOS’s commitment to ethics and compliance starts with our Code of Business Conduct and Ethics, a standard that applies to all KRONOS employees worldwide.

The Code sets forth our expectation that employees conduct business in compliance with applicable laws and that our employees, suppliers, and business partners act ethically and with integrity and honesty at all times.

Our governance and ESG policies build upon these commitments, and in turn, our global and local guidelines, processes, and work procedures provide for compliance with these principles.



[Click here to view our published policies](#)

ESG at KRONOS

We have long been committed to conducting operations with high standards of social and environmental responsibility, practicing exemplary ethical standards, making safety a top priority, respecting and supporting our local communities, and continuously developing our employees.

Over the years we have built strong management systems designed to drive continuous improvement in priority ESG topic areas including regulatory compliance, incident investigation and corrective action, progress tracking against various goals and targets, and identification of areas to benefit from improvement and evolution.



ENVIRONMENTAL

At KRONOS, environmental compliance and stewardship is a primary area of focus. We are proud of our history of compliance, as well as our energy efficiency and waste minimization efforts.

It is our mission to continuously innovate to further minimize our environmental footprint.

- [Compliance Programs](#)
- [Energy Use & Decarbonization](#)
- [Circular Economy & KRONOS ecochem](#)
- [Natural Resources](#)



Click here to view our Facility Certifications



SOCIAL

Social responsibility is a critically important and constantly evolving concept encompassing a broad range of factors.

At KRONOS, we understand that social responsibility includes human rights, workplace health and safety, employee development, diversity and inclusion, product stewardship, and sustainable procurement.

- [KRONOSafe](#)
- [Product Safety & Stewardship](#)
- [Responsible Supply Chain](#)
- [KRONOS Cares](#)
- [Careers](#)



Click here to view our Safety Data Sheets



GOVERNANCE

KRONOS places immense value on ethical business practices and transparency. We hold our employees, Board of Directors, contractors, suppliers, and other stakeholders to the highest standards of integrity. Our commitment to fair and honest operations starts with our Board of Directors and ripples outward to touch every employee.

- [Leadership](#)
- [Cybersecurity](#)
- [Reporting Concerns & Complaints](#)
- [Our Culture & Values](#)



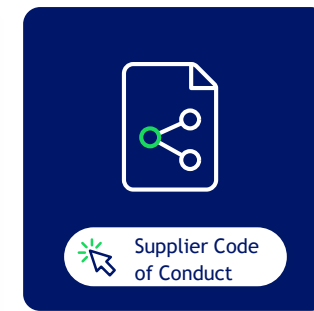
Click here to view our Governance Documents

Responsible Supply Chain

We are proud of the recent evolution of our sustainable procurement management system, designed to identify and assess ESG risks in our supply chain. KRONOS sources a variety of feedstock and other materials and services from multiple suppliers around the globe. Our supply chain plays a central role in our business and is a critical part of our company’s procurement, planning, manufacturing, and sustainability efforts. Through this management system, KRONOS seeks to identify ESG risks throughout our supply chain and address those risks fairly and equitably.

The backbone of our sustainable procurement program is our Supplier Code of Conduct, which all suppliers are asked to sign. The Supplier Code embodies the principles set forth in our Human Rights Policy, and Safety, Environment, Energy, and Quality (SEEQ) Policy, as they apply to our suppliers. Expectations of our suppliers include topics on ethics and integrity, labor and employment practices, protecting human rights, worker safety, environmental protection, and preventing discrimination.

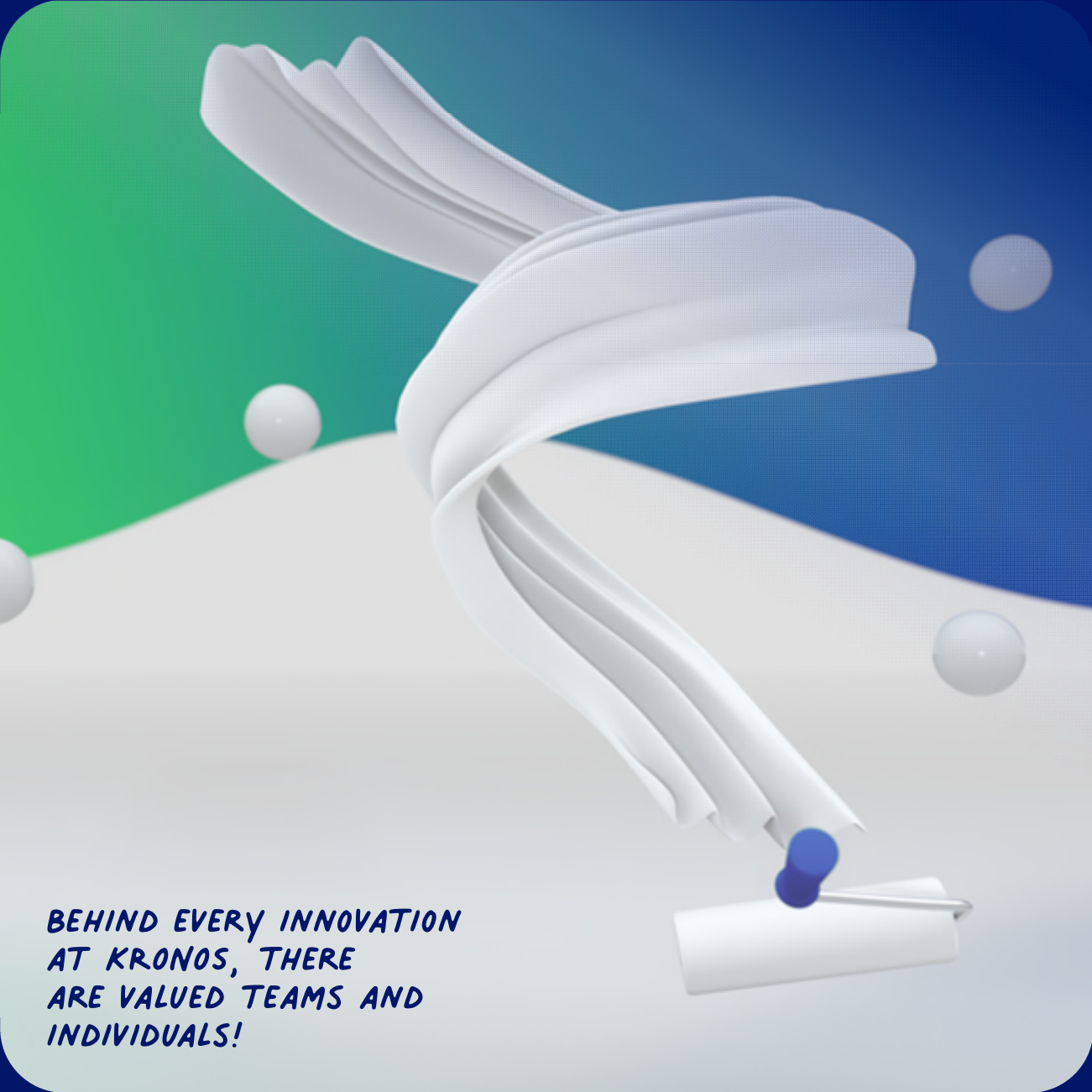
To gauge supplier adherence to the Code, we implement due diligence guidelines, procedures, and tools to identify potential supplier ESG risks. A high-level screening of all global suppliers identifies potential risk based on location, industry, and publicly available company details. From this, KRONOS identifies suppliers of higher risk and asks them to complete a robust third-party ESG assessment. KRONOS uses the outcome of such assessments to identify potential adverse impacts to be addressed through direct engagement with a supplier. While our program is relatively new, we have already made significant progress toward recognizing and addressing ESG risks in our supply chain.





Transformation

Our most ambitious program to date is our global Transformation by Innovation critical mission, which combines business and financial goals with ESG objectives ensuring that KRONOS is positioned for a sustainable future in every regard.



*BEHIND EVERY INNOVATION
AT KRONOS, THERE
ARE VALUED TEAMS AND
INDIVIDUALS!*

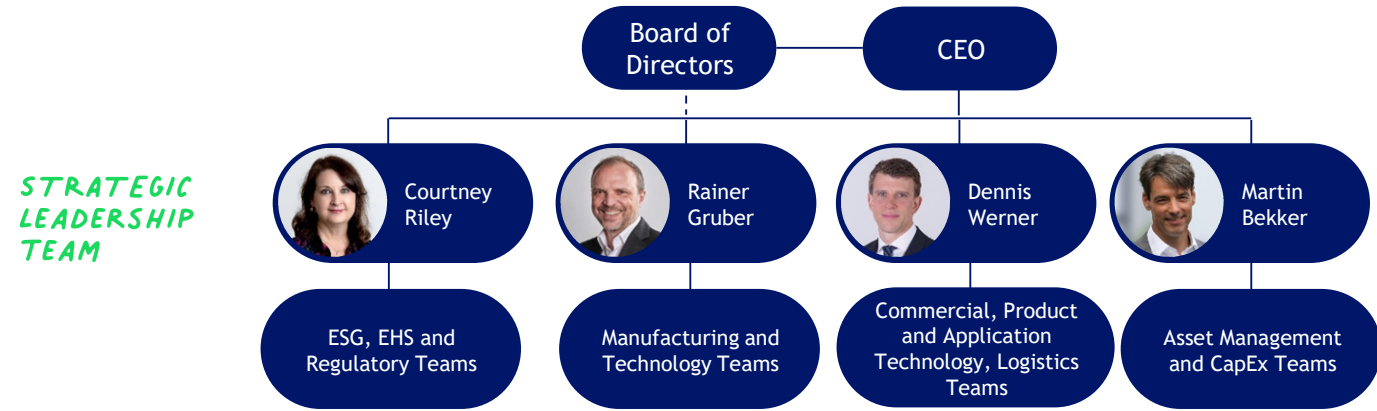
Transformation by Innovation

At KRONOS we are taking a holistic approach to ensuring the long-term sustainability of our business in every sense, including ESG. Through Transformation by Innovation, a critical global company mission, we seek to transform KRONOS for the future using our unique innovation capabilities.

This mission is the culmination of many years of innovative approaches and technical upgrades in various areas of our company, now brought under one critical mission. It is a focus of our entire company to bring cross-functional expertise and creativity from commercial, manufacturing, ESG, and energy under one umbrella.

It is led by four executive leaders committed to cross-functional innovation who not only bring a focus on traditional objectives such as greater profitability, cost efficiency, yield, quality, and resource utilization, but who will also work to decarbonize our operations and products, reduce waste, and evolve the company in other ESG areas to ensure our Bright future.

Transformation Leadership



Strategic Objectives



FINANCIAL PERFORMANCE

Drive down costs, optimize yields, and enhance profitability.



PERFORMANCE FOR CUSTOMERS

Develop new and enhanced products and services to meet evolving stakeholder needs.



BREAKTHROUGH TECHNOLOGIES AND PROCESSES

Utilize our unique expertise in our industry to evolve technologies and processes.



ESG FOR A SUSTAINABLE WORLD

Reduce reliance on fossil-fuels, work toward decarbonization and reduce environmental footprint.

Three Pillars of Transformative Innovation

Our Transformation by Innovation mission is organized around three priority pillars: Performance, Processes and Energy. Each pillar has its own objectives, but many of our priority projects drive progress toward achieving objectives in multiple pillars. We combine our expertise, experience, and creative ideas to leverage our talent and financial contribution to achieve maximum value.



PERFORMANCE

Our commercial performance teams are a vital pillar seeking to achieve these objectives:

- Digitize data and critical information to streamline customer communications and enhance internal planning
- Innovate our product portfolio to remove undesirable substances, minimize our environmental footprint, and contribute to evolving and necessary applications
- Maximize efficiency of our logistics operations
- Optimize distribution channels and third-party relationships



PROCESSES

KRONOS pioneered the commercial production and manufacture of TiO₂ in 1916 and remains a technology leader to this day. We seek to build upon this long-standing expertise to revolutionize certain areas of our manufacturing and related processes with these objectives:

- Optimize manufacturing equipment and procedures
- Achieve breakthrough innovation in long-standing process technologies
- Diversify sourcing and optimize efficient consumption of feedstocks and raw materials
- Manage CapEx to maximize benefits
- Reduce environmental footprint of operations



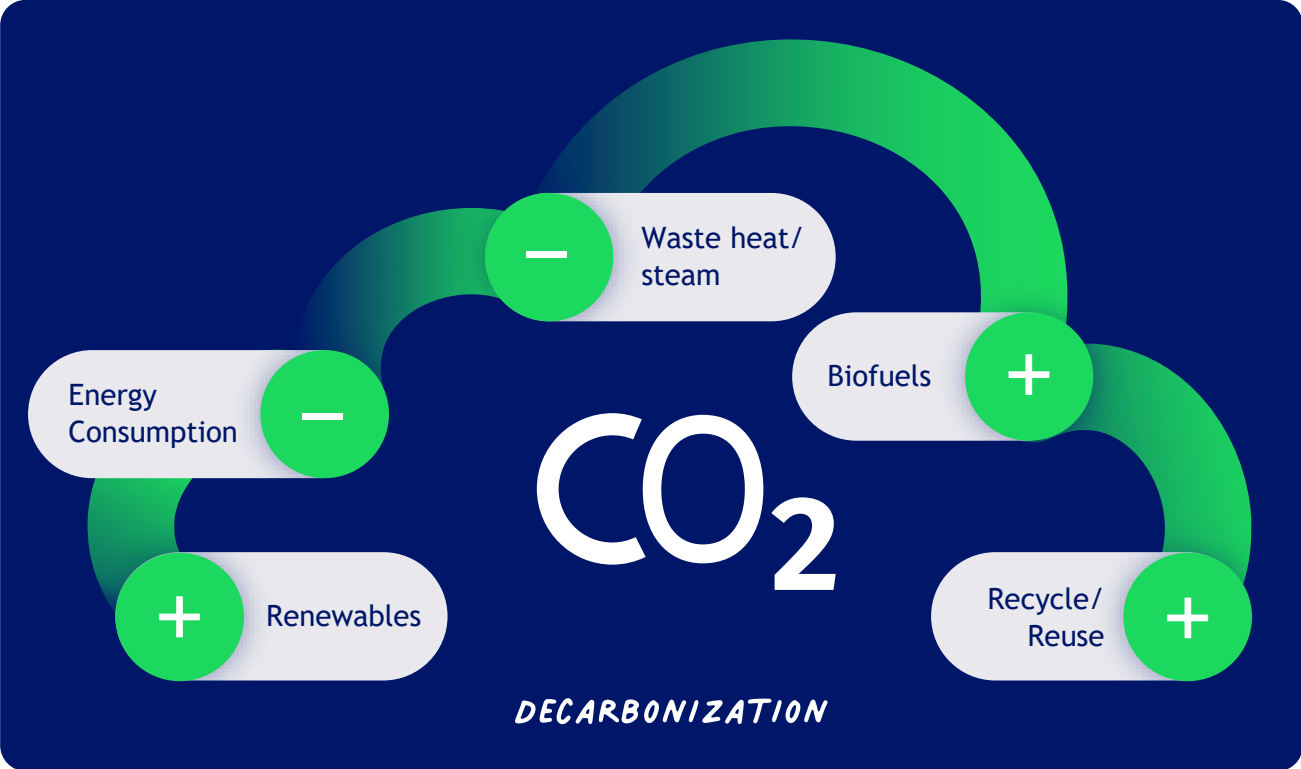
ENERGY

Energy is a major area of concern around the world. Our energy pillar includes ensuring sufficient and reliable supply of energy, and evolving energy consumption to address world values and goals including decarbonization and reduction of reliance on fossil fuels. A major pillar of KRONOS's Transformation mission centers around these energy objectives:

- Substitute fossil energy sources
- Reuse waste heat
- Increase efficiency
- Seek biofuel opportunities
- Electrify appropriate operations
- Reduce carbon emissions of our operations

ESG Is Embedded in our Transformation Mission

Realizing ESG improvements is a key strategic objective of our Transformation mission. We are selective in the actions and projects we pursue, choosing to focus on those that provide not only business, financial, and stakeholder advantages but also produce measurable ESG attributes and progress.



Innovation Successes

Many of our innovations, big and small, are already producing business and ESG results and will be the springboard to further improvements over time.



Reuse


Building upon our successful program in Europe, further innovations in the separation and beneficial reuse of unreacted raw materials in the CP process is a primary focus area to further reduce reliance on new raw materials, including petroleum-based coke.




Reducing steam & CO₂ emissions

Innovative process controls in finishing are now being applied to multiple KRONOS products showing promising results in reduction of steam and CO₂ emissions.

Transformation **X** Innovation



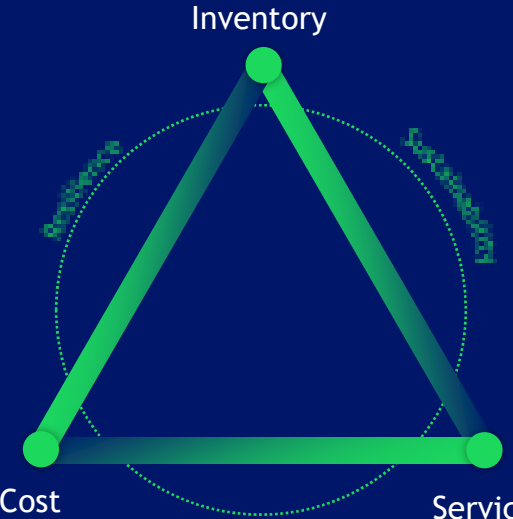
Improved gas distribution innovation in chlorination expected to improve yield and reduce loss of key raw materials.



ecochem[®]

KRONOS ecochem[®] continues to repurpose SP process iron salts into products beneficial to the environment and safety.

[Learn more](#)



Inventory

Cost

Service

Transformed product logistics management allows KRONOS to optimize miles traveled, carrier types and track and reduce ESG aspects in real time.

Our Products Bring Positive Attributes to ESG Applications



Enhancing the durability of automotive coatings

KRONOS 2310



 KRONOS 2310



Elevating energy efficiency through reflective coatings

KRONOS 2160, 2360



 KRONOS 2160  KRONOS 2360



Boosting the lifespan of construction materials

KRONOS 4320



 KRONOS 4320



Improving materials for architectural paints

**KRONOS 2190
TMP / TME-FREE**



 KRONOS 2190 TMP/TME-free

HOW OUR TiO_2 PIGMENTS CONTRIBUTE TO SUSTAINABILITY

We Seek Product Innovation Opportunities for the Future

Product Innovation is a key element of our Transformation mission. We seek to realize the ESG value of our existing products as well as to innovate and develop new products. We work with customers to identify new applications that marry the unique characteristics and high quality of our products with sustainability benefits.

We recognize the importance of evolving and innovating our products to meet the needs of our customers and stakeholders. As we look to the future, our Product Innovation Team is focused on meeting many critical ESG needs, including:

- Providing environmental footprint data
- Replacing undesirable product components
- Developing and offering low carbon and low energy products
- Recycling and recovery of base product materials to eliminate operating steps
- Innovating for sustainable packaging

We aspire to continuously innovate our products to not only achieve enhanced quality and characteristics, but also to enhance and improve long-term sustainability.





Culture and Values

In 2022 KRONOS embarked on an effort to engage employees across the company to refresh our brand. Our focus was not just to reaffirm the brand of our business, but to amplify our culture and current values as a company. In the following pages we highlight our global culture, which firmly embraces environmental stewardship, social responsibility, and ethical conduct.



*LISTENING IS THE KEY
TO UNDERSTANDING
THE NEEDS OF OUR PEOPLE*

Our Culture and Values Start at the Top

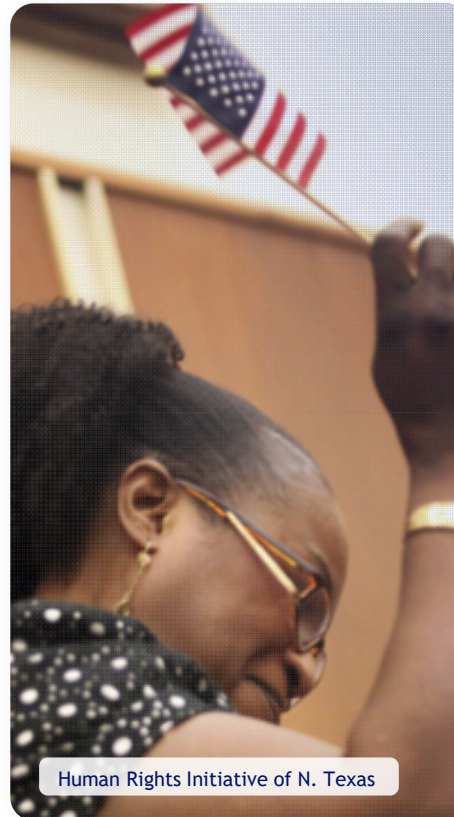
Throughout our long history, KRONOS has been committed to ESG values including the safety of our employees, social responsibility, environmental stewardship, and strong ethical governance. In support of this culture, KRONOS engages in local philanthropy and community volunteering across the globe through our KRONOS Cares program. In addition, our unique ownership structure has provided a steady culture of social responsibility and the ability to greatly amplify the financial impact of KRONOS’s philanthropy.

OUR UNIQUE OWNERSHIP SETS KRONOS APART AND AMPLIFIES OUR CULTURE OF CORPORATE RESPONSIBILITY.

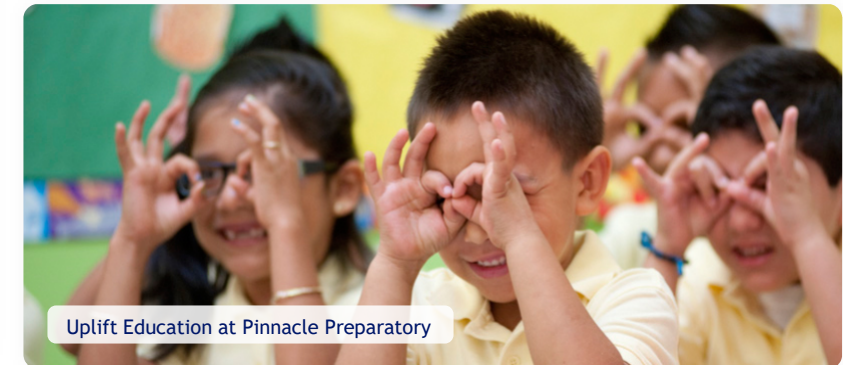
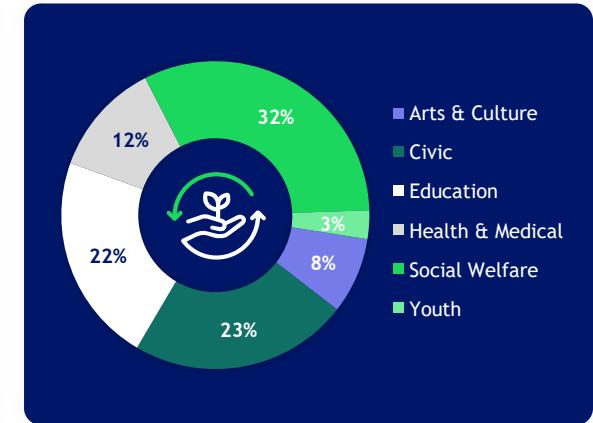
Mr. Harold Simmons owned KRONOS for many years until he passed away in 2013. Mr. Simmons personally set the tone for social responsibility with his passion for philanthropy. Through the Harold Simmons Foundation and our parent company, Contran Corporation, Mr. Simmons established a strong tradition of giving back to our local communities, which continues today under our current Simmons family ownership. Through the ongoing mission of the Harold Simmons Foundation and Contran, our strong history of financial returns has allowed us, through our owners, to contribute to numerous organizations throughout our community, including those supporting civic affairs, education, health and medical, social welfare, and youth programs.



Harold C. Simmons Comprehensive Cancer Center at UT Southwestern Medical



Human Rights Initiative of N. Texas



Uplift Education at Pinnacle Preparatory

Our Cultural Values

We recognize that social responsibility is a critically important and constantly evolving concept that encompasses a broad range of factors. At KRONOS, social responsibility includes human rights, workplace health and safety, employee development, diversity and inclusion, and product stewardship. We value our presence within the communities where we live and work and actively support our communities through our KRONOS Cares initiative of social investment and employee volunteerism. We confirm our commitment in these areas by adhering to our cultural values of teamwork, leadership, communication, and customer focus.



TEAMWORK

Our strength is in knowing that when we work together we build better together, for each other and for our customers.



LEADERSHIP

We improve at every opportunity, working to bring out the best in each other and to achieve the best results.



COMMUNICATION

Everyone here has a voice and every role here enjoys equal respect.



CUSTOMER FOCUS

Our customers' success is our success; every decision is made with their best interests in mind.

Three Key Qualities Define Us

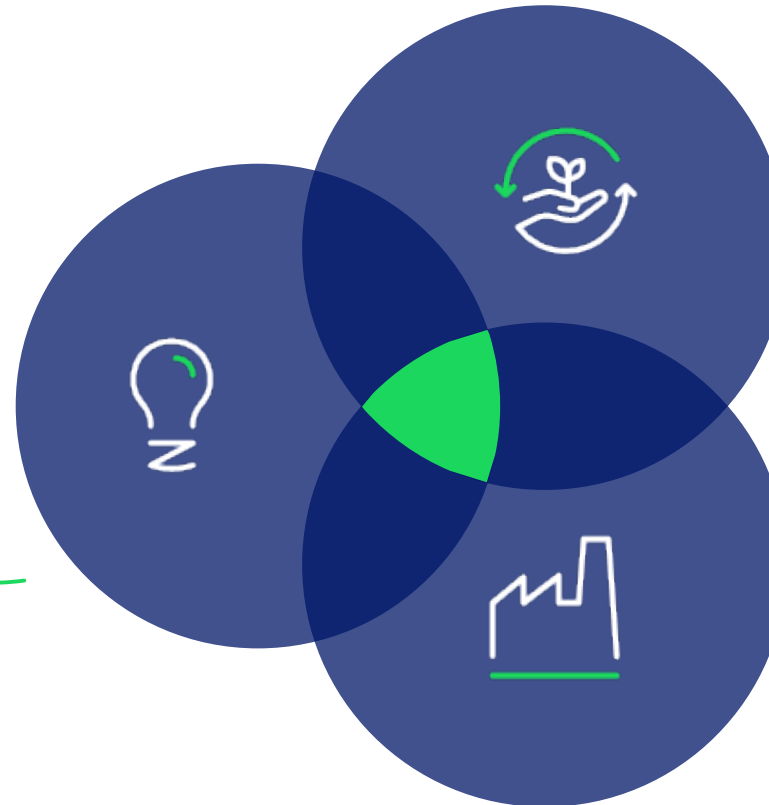
Our cultural values come together with our business objectives to form our key business qualities. Since we developed the first commercial process for making TiO₂ in 1916, our journey has been fueled by innovation. Today we remain true to our principles, as a forward-thinking global company providing the very best chloride and sulfate TiO₂.

We have a relentless drive to improve our processes, our products and our service to our customers. We are investing in new technologies, in our culture, and in ways of working smarter. Our own people choose to stay with KRONOS for years, building their expertise, strengthening our business, and becoming part of our global team.

These strong and long-lasting relationships are key to how we add value and provide the quality services and proven products our customers need. We believe we can make the future brighter by being a more sustainable business in every sense: for the environment as well as for our customers, our people, and our communities.

FORWARD-THINKING

We personify a relentless drive for advancement, delivering the best TiO₂ products for our customers by working hard and being hands-on.



CARING

We care for our customers by understanding their needs and for each other by listening and showing respect. And we are always striving to make a positive impact for our society and environment.

LONG-STANDING

Our long track record of leadership in our markets, our products, processes and services is built upon creating innovative, sustainable solutions, and by acting with integrity as a trusted partner.

People Are at the Heart of KRONOS


AUD BRIT – MINE OPERATOR, NORWAY

“I love to work for KRONOS, because I enjoy the duties and get along well with my colleagues. Driving large mining trucks is exciting but also at times challenging.”



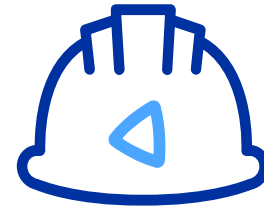
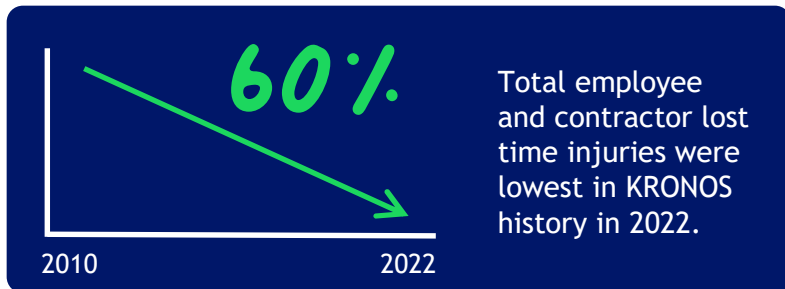
CEYLAN – PRODUCTION, BELGIUM

“When I stepped into the temp office in 2010, I was very determined. I wanted to work in shifts, in an international company that invests in their employees. And now, 12 years later, I can say it all worked out very well! I am a proud KRONOS ambassador that still loves to come to work every day.”

 [Click here to meet more people at KRONOS](#)




KRONOSafe

The safety of our people is a top priority. Despite our existing strong safety programs and tools, we continue to experience a low number of preventable injuries. Our aim is zero injuries, so in 2020, KRONOS initiated KRONOSafe, a new and innovative long-term global approach to safety improvement. We will not be satisfied until we achieve zero injuries at every facility, but this goal can only be realized through a company-wide attitude and culture where each employee, regardless of position or title, takes ownership and responsibility for their own safety and safety of others around them. A strong safety culture requires leadership, diligence, honest communication, and a strong sense of community in the workplace. To reach zero incidents, these must become second nature to everyone. While we see good progress toward our goal, we are relentless in pursuit of “Go for Zero.”



KRONOS Safe
GO FOR ZERO

How we stay safe

-  Clear Safety Rules and Work Procedures
-  Strong Global & Local HSE Teams
-  Health & Safety Management Systems
-  Safety Culture Guidelines
-  Global KRONOSafe Initiatives



We Invest in Our Communities Through KRONOS Cares

KRONOS Cares is a growing key company initiative that provides employees with opportunities to become more involved in their local communities. At KRONOS, we want employees to have a deep level of attachment to the causes and organizations we support. By investing and caring for our communities, we are providing lasting benefits that will continue to enhance the well-being of local stakeholders for years to come.

The initiative focuses on social responsibility by giving back through volunteerism and monetary donations. Each operating location is allocated a KRONOS Cares budget to support local efforts most important to our employees. To truly be integrated with our individual communities around the globe, we intentionally do not set specific parameters for charitable giving budgets so that employees at each location feel empowered to get involved with local organizations that are most meaningful for them.



KRONOS Cares
GIVING BACK

What we do



Think global,
act local



Embody “Brighter
Together”



Care for our
community

Volunteerism Across the Globe

In addition to financial contributions to worthy causes across our locations, our employees donate their time to raise additional funds and to interact directly with their local communities. Volunteerism is a significant part of our culture. We continue to be amazed by our employees' drive to identify organizations that foster connection and community impact.

Our employees work diligently throughout each year to give back in small and large ways. To highlight a few local events from 2021 & 2022:

- Leverkusen, Germany: Employees cleaned local ponds to enhance ecology and enjoyment of nature in partnership with Nature Asset.
- Nordenham, Germany: Employees inspected bicycles, made repairs, and provided high-visibility vests to promote bike safety at a local school.
- Norway: Volunteers partnered with The Children's Station Support, supporting families with young children who are vulnerable to substance abuse, to lead fun activities for children at a local festival.
- Canada: Colleagues cycled to promote healthy lifestyles and raise funds to renovate a local elementary schoolyard.
- Belgium: Volunteers participated in "Rock for Specials," supporting people with intellectual disabilities.

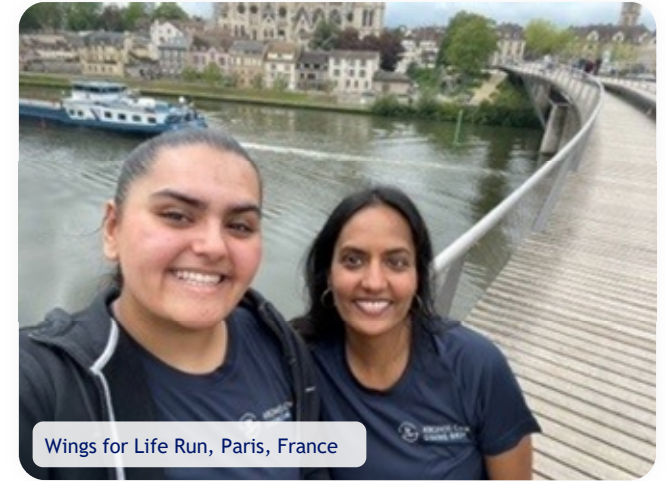
In addition, KRONOS colleagues all over the world participated in a global effort supporting The Wings for Life World Run to raise funds for spinal cord research. Colleagues in every location ran at the same time, truly embodying Brighter Together.



Nature Asset, Leverkusen, Germany



School Bike Support, Nordenham, Germany



Wings for Life Run, Paris, France



The Children's Station Support Fredrikstad, Norway



École J.-P.-Labarre Support, Varennes, Canada



Rock for Specials, Langerbrugge, Belgium



Learn more about the KRONOS Cares giving-back approach

[Click here](#)



Metrics

KRONOS tracks key performance indicators in areas of ESG worldwide.



*WE ARE ON TRACK AND FULLY
CHARGED TO REACH OUR MISSION.*

Production and Green House Gas (GHG) Emissions



Production	2020	2021	2022	Notes
Titanium Dioxide mt	517,000	545,000	492,000	TiO ₂ production only, co-products not included



CO ₂ e ¹	2020	2021	2022	Notes
Scope 1, mt CO ₂ e ²	625,476	652,173	601,052	Local 3rd-party verified
Scope 2, mt CO ₂ e ³	198,192	187,165	159,806	-

Life Cycle Inventory⁴ [Follow this link for additional details on how to obtain the data set.](#)

- 1 Covers five wholly-owned TiO₂ production plants and includes data from “cradle to gate” (raw materials until the final product leaves our plant).
- 2 Each TiO₂ plant determines Scope 1 emissions using metering, invoicing and emission factors calculated per local regulatory and GHG cap-and-trade requirements. Scope 1 emissions are verified by third-parties per local law.
- 3 Scope 2 emissions calculated with the assistance of a third party using external emission factors based on the type, source, and location of supplier generally aligned with the GHG Protocol; sources believed to be de minimis were not included.
- 4 A life cycle inventory (LCI) is currently being prepared by a third-party covering reporting year 2021. LCI data from 2018 is available for the TiO₂ industry through TDMA at www.tdma.info. The LCI captures information from “cradle to gate.”

Important Information: Unless otherwise noted, these metrics cover our five wholly-owned titanium dioxide operating facilities. There are many different and competing methodologies, standards and assumptions for calculating ESG metrics, which vary within our industry and across the multiple jurisdictions in which we operate. KRONOS’s metrics were developed for internal benchmarking and continuous improvement purposes and are not intended to be directly comparable to other businesses or companies. Unless otherwise noted, the metrics have not been third-party verified or audited and are based on our current knowledge as well as third-party information as of the date of this document. Methodologies, standards and assumptions for metrics and tracking continue to evolve and we do not warrant or guarantee the accuracy or compliance of our metrics with any standard, methodology, regulation, or legislation, nor does this information create any contractual rights between KRONOS and the recipient.

Energy



Purchased Energy ¹	2020	2021	2022	Notes
Electricity, GJ	829,875	788,360	718,103	
Steam, GJ	1,678,752	1,620,508	1,401,077	
Natural Gas, GJ	7,431,733	7,292,808	6,484,338	
Renewable, %	11%	9%	11%	



Process Energy Intensity ²	2020	2021	2022	Notes
Chloride Process, GJ/mt TiO ₂	4.6	4.4	4.4	
Sulfate Process, GJ/mt TiO ₂	23.4	21.9	22.1	
Finishing, GJ/mt TiO ₂	9.5	9.0	9.5	

¹ Quantities based on utility provider invoicing. Renewable composition provided by utility provider. Renewable percentage for 2022 remains an estimate until data are finalized in November.

² Energy intensity is an estimate of the electricity, steam, and natural gas consumed to produce/finish one metric ton of TiO₂. Consumption at each plant is based on metering at various locations (which vary by plant) and provider invoices.

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Environmental



Compliance	2020	2021	2022	Notes
Reportable Environmental Incidents ¹	17	13	7	All media
Fines Paid to Regulators	0	0	0	



Water Use ²	2020	2021	2022	Notes
Water withdrawn, ML	51,916	50,672	43,143	Surface (metered) Purchased (metered/invoiced)
Water consumed, ML	1,294	1,390	1,497	
Water returned, ML	98%	97%	97%	



Waste ³	2020	2021	2022	Notes
Hazardous, mt	298,362	320,014	331,614	Defined by local law
Non-hazardous, mt	282,868	280,398	250,398	Defined by local law
Total Recycled, mt	23%	26%	25%	

¹ Reportable releases to air/water/noise/odor/waste/other media, including minor deviations.

² Withdrawal, consumption and return volumes based on plant water balances derived from metering and provider invoices.

³ Waste classification is based on local regulations applicable to each TiO₂ plant and varies by plant. Volume of recycled waste is based on reuse reported by customers and/or verified by disposal companies.

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Sustainable Procurement



ESG Risk Assessments

2022

Notes

EcoVadis IQ Screened¹

99% (4,649 suppliers)



Supplier Code of Conduct (SCOC)

July 2023

Notes

% Suppliers with Signed/Verified SCOC²

81%

Formal tracking began in 2023



Third-party ESG Rating

July 2023

Notes

% Suppliers with ESG Rating³

70%

Formal tracking began in 2023

- ¹ EcoVadis IQ is a third-party resource that screens suppliers for ESG risks using diverse data sources, including compliance information, country conditions, procurement data, scorecards, and other data.
- ² Percentage of total annual spend with suppliers who have signed the KRONOS SCOC or have provided their own verified documentation.
- ³ Percentage of total annual spend with suppliers who have an EcoVadis or other accepted third party ESG rating.

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Safety



Lost Time TFR ¹	2020	2021	2022	Notes
KRONOS Employees	1.60	1.08	1.01	
Contractors	1.99	2.17	1.84	



Fatalities	2020	2021	2022	Notes
	0	0	0	



HAZOP Studies ²	2020	2021	2022	Notes
Assessments	17	21	14	



Product Safety & Stewardship ³	2020	2021	2022	Notes
Individual Information Responses	1,508	1,563	1,520	

- 1 Each TiO₂ plant is subject to local laws and regulations dictating what injuries must be recorded and reported, which may differ from location to location and result in different methods of injury rate calculation. For internal global tracking, benchmarking, and identification of opportunities for improvement, we count all injuries resulting in lost time and apply a US-based injury frequency rate calculation to arrive at a global total frequency rate, expressed as the number of lost time incidents occurring at our operating locations per 200,000 working hours; this internal safety metric may not be directly comparable to a recordable incident rate calculated under US law.
- 2 Hazard and Operability (HAZOP) Studies are conducted to identify potential process-related hazards so they can be mitigated to avoid associated employee/contractor injuries and/or operational losses. HAZOP studies are reviewed/updated at least once every five years or otherwise as needed.
- 3 Product stewardship information by product grade is available to customers by contacting productstewardship@kronosww.com.

Important Information: Unless otherwise noted, these metrics cover our five wholly-owned titanium dioxide operating facilities. There are many different and competing methodologies, standards and assumptions for calculating ESG metrics, which vary within our industry and across the multiple jurisdictions in which we operate. KRONOS’s metrics were developed for internal benchmarking and continuous improvement purposes and are not intended to be directly comparable to other businesses or companies. Unless otherwise noted, the metrics have not been third-party verified or audited and are based on our current knowledge as well as third-party information as of the date of this document. Methodologies, standards and assumptions for metrics and tracking continue to evolve and we do not warrant or guarantee the accuracy or compliance of our metrics with any standard, methodology, regulation, or legislation, nor does this information create any contractual rights between KRONOS and the recipient.

Employees



Our People¹

	2020	2021	2022	Notes
Total Employees	2,217	2,260	2,276	



Diversity and Inclusion¹

	2020	2021	2022	Notes
Leadership female/male	45/174	45/174	39/191	
Employee base female/male	291/1,926	297/1,963	297/1,979	
Age 29 and under female/male	20/204	26/240	25/274	
Age 30-39 female/male	50/321	47/324	52/334	
Age 40-49 female/male	61/423	66/424	69/418	
Age 50 and above female/mal	160/978	158/975	151/953	



Investments in Communities

	2020	2021	2022	Notes
KRONOS Cares	\$359,650 ²	\$391,700	\$356,250	

¹ Includes all KRONOS employees in all operating locations.

² Includes all KRONOS operating locations; in 2020 an additional \$214,800 was donated for Hurricane Laura and Coronavirus relief efforts.

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GRI Index

The Global Reporting Initiative (GRI) disclosure framework is an internationally recognized set of indicators for economic, environmental and social aspects of business performance. We use our GRI Index to set forth how the GRI framework has been applied to our ESG reporting process, in alignment with global best practices. Our GRI Index provides our stakeholders with references where they can locate content of interest, and we also provide direct answers to specific indicators covered in the GRI framework.



**GLOBAL REPORTING
INITIATIVE (GRI)**

GRI Index

No.	Disclosure	Response (Full or Partial)
Governance Topics		
2-1	Organizational details	Global Presence, p. 6; 2022 10-K
2-2	Entities included	All titanium dioxide manufacturing sites under KRONOS's operational control.
2-3	Reporting period, frequency, and contact point	Reporting period is 2021-2022; reporting frequency is biennial; publication date is September 2023; contact point is Courtney Riley, Chief Transformation Officer, sustainability@kronosww.com
2-4	Restatements of Information	None
2-5	External Assurance	KRONOS did not seek external assurance for this report.
2-6	Activities, value chain, and other business relationships	2022 10-K
2-7	Employees	Metrics p. 36; 2022 10-K; kronosww.com
2-9	Governance structure	ESG Leadership, p. 11; 2022 Proxy Statement; kronosww.com
2-10	Nomination and selection of the highest governance body	2022 Proxy Statement
2-11	Chair of the highest governance body	2022 Proxy Statement
2-12	Role of the highest governance body in overseeing the management of impacts	ESG Leadership, p. 11; Transformation Leadership, p. 16; 2022 Annual Report
2-13	Delegation of responsibility for managing impacts	ESG Leadership, p. 11; Transformation Leadership, p. 16; 2022 Annual Report
2-14	Role of the highest governance body in sustainability reporting	This report is subject to approval by the CEO and Chief Transformation Officer.
2-15	Conflicts of interest	2022 Proxy Statement
2-16	Communication of critical concerns	2022 Proxy Statement
2-17	Collective knowledge of highest governance body	ESG Leadership, p. 11; 2022 Proxy Statement; kronosww.com
2-18	Evaluation of the performance of the highest governance body	2022 Proxy Statement

GRI Index

No.	Disclosure	Response (Full or Partial)
Governance Topics		
2-19	Remuneration policies	2022 Proxy Statement
2-20	Process to determine remuneration	2022 Proxy Statement
2-21	Annual total compensation ratio	2022 Proxy Statement
2-22	Statement on sustainable development strategy	Tomorrow Together, p. 3; ESG Leadership, p. 11
2-23	Policy commitments	kronosww.com
2-24	Embedding policy commitments	Strong Governance, p. 12; kronosww.com
2-25	Process to remediate negative impacts	2022 Proxy Statement
2-26	Mechanisms for seeking advice and raising concerns	2022 Proxy Statement; kronosww.com
2-27	Compliance with laws and regulations	ESG at KRONOS, p. 13; Metrics, p. 33; 2022 10-K; kronosww.com
2-28	Membership associations	kronosww.com
2-29	Approach to stakeholder engagement	Our ESG Priorities, p. 9
2-30	Collective bargaining agreements	2022 10-K
Material Topics		
3-1	Process to determine material topics	Our ESG Priorities, p. 9
3-2	List of material topics	Our ESG Priorities, p. 9
3-3	Management of material topics	ESG Leadership, p. 11; Transformation Leadership, p. 16; 2022 Annual Report

GRI Index

No.	Disclosure	Response (Full or Partial)
Economic Topics		
201-1	Direct economic value generated and distributed	2022 Proxy Statement, pp. 19-20; 2022 10-K, p. F-7 & pp. F22-F28
204-1	Procurement practices	Responsible Supply Chain, p. 14
205-1	Anti-corruption	Strong Governance, p. 12; Code of Business Conduct and Ethics
206-1	Anti-competitive behavior	Strong Governance, p. 12; Code of Business Conduct and Ethics
207-1	Tax	2022 10-K; kronosww.com
Materials, Environmental Topics		
303-1	Materials used by weight or volume	2022 10-K
Energy, Environmental Topics		
302-1	Energy consumption within the organization	Transformation, pp. 15-19; Metrics, p. 32
302-3	Energy intensity	Metrics, p. 32
302-4	Reduction of energy consumption	Transformation, pp. 15-19; Metrics, p. 32
Water, Environmental Topics		
303-1	Interactions with water as a shared resource	kronosww.com
303-3	Water withdrawal	Metrics, p. 33
303-4	Water discharge	Metrics, p. 33
303-5	Water consumption	Metrics, p. 33

GRI Index

No.	Disclosure	Response (Full or Partial)
Biodiversity, Environmental Topics		
304-3	Habitats protected or restored	ESG at KRONOS, p. 13; kronosww.com
Emissions, Environmental Topics		
305-1	Direct (Scope 1) GHG emissions	Transformation, pp. 15-19; Metrics, p. 31
305-2	Energy indirect (Scope 2) GHG emissions	Transformation, pp. 15-19; Metrics, p. 31
305-5	Reduction of GHG emissions	Transformation, pp. 15-19; Metrics, p. 31
Effluents and Waste, Environmental Topics		
306-2	Management of significant waste-related impacts	ESG at KRONOS, p. 13; kronosww.com
306-3	Waste generated	Metrics, p. 33
306-4	Waste diverted from disposal	Metrics, p. 33
306-5	Waste directed to disposal	Metrics, p. 33
Supplier Environmental Assessment, Environmental Topics		
308-2	Suppliers screened using environmental criteria	Responsible Supply Chain, p. 14; Metrics, p. 34

GRI Index

No.	Disclosure	Response (Full or Partial)
Occupational Health and Safety, Social Topics		
403-1	Occupational health and safety management system	KRONOSafe, p. 27; kronosww.com
403-2	Hazard identification, risk assessment, and incident investigation	KRONOSafe, p. 27; kronosww.com
403-3	Occupational health services	KRONOSafe, p. 27; kronosww.com
403-4	Worker participation, consultation, and communication on occupational health and safety	KRONOSafe, p. 27; kronosww.com
403-5	Worker training on occupational health and safety	KRONOSafe, p. 27; kronosww.com
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	KRONOSafe, p. 27; kronosww.com
403-9	Work-related injuries	Metrics, p. 35
Training and Education, Social Topics		
404-2	Programs for upgrading employee skills and transition assistance program	kronosww.com
Local Communities, Social Topics		
413-1	Operations with local community engagement, impact assessments, and development programs	KRONOS Cares, pp. 28-29; Metrics, p. 36
Supplier Social Assessment, Environmental Topics		
414-2	Suppliers screened using social criteria	Responsible Supply Chain, p. 14; Metrics, pp. 34

GRI Index

No.	Disclosure	Response (Full or Partial)
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Customer Health and Safety

416-1	Assessment of the health and safety impacts of product and service categories	kronosww.com; Metrics, p. 35
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Marketing and Labeling

417-1	Requirements for product and service information and labeling	kronosww.com; Metrics, p. 35
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KRONOS ESG

TOMORROW TOGETHER



 ESG Website



 Virtual Showroom