

2022

Review on Performance, People, and Planet



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The Integrated Report consists of five reports that cover important aspects of our business. They can be read in conjunction with each other. Together, the reports provide a full picture of our ability to create long-term value.

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The Review on Performance, People, and Planet is integral to Clariant's Reporting Hub 2022, providing comprehensive information about Clariant's long-term value creation. The review comprises a discussion of the company's material topics regarding Performance, People, and Planet. It has been written in accordance with the GRI standards. In addition, the review is supplemented by information related to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) as well as information suggested in the SASB standards for the chemical industry.

Performance

»Our portfolio has proven to be resilient as it addresses key growth trends like bio-based products, decarbonization, and circularity.«

Conrad Keijzer, CEO

GROWTH ACHIEVED IN 2022

24 %
Sales growth

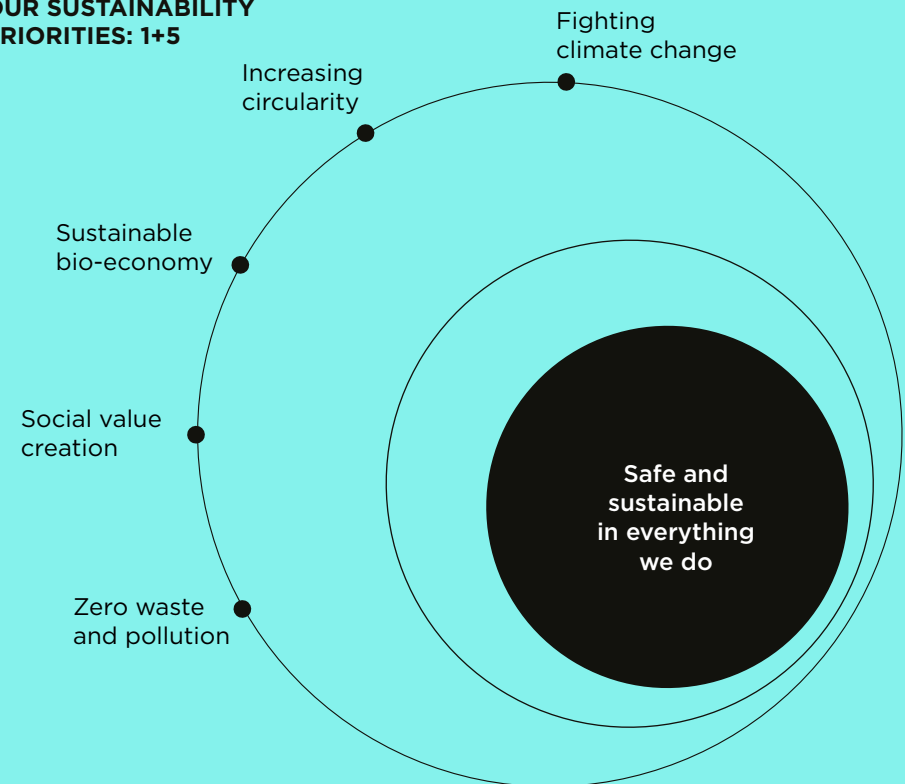
1024
EBITDA in CHF m

19.7 %
EBITDA margin

>5.5 %
Growth through innovation

8.8 %
Sales from EcoTain® products

OUR SUSTAINABILITY PRIORITIES: 1+5



OUR SDG PRIORITIES



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BUSINESS GROWTH AND PROFITABILITY

For Clariant, business growth refers to growth in production, services, and revenue. Profitable growth is the basis for the generation of economic value for shareholders, employees, customers, suppliers, local communities, and other stakeholders.

In 2021, Clariant introduced its purpose-led strategy – »Greater chemistry – between people and planet« – based on customer focus, innovative chemistry, leading in sustainability, and people engagement. The company also outlined financial targets for 2025 and non-financial targets for 2030 that reflect Clariant's ambition to achieve top-quartile results in specialty chemicals in terms of growth, profitability, sustainability, and people.

The acquisition of BASF's US-based Attapulgit business assets was concluded in October 2022. This transaction will support the company's path towards reaching its targets and will improve the EBITDA margin profile of Clariant's Functional Minerals business.

Although business growth and profitability are a shared responsibility between all management functions, Clariant's Board of Directors defines the Group's overall direction. It has delegated the executive management of this strategy to the Executive Steering Committee (ESC), which replaced the former Executive Committee as of 1 July, 2022. According to the new leadership model, the Executive Steering Committee comprises the CEO, CFO, and the presidents of the three new business units. It is responsible for implementing, monitoring, and improving the financial and operational management strategy. Clariant's Strategic Management Process (SMP) ensures that each business unit executes the corporate strategy.

Read more about the SMP in the chapter → **Growth Opportunities from Sustainable Products and Solutions.**

Please consult the Business Report for in-depth information on the → **new organizational structure.**

PERFORMANCE OVERVIEW

	Continuing operations	Discontinued operations	Total 2022	2021
Sales (in CHF m)	5 198	0	5 198	5 284
EBITDA (in CHF m)	810	214	1 024	822
EBITDA before exceptional items (in CHF m)	893	8	901	898
EBITDA margin (%)	15.6	n.a.	19.7	15.6
EBITDA margin before exceptional items (%)	17.2	n.a.	17.3	17.0
EBIT (in CHF m)	72	214	286	553
EBIT before exceptional items (in CHF m)	617	8	624	630
Net result (in CHF m)	-101	217	116	373
Basic earnings per share (in CHF)	-0.40	0.66	0.26	1.04
Diluted earnings per share (in CHF)	-0.40	0.66	0.26	1.04
Operating cash flow (in CHF m)	n.a.	n.a.	502	363
Return on invested capital (ROIC) (%)	1.5	n.a.	n.a.	n.a.
Investment in property, plant, and equipment (in CHF m)	n.a.	n.a.	209	357
Personnel expenditures (in CHF m) ¹	n.a.	n.a.	1 018	1 066
Total assets (in CHF m)	n.a.	n.a.	6 188	7 038
Equity (in CHF m)	n.a.	n.a.	2 513	2 544
Equity ratio (%)	n.a.	n.a.	40.60	36.10
Net debt (in CHF m)	n.a.	n.a.	750	1 535
Gearing (%)	n.a.	n.a.	30.0	60.0
Growth through innovation (%) ²	>5.5	n.a.	>5.5	>3.5
Research & Development expenditures (in CHF m)	160	2	162	167
R&D spend of sales (%)	3.1	n.a.	3.1	3.2
Patents (year-end)	>4 300	n.a.	>4 300	>5 100
Active innovation projects	>330	n.a.	>330	325
Of which Class 1 Projects with double-digit million sales potential or of strategic relevance	>60	n.a.	>60	65
Scientific collaborations	>65	n.a.	>65	80
Clariant Innovation Centers	3	n.a.	3	3
Research & Development Centers and dedicated Technology Centers	10	n.a.	10	10
Technical Centers	>45	n.a.	>45	45
Production (in m t)	3,80	n.a.	3,80	4,43
Production sites	70	n.a.	70 ³	79
Countries with production facilities	24	n.a.	24	27
Raw material procurement (in CHF m)	2 258	n.a.	2 258	2 352
Raw materials procured (in m t)	3.5	n.a.	3.5	3.67
Raw material supply spend covered by sustainability evaluations (%)	89.2	n.a.	89.2	86.9

¹ Including own employees and external staff

² Contains the contribution to growth of the innovation portfolio from both Top Line Innovation and Life Cycle Innovation. Potential cannibalization of existing sales by Life Cycle Innovation has not been excluded.

³ Two sites that are not in the reporting scope are excluded from the count

Please consult the Business Report for in-depth information on → **Clariant's targets for growth and profitability.**

Please consult the Business Report for in-depth information on how → **Clariant's three business areas contribute to the company's growth and profitability.**

Please consult the → **Financial Report** for in-depth information on 2022 sales and earnings figures.

Please consult the → **Compensation Report** for in-depth information on incentives for Clariant's Management to achieve the corporate targets.

ENGAGING IN GROWING AND EMERGING MARKETS

Clariant engages in growing and emerging markets, particularly in China and India. These markets enhance Clariant's global growth potential. Oxford Economics forecasts that the nominal CAGR of the specialty chemicals sector will be 6.2% in advanced economies, but 8.6% in China and 9.7% in India. Clariant also plans to allocate more capital expenditure to growing regions – like Asia and North America – in the years up to 2025. For example, in 2022, the company announced two new investment projects in Daya Bay (China) for Care Chemicals and Additives, summing up to CHF 120 million.

By engaging in growing and emerging markets, Clariant develops deeper customer relationships on a global basis. Greater global market penetration also helps to innovate in accordance with local customer needs and to outcompete local rivals.

Clariant's customers in India and China are located in various steps of the value chain: Business Unit Catalysts sells mainly to base chemical and polymer producers. As China and India enhance their domestic production capacities, Clariant catalysts will be in great demand there. Business Area Care Chemicals sells largely to producers of consumer applications. Business Area Natural Resources helps industrial customers to meet changing consumer demands, for example, with adsorbents for edible oil purification. In this sector, Asia-Pacific is one of the company's major markets. Additives like Exolit® are used in energy storage systems of electric vehicles or for fire security of 5G technology.

In 2022, Clariant's sales in Asia-Pacific remained resilient and grew by 21% in local currency while recording notable growth in India (21%) and China (23%). Sales in China alone amounted to CHF 572 million, which represented approximately 11% of Clariant's global continuing business sales. Latin America also increased revenues by 31% in local currency. Following the positive trend of the other regions already mentioned, Middle East and Africa grew by 26%.

Management approach

Clariant's Strategic Management Process addresses global growth and capital expenditures for four main regions: APAC (Asia-Pacific), EMEA (Europe, Middle East, and Africa), LATAM (Latin America), and NORAM (North America). In addition, all business units develop strategic business plans that address objectives and specific strategic initiatives for these four regions and for China in particular. Also, each business unit management committee – except that of Business Unit Oil and Mining Services – has one representative with responsibility for China.

Clariant applies a differentiated steering approach to allocate capital, innovation, human resources, and M&A to businesses with an attractive market outlook. This means investing in areas where the company is already strong or closing gaps where Clariant aims to improve its position.

In 2023, Clariant will transfer the President of its Care Chemicals business to Charlotte, USA, and the President of its Catalysts business to Shanghai, China. This increases senior management focus on these growth markets.

Clariant aims to grow its business globally by leveraging its product portfolio and customer base across all regions. Some products have particularly strong growth potential in certain regions, such as DEPAL flame retardants in China for electronic and e-mobility applications and CATOFIN® in China for propylene dehydrogenation units. There is also a demand for bio-based ethoxylate materials globally from the Clariant IGL Specialty Chemicals JV in India.

In 2022, Clariant closed its acquisition of the BASF Attapulgate business based in the USA to enable it to significantly expand its North American Adsorbents business. Clariant also announced that it would invest in a second flame retardants line in Daya Bay, China, to support rapidly growing local demand for flame retardants for the electronics industry.

China

Clariant has for many years been following a growth strategy in China. The company conducts profitable business there and experienced a high single-digit annual average growth rate over the last five years. Clariant plans to grow further and expand its footprint in China to outgrow the market. By producing locally, transport emissions will be reduced on imports from other production sites.

Catalysis is the company's biggest business, serving the petrochemical industry with catalysts for several chemical process improvements. The plastic industry is served by the Additives business with flame retardants which are used in the electric and electronic industries. Clariant is also a leading supplier of bentonite clay to the foundry industry. Closer to the end consumer, the Care Chemical business is a supplier of a vast range of products for the personal and home care industry, but also serves the construction, automotive, and agricultural industry.

Clariant already reached its sales targets in China for 2023 in 2022, mainly due to price increases. The company also intends to improve its year-on-year Group EBITDA margin levels despite the increasingly challenging economic environment. In the medium term, Clariant aims to increase its sales share from 10% in 2020 to 14% in 2025 and to enhance the local production rate from 35% in 2020 to 50% in 2025. Growth will be driven by the Business Units Care Chemicals, Catalysts, and Adsorbents & Additives, which serves the growing electric vehicle market.

Today, China already accounts for about 28% of the global specialty chemical market. Also, 40% of the global growth for specialty chemicals between now and 2025 is expected to come from China.

An increasing share of Clariant's products for the Chinese is produced domestically, which meets China's drive for self-sufficiency and avoids supply chain issues and cost differences for Chinese customers, even more now with the high energy prices. Given the strategic investments in Chinese capacities, this share is expected to grow even further. Clariant has the vision of supporting the high-quality growth of China with sustainable and innovative solutions.

Clariant is determined to become a »China insider,« using its understanding of the local market and customer needs for local innovation and local decision-making. Clariant offers solutions that are not easy to copy and sells specialties with limited local competition, like catalysts and green surfactants. For more commoditized products, for example, in the pigments business, competition in China is very intense with high pressure on margins.

As of the end of the reporting year, Clariant was operating a total of nine production sites and three technical centers throughout China, with approximatively 1 000 employees. With the company's One Clariant Campus and China Innovation Center, it is able to speed up its product development processes and increase its abilities to fulfill the specific needs of its Chinese customers with innovative and sustainable Clariant solutions. The company believes that stronger innovation capabilities and the increased manufacturing footprint in China will help to achieve its targeted increase in the China sales contribution to the entire Clariant Group.

Clariant hosts TechConnect China on One Clariant Campus

In 2022, One Clariant Campus hosted the event TechConnect China, which aims to promote cross-departmental and cross-business technical exchanges to identify opportunities for innovation and cooperation. During the technical gathering, the suppliers' sustainability award and the winners of the Innovation Star of Clariant China were also announced.

Sustainability policy in China

With the fourteenth five-year plan (2021–25) and related policy announcements, China has raised its level of sustainability in chemicals significantly. The country now plans to achieve carbon neutrality by 2060. Therefore, it enhances investments in carbon emission reduction, especially in energy supply and mobility. There is a significant customer pull for sustainable solutions for a smaller carbon footprint. This entails huge growth potential for Clariant, for example, with next-generation catalysts that diminish the production of carbon dioxide.

China has also established a nationwide mandate for a share of renewable ethanol in transportation fuels. The Business Line Biofuels & Derivatives profits from the ensuing demand for advanced biofuels with its low-emission product sunliquid®.

Finally, China's environmental policy aims to move chemical production sites to specialized zones with a shared centralized wastewater and hazardous waste treatment infrastructure. Off-gas and wastewater standards in China are often stricter than in Europe or the US. Clariant welcomes strict laws and their execution to avoid competitive disadvantages. It is an early adaptor of high standards and sees its efforts rewarded when all competitors must comply with strict legislation.

Business framework in China

The legal and regulatory environment in China has become more favorable in terms of acquisitions. For example, it is no longer mandatory for foreign companies to establish a joint venture structure. China even promotes fair competition between domestic and foreign enterprises and protects the interests and rights of enterprises with foreign investment. In 2022, Clariant sold products to both multinationals and domestic companies in China.

Since the 2014 free trade agreement between China and Switzerland, the protection of Clariant's intellectual property in China has improved gradually. China has issued several intellectual property law updates and reached a new level for infringement penalties.

Clariant has an excellent reputation in China in terms of sustainability, innovation, and corporate citizenship. The company is committed to plastics recycling along its value chain and to advocacy for its EcoCircle initiative with sustainable products, solutions, and partnerships. These efforts earned Clariant several awards and helped the company to attract young Chinese talents.

Sustainability training in China

Nearly 200 employees participated in various trainings in 2022 putting an emphasis on Clariant's Key Sustainability Focus areas and the sustainability-driven value propositions in the portfolio.

Projects in China

Clariant started production in a new production facility for CATOFIN® catalysts in Jiaxing, Zhejiang province. Since 2022, the plant has addressed the strong growth in the propane hydrogenation market in this region. It produces a key product that is driving Clariant's growth and is the most digitized Clariant facility to date, using sophisticated automation systems throughout the production process. These catalysts help to convert propane into propylene, which is used, for example, to produce plastics.

Investments in innovative and sustainable flame retardants

Clariant's number one sustainable and innovative product in China is the halogen-free flame retardant Exolit® OP used in electrical vehicles, for which China is the biggest market in the world. With sales having doubled in 2022, Clariant announced that it would build Exolit® OP factory. Before, the company had already started enhancing its existing flame retardant production facility in Daya Bay, Guangdong province. These two investments will allow the company to respond to the rapidly growing demand from the Chinese and Asia-based electrical and electronic equipment industries. By establishing local production capacities for its innovative and sustainable Exolit® OP range of flame retardants, Clariant significantly reduces time-to-market.

To meet emissions regulations, Clariant also collaborated with Jiangsu Jinneng, a specialist in volatile organic compound (VOC) abatement technology in Zibo, Shandong province. The phthalic anhydride plant of Shandong Qilu Plasticizers Co. Ltd. uses Clariant's EnviCat® VOC catalyst to purify production off-gases, thereby removing 99% or more of VOCs and carbon monoxide.

In Care Chemicals, Clariant continues to look for opportunities to both expand and upgrade its Chinese business, including potential further investments in local manufacturing. Clariant announced an investment to expand its production capacity for personal and home care, as well as industrial applications, in Daya Bay, China. The enhanced ethoxylation plant will also enable the introduction of new products. As a result, it will step up its production of more sustainable ingredients that can help customers advance their environmental targets and create differentiated, more sustainable solutions to meet sector demands.

The One Clariant Campus in Shanghai is one of Clariant's major projects in China. Since 2022, it has been fully operational, and the laboratories have been finalized. It is an integrated operational headquarters in the region, an innovation facility to strengthen Clariant's position in the country, and a chance to enhance the company's market position. The facility combines technological knowledge and local support. It has become a platform to exchange with customers and vendors and already played a key role in the development of products for the local market, including, for example, sustainable additive solutions for China's growing plastics, coatings, and adhesives industry.

First OCC Safety Week on One Clariant Campus

During the 2022 China National Safety Month, Clariant hosted its first OCC Safety Week in order to get closer to achieving the goal of zero accidents by building a safe culture together. The various activities included courses and trainings in office safety, ergonomics, firefighting, first aid, AEDs, and safety devices. Clariant offered practice and drills in using fire extinguishers, first aid, AEDs, and protection equipment. Topics included leadership sign-off and safety commitment, among others. Various safety awards included »Best Slogan, Online Safety Knowledge Competition Top 10, Best Safety Deviation Report, Special Contribution Award during OCC Lockdown«, two competitions were carried out on site. In a lab area, ten best practices were shared.

India

Clariant is committed to supporting its Indian customers with the complete range of its product portfolio. This commitment is well in line with the governmental initiatives »Make in India« and »Self-Reliant India« as Clariant continues to focus on strengthening its own manufacturing facilities in India and expanding its service hubs to cater to global Clariant operations. Clariant is confident that it can contribute to the rapidly growing local market in India across all businesses – Adsorbents & Additives, Care Chemicals (through its joint venture, Clariant IGL Specialty Chemicals Private Limited), and Catalysts (through its joint venture with Sud Chemie India Private Limited).

Projects in India

In 2022, the 51%/49% joint venture with India Glycols Limited, under the name of Clariant IGL Specialty Chemicals Private Limited, became fully operational. It produces and markets ethoxylates based on ethylene oxide from bioethanol. They meet the diversified needs of various end-use industries, for example, the textile, pharmaceutical, personal care, emulsion polymerization, paint, detergent, automotive, and agrochemical industries.

This joint venture gives Clariant a strong position in the Indian ethoxylate market and turns the company into one of the leaders in the global market for green ethylene oxide derivatives and bio-based ethoxylates for home and personal care.

India Glycols will contribute its renewable bio-ethylene oxide derivative business. This includes a multipurpose production facility with an alkoxylation plant in Kashipur, Uttarakhand. Clariant will contribute its local Industrial and Consumer Specialties business in India, Sri Lanka, Bangladesh, and Nepal, as well as a payment of a mid-double-digit million amount. Like this, the joint venture allows Clariant technology to be leveraged with low-cost manufacturing.

Clariant expects the collaboration to deliver profitable growth in the next few years. For the 2022 financial year, Clariant IGL Specialty Chemicals Private Limited generated revenue including exports, which contributed positively to the top line of the Business Area Care Chemicals.

With regard to ethics, environment, safety, and health, the joint venture will follow the higher of the standards of Clariant or India Glycols.

Since 2021, Clariant has also strongly leveraged its 2017 catalyst joint venture with SCIL in India. It serves both to access the fast-growing local market for emission catalysts for two- and three-wheelers and to form a global manufacturing base for Clariant catalysts.

Clariant's global IT hub in India

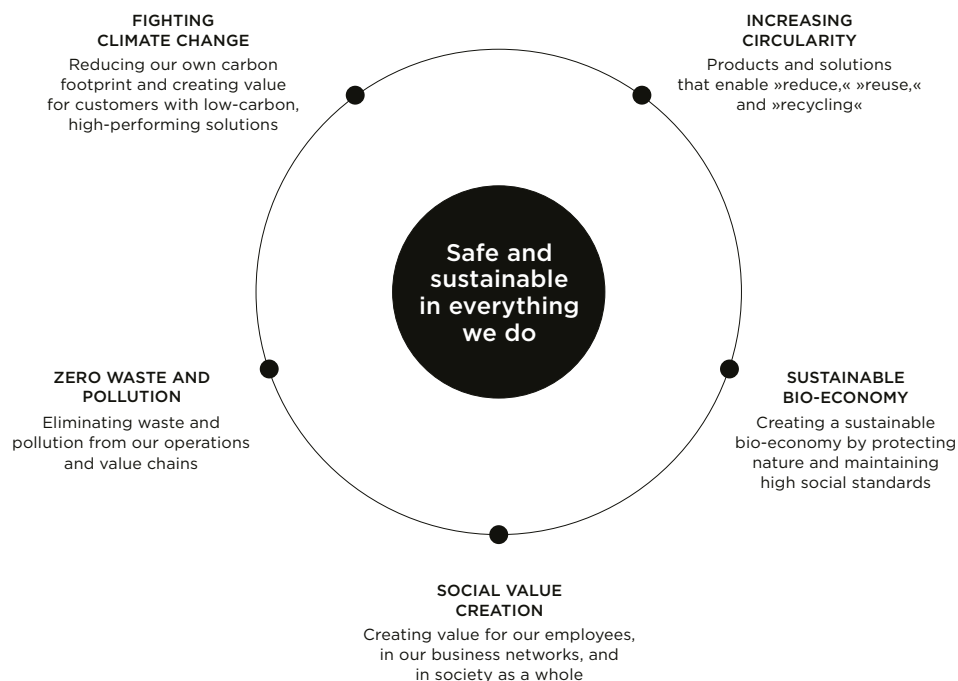
Clariant is further expanding its IT hub in Airoli/Mumbai which was created in 2021. The IT hub focuses on all IT aspects including the development, implementation and support of global business applications and IT infrastructure in addition to the needs of the local businesses in India.

GROWTH OPPORTUNITIES FROM SUSTAINABLE PRODUCTS AND SOLUTIONS

There is an increasing demand for sustainability in all industries that Clariant serves. With its focus on innovative, sustainable, and bio-based chemicals, the company is in an excellent position to benefit from this ongoing shift. Its products and solutions also help customers to achieve their targets for the reduction of greenhouse gas emissions.

The activities in the 2022 business year were marked by transforming Clariant operations as well as focusing on the sustainable transformation of the Clariant portfolio. Increasing the safety and sustainability of Clariant products and solutions activates the company purpose »Greater chemistry – between people and planet.« Clariant uses its scientific expertise and innovative power to offer products and solutions for major sustainability challenges of these times, taking into account the sustainability goals of its customers as well. Developing growth opportunities from sustainable products and solutions therefore directly supports three interconnected focus themes of the purpose-led strategy: These are customer focus, innovative chemistry, and leading in sustainability.

001 SUSTAINABILITY PRIORITIES



Clariant strives to be safe and sustainable in all activities. Clariant has made it a priority to set and refine its sustainability strategic approach in 2022 with the so called »1+5 focus areas.« The Group's efforts center around the ambition to be safe and sustainable in everything Clariant does. This comprises not only the target of zero accidents, but also the development of a safe and sustainable product portfolio. Based on this foundation, there are five key focus areas: fighting climate change, increasing circularity, fostering a sustainable bio-economy, eliminating waste and pollution from operations and value chains, and creating social value. Social value includes fostering the development of employees as well as creating value in the business networks and in society as a whole.

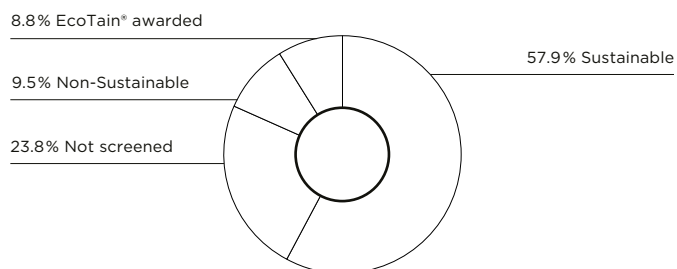
Like in the previous year, Clariant's ambitions gained external recognition again in 2022 as Clariant was listed in the Dow Jones Sustainability Indices (DJSI).

→ Read more about new Clariant products launched in 2022 with significant sustainability benefits.

Management approach

The Global Innovation and Sustainability Council shapes Clariant's agenda on sustainability-driven portfolio transformation. To emphasize the strong connection between innovation and sustainability, Clariant established a Sustainability Transformation department in 2020 with the responsibility to fully integrate sustainability in the company's products and processes.

002 TARGET CLASSIFICATION OF 2022 SALES



Since January 2021, the Service Unit Group Innovation and Sustainability (GIS) has bundled both topics under one roof to align Clariant's innovation management practices with its sustainability programs. GIS establishes Group-wide innovation and sustainability policies, strategies, and standards and coordinates their implementation. In 2022, Clariant strengthened the integration of innovation and technology by introducing a Chief Technology & Sustainability Officer, reporting directly to the CEO. The Chief Technology & Sustainability Officer is the chair of the Global Innovation and Sustainability Council. He is not only responsible for the Sustainability Department, but also has a direct reporting line to the Innovation Champions in the business units, and through this is reinforcing steering of the innovation portfolio towards increased sustainability.

- Read more about the »Innovation Champions« in the chapter → **Innovation & Technological Advances.**
- Read more about the committees in the → **Corporate Governance Report.**

While business units remain responsible for developing new business opportunities, GIS provides service and support on best-in-class innovation approaches and emerging technologies and systematically evaluates the sustainability profile of innovation projects.

Clariant's sustainability transformation has also become a cornerstone of Clariant's Strategic Management Process (SMP), through which the company continuously monitors the performance of its management system and identifies improvement potential. The innovation and sustainability progress toward the strategic targets is reviewed on a quarterly basis in the Global Innovation and Sustainability Council (GISC), comprising the CTSO, the innovation heads of the BUs, key functions as well as the CEO and the board delegate of the Innovation and Sustainability Committee as permanent guests. The conclusions are further reported to the Innovation & Sustainability Committee (ISC), a board subcommittee tasked with the oversight of innovation and sustainability matters, including climate risk management.

→ Read more on Clariant's progress on strategic targets.

GIS sustainability priorities 2022

- Strengthen the focus on »1+5« sustainability key areas
- Climate: release of new tool CliMate, Scope 1, 2, and 3
- Bio-economy: engage with ASD/supplier evaluation
- Portfolio Value Program 2.0
- Internal trainings and workshop to increase sustainability understanding

→ Read more in the chapter **Innovation and Technological Advances.**

→ Read more in the chapter **Circular Solutions.**

→ Read more in the chapter **Bio-Based Economy.**

→ Read more in the chapter **Climate Protection.**

Clariant's main policies and guidelines relating to growth opportunities from sustainable products and solutions are:

- Sustainability Policy
- Human Rights Policy Statement
- Code of Ethics
- NDPE/Palm Oil Policy
- Supplier Code of Ethics

Clariant engagement in the public policy dialogue

Public policies are increasingly driven by sustainability imperatives, as is the case under the Green Deal program at the EU level and in other important economies on the global stage.

As a responsible corporate actor, Clariant aims to ensure an open and transparent dialogue with policymakers, business associations, as well as NGOs, in a number of strategic policy areas, including sustainable chemistry; climate change and the energy transition; clean mobility; the bio-economy; and the circular economy.

The engagement of Clariant representatives in business associations, industry coalitions, and sustainability supports strategic alignment across the industry and provides an opportunity to exchange industry perspectives and best practices.



Acknowledging the urgency of accelerating the transition to a safer, low-carbon, and more circular economy, Clariant supports ambitious, science-based policies. Clariant is actively contributing to address regulatory and societal expectations by bringing forward innovative and sustainable solutions. It is therefore key that such solutions are supported and valorized under adequate policy frameworks.

External policy-related engagements are supported within Group Innovation & Sustainability by Government Affairs and Advocacy, as well as subject matter experts in sustainability topics and product stewardship where Clariant takes an active role in shaping sustainability tools, approaches, and policies.

To foster internal knowledge, advise on Clariant strategy, and expand the engagement with external stakeholders, the company has also established Clariant Policy Dialogues in 2021, a webinar series featuring external policy or sustainability experts (value chain players, industry associations, academics, and NGOs) presenting their perspectives and recommendations. Clariant engaged in four Policy Dialogues in 2022, covering, for example, the United States Inflation and Reduction Act (IRA), China's race towards carbon neutrality, and the new policy incentives in support of sustainable aviation fuels (SAFs).

To enhance the sustainability dialogue with external stakeholders, Clariant co-organized a → **EURACTIV** conference in Brussels to promote ambitious climate policies and the role of advanced biofuels in transport.

Growing demand for sustainability products and solutions

Consumer and customer demand for sustainable products increased again in 2022. In response to this development, Clariant continuously brings forward sustainable solutions that do not compromise on performance or on the company's commitment to

fulfilling customer needs. That is why Clariant's innovation portfolio has shown particularly robust performance over the past few years and the total sales from innovation* have increased.

The share of consumers that consider sustainability criteria when buying products continues to increase. In addition, in 2022, Clariant experienced an expansion of industrial goods companies taking sustainability criteria into account in their buying decisions, most frequently to lower their carbon footprint. These trends are expected to endure in the future, driven by new disclosure obligations requiring publicly traded companies to report their carbon footprints, as well as increasing pressure to back up sustainability claims of products by robust data.

Clariant's customers face challenges surrounding climate change, plastic waste, and overall circular economy needs. Clariant's sustainable products help them to achieve their sustainability targets, decrease their environmental footprint, and comply with existing and anticipated policies and regulations.

Customer dialogue

To be informed and ensure regular updates, for Clariant, open communication with customers is critical to address emerging needs and trends in its business environment. This information is essential to bring forward solutions that serve customer needs. During the pandemic, Clariant's digital capabilities and channels – including e-commerce – have become increasingly important. Customer dialogue in the past years revealed a growing demand for innovative and sustainable solutions to meet efficiency goals. Demand for products with a lower carbon footprint and favorable hazard profile is strong, particularly in emerging sectors like electric vehicles and renewable energy.

→ Read more in the chapter Customer Relationships.

*Products five years or less after market launch

Sustainable growth strategy

As a part of Clariant's aspiration to strive towards sustainability leadership, the target is to generate 1–2% annual growth from sustainability-driven innovation by 2025 by developing bio-based products, enabling decarbonization, and promoting circularity. These efforts are leveraged in Clariant's → **1+5 sustainability priorities**. In 2022, Clariant continued to work on reducing the use of hazardous substances and on promoting alternatives that are safer than required by regulation. This approach is particularly important in regions where regulatory action is lagging.

Clariant has set itself → **sustainability targets** for climate protection, as well as in the areas of circular plastics and the bio-economy. Packaging has been designed to create a cleaner waste stream in existing recycling infrastructure and to create a circular economy with full recyclability. The project was awarded the Sustainable Packaging Award.

→ Read more about this project in the chapter Innovation and Technological Advances.

For plastic waste unsuited for mechanical recycling, Clariant launched a product line of new HDMax® catalysts and Clarit™ adsorbents to achieve cracker-compatible pyrolysis oil in chemical recycling.

Another example is the D3 Program, a coordinated effort in the Oil Services product portfolio to identify and pursue opportunities to decarbonize, densify, and detoxify products using innovative technologies. These efforts will lead to lower Scope 3 emissions from raw materials, as well as logistics, and an elimination of substances of high concern from Clariant's products.

In view of this strategy, Clariant will continuously keep reviewing its portfolio for potential improvements and upgrades as the company had been doing over the last years already.

Portfolio Value Program (PVP)

The Portfolio Value Program (PVP) is Clariant's portfolio sustainability assessment, based upon which Clariant evaluates the sustainability profile of its product and project portfolio and identifies sustainability improvement opportunities, best-in-class products signaled with Clariant's EcoTain® label, sustainable and non-sustainable products, as well as transitional products. It is also a key tool to support the center sustainability focus filed from the 1+5 sustainability priorities: Safe and sustainable in everything we do.

The PVP methodology was initially developed in 2012 to support Clariant's transition toward a more sustainable portfolio. In 2022, a new version of the PVP was launched, reflecting the company's significantly increased sustainability ambition.

Clariant's PVP is not only aligned with the industry standard provided by the World Business Council for Sustainable Development (WBCSD), called PSA (Portfolio Sustainability Assessment), but Clariant is also actively contributing to the update of WBCSD's framework for portfolio sustainability assessments as member of the working group developing the methodological update according to the EU Green Deal and other initiatives.

The PVP update therefore considers new trends and stakeholders' expectations, but also anticipates upcoming requirements, especially those deriving from the European Green Deal. It provides more accurate and credible information about the performance of the Clariant portfolio. This enables Clariant and its customers to have a deeper understanding of the products across all life cycle phases, effects, releases and emissions of products and services, enabling Clariant to move toward zero pollution for air, water, soil, and biota.

Similar to the original version, the methodology includes a twofold assessment comparing products to the current industry standard as well as to absolute sustainability criteria. Every product is thus assessed systematically across its life cycle on their impact on the environment and society, as well as its performance, using 39 screening criteria. The methodology criteria were updated to

003 PVP CATEGORIZES THE CLARIANT PORTFOLIO IN FOUR CATEGORIES



Front-runners of the market segments standing out for their sustainability excellence performance, and which can be distinguished by Clariant's EcoTain® label

SUSTAINABLE

Products with a positive sustainability contribution – which, however, typically goes beyond the regulatory requirements

TRANSITIONAL

Products for which there are sustainability issues actively being addressed, which means R&D projects, replacement of product with an alternative, amongst other options

NON-SUSTAINABLE

Products falling below the Clariant sustainability standard, which then become part of an »Improvement Roadmap« and are closely monitored

reflect the latest understanding of sustainability criteria being developed in the EU chemicals strategy for sustainability (CSS), the Safe and Sustainable by Design (SSbD) initiative, as well as in the update of the Portfolio Sustainability Assessment methodology (PSA). Clariant is actively participating in the industry discussions about implementation of these new sustainability methods and tools.

The assessments are performed by a multidisciplinary team, which allows the capture of different aspects of the products, such as product safety, sustainability contributions, comparison against next best alternative, and others. All PVP assessments are conducted in a bespoke online tool called myPVP, where historical information is also archived.

Following the launch of the PVP update, the business units, in collaboration with Sustainability Affairs, started to develop rescreening roadmaps to review all screenings already performed

according to the new criteria. The portfolio is regularly reassessed according to the categorization.

In addition, in 2022 a series of training sessions was set up for different internal stakeholders, such as technical, sales, and marketing experts. Over 70 people were trained in the new methodology. A »Lunch & Learn« in November 2022 was dedicated to sharing insights into sustainability trends and how companies like Clariant navigate current challenges and keep their product portfolio fit for the future, which included an overview of the new PVP methodology for over 100 employees worldwide.

PVP steers sustainable product design and upgrades the portfolio toward increased sustainability; sustainability checks are deeply embedded in all stages of Clariant's innovation process (Idea to Market), with the full PVP screening being performed before commercialization.

004 KEY FOCUS AREAS REFLECTED IN PVP 2.0

- PVP 1.0**
- Analysis along Performance, People, and Planet
 - No differentiation of products according to use phase
 - Limited analysis of circularity
 - Limited focus on raw materials
 - No focus on footprint



- PVP 2.0**
- Analysis from raw material to end of life (value chain)
 - Differentiation of industrial vs. professional/consumer use
 - Considers circularity internally and across the value chain
 - Increased background information on raw materials
 - Systematic identification of handprint benefits



According to the product classification, periodic rescreenings are carried out: EcoTain® products are rescreened every two years and sustainable products every five years, while Transitional and Non-Sustainable products have yearly checks.

Internal labels

The best-performing products in the PVP are awarded the EcoTain® label by a panel of Sustainability Transformation, Product Stewardship, and regional sustainability functions, called the EcoTain® panel, which usually takes place four times per year. In 2022, two EcoTain® panels took place. Since the launch of EcoTain®, more than 200 products have been awarded the label. EcoTain® sales have been continuously increasing over the years. In 2022, they accounted for approximately 9% of total sales, considering continuing business, a number which is targeted to further increase in the years to come.

In 2019, Clariant launched its sustainability designators, which enable customers to identify products with key sustainability advantages. Designators were assigned to 128 products in the reporting year. Also in 2022, customers increasingly appreciated the transparency given by the designators.

2 EcoTain Panels in 2022

Due to the methodological revision of the PVP, the number of panels was reduced to two. The first panel at the beginning of the year still related to the original methodology, whereas the second at the end of the year was based on the revised set. Resulting from these panels, five new products gained the prestigious EcoTain® Label:

- Dispersogen®
- H2Max®
- Plantasens® LS6
- Prenylium®
- TexCare® Gemini

SUSTAINABILITY PORTFOLIO CLASSIFICATION

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
EcoTain® awarded products	6	0	6	18	24	27	24
EcoTain® withdrawn products	0	0	0	3	15 ³	0	0
Cumulative number of EcoTain® products	215	0	215	243 ⁴	228 ¹	204 ²	193
Product portfolio screened for sustainability performance (sales %)	77	0	77	78 ²	76 ²	76 ²	76
Screened products meeting internal sustainability definition (%)	68	0	68	68 ²	67 ²	68 ²	68 ²
Screened products not meeting internal sustainability definition (%)	9	0	9	10 ²	10 ²	8 ²	8

¹ Restated due to EcoTain® withdrawals

² Number refers to continuing businesses only.

³ Number refers to discontinued businesses.

⁴ Number contains 34 products of discontinued business.

Dispersogen® is a label-free blend of polymeric dispersing agents that can be used for a wide range of organic and inorganic pigments, offering significant reductions in supply chain complexities. Due to its active content of 100 %, it allows superior formulation performance and reduces undesired side effects that occur during pigment paste and paint preparation with conventional surfactants.

H2Max® catalysts are optimized for the purification of terephthalic acid (PTA) to remove impurities. The H2Max® series is a more economical solution, as it demonstrates significantly lower loss of costly palladium during operation compared to state-of-the-art catalysts, besides it is free of human and environmental hazard labels, allows high reclaiming rate of Pd from spent catalyst and the catalyst carrier is manufactured with non-food-competing renewable raw materials.

Plantasens® LS6, a versatile emollient developed from sustainably sourced and biomimetic ingredients, is able to respond to different skin types. It has a close composition to skin lipids to naturally rebalance the natural sebum composition and offers an excellent affinity for the skin. Each component of Plantasens® LS6 has been carefully selected from valuable heritage plant oils and is 100% bio-based.

Prenylium® is a Morus alba tree root extract obtained by the Plant Milking technology allowing the cultivation of plants in aeroponic condition. This sustainable technology enables the exploration of unsourceable plant parts, such as roots, without destroying tree. In addition, through an innovative process used to stimulate the growth of the roots, the content of targeted molecules is increased.

TexCare® Gemini, a high-performing soil release polymer with rheology control technology for liquid laundry detergent, removes the need for readjusting viscosity with supplementary thickeners. This eliminates the respective additional costs and reduces formulation complexity.

Sustainability recognition

Clariant's efforts in the market are also reflected in a number of different sustainability awards. → [Read more about these in the chapter Innovation and Technological Advances.](#)

Raw materials

Clariant strives to increasingly use biomass as a renewable feedstock. This development is in line with the growing demand for sustainable products from customers and consumers. Clariant also anticipates a stricter regulatory environment.

Clariant's suppliers offer more sustainable solutions as well. The company cooperates with them to identify sustainable feedstock sources and lower-carbon footprint raw materials, such as ethylene and ethylene oxide. Particular emphasis is also on the responsible sourcing of conflict minerals. Clariant investigates allegations of violating its sustainability commitment in the supply chain.

Clariant IGL Specialty Chemicals produces and markets ethoxylates based on ethylene oxide from bioethanol.

→ Read more about this joint venture in the chapter Projects in India

CORPORATE GOVERNANCE

Corporate Governance comprises Clariant's governance structure, ownership, and control, as well as internal rules, processes, and practices. It ensures fair competition and establishes the corporate culture.

Clariant's governance principles aim to promote sustainable long-term success by providing stakeholder value and transparency. The Group is committed to Swiss and international standards of corporate governance by following the respective statutory provisions and the rules issued by the SIX Swiss Exchange and by implementing the principles of the Swiss Code of Best Practices for Corporate Governance.

In 2022, the Group conducts its business through five business units:

- Additives
- Catalysts
- Functional Minerals
- Industrial & Consumer Specialties
- Oil and Mining Services

It reports its continuing operations in the following three business areas: Care Chemicals; Catalysis; and Natural Resources (i.e., Functional Minerals, Oil and Mining Services, and Additives). The Business Unit Pigments was divested on 3 January 2022.*

The Board of Directors provides Clariant's strategic direction. Additionally, it is the supreme management body of the company and, simultaneously, the supreme supervisory body of the Group. The ultimate decision-making authority is the Board of Directors in all matters except those decisions reserved by law or the Articles of Association for the shareholders, while the Executive Steering Committee is responsible for the financial and operational management.

Please consult the → **Corporate Governance Report** for in-depth information on corporate governance.

* Note: As of 1 January 2023, the Group conducts and reports its business through three newly formed Business Units: The new Business Unit »Care Chemicals« (consisting of the two former Business Units Industrial & Consumer Specialties and Oil and Mining Services), the new Business Unit »Catalysts« (consisting of the former Business Unit Catalysts), and the new Business Unit »Adsorbents & Additives« (consisting of the two former Business Units Additives and Functional Minerals).

RISK AND CRISIS MANAGEMENT

Clariant has developed a systematic approach to analyzing and managing risks and crises. It includes the goal of achieving resiliency as well as measures concerning the business model and the protection of Clariant's production assets against financial and non-financial risks, such as cyber risks or physical, regulatory, or market risks related to climate change. After the pandemic, the world in 2022 continued to be unpredictable, marked by political instabilities resulting from the war on Ukraine. At the same time, global risks, such as climate change and digital disruption, have further accelerated. With its effective and strong enterprise risk management, Clariant ensures quick adaptation to a fast-changing environment, provides for protection, and fosters its ability to meet stakeholders' changing needs.

Management approach

Clariant's regular risk assessments are based on a company-wide approach. They integrate sustainability and consider any threat that might impact the achievement of the company's financial and non-financial strategic objectives. Within the framework of the Enterprise Risk Management Policy, risk assessments are prepared by business units, service units, and corporate functions. Annual summary risk assessments are submitted to the Executive Steering Committee, the Audit Committee, and the Board of Directors for review. In the case of new or changed risks, internal reporting is accelerated. In 2022, the focus was on managing the impacts of the war on Ukraine on personnel, compliance with international standards, and business continuity.

To support functional responsibility, certain functions have access to risk assessments to assist them in their roles. Examples of such functions are Environmental Safety & Health Affairs (ESHA), to identify key sites for its property risk survey program, and Group Procurement, to ensure reliable and compliant supply of raw materials.

At Clariant, the terms »crisis management« and »emergency management« are used synonymously. Concerning emergency management, Clariant Corporate Guidelines 08 (EHS Reporting) and 15 (Emergency Management) set the framework for emergency reporting and the organization of emergency management. Compliance with the emergency guidelines is the responsibility of the head of Emergency Management. Emergency management teams are established at every site and in each country and region. The Group Emergency Management (GEM) team is responsible for crisis/emergency management at the Group level. This team is supplemented by extended functions such as IT, Legal, Procurement, Communications, and Product Safety. Annual scenario trainings are mandatory for all emergency management teams throughout Clariant.

Effective Enterprise Risk Management

Enterprise Risk Management (ERM) comprises the identification, management, mitigation, measuring, monitoring, and prevention of risks. The Executive Steering Committee is responsible for monitoring the risk assessments for relevance and consistency. It has formed an Ethics and Risk Management subcommittee, which maintains an up-to-date understanding of areas where Clariant is, or may be, exposed to risk issues related to Ethics and Integrity as well as Antitrust. The assessment and management of climate-related risks and opportunities are monitored by the Board of Directors' Innovation & Sustainability Committee, which was formed in April 2021.

Potential threats are documented in risk registers, quantified, and delegated to qualified individuals and teams with specific skills for the management of the respective risk. Documentation in the risk registers uses financial and reputational impact and probability assessments to score and rank the risks. The assessments also address measures to manage the risks and set dates for completion of the measures.

→ Read more in Enterprise Risk Management.

→ Read more in Board of Directors.

→ Read more in the management of financial risks.

→ Read more in TCFD Disclosures.

Active emergency management

During the pandemic, Clariant's approach to crisis management with the key priority of protecting the health of all employees has proven to be efficient, including the specific policies such as how to reduce the risk of infection at sites and how to manage visitors or contractors. In 2022, active emergency management focused on preparing for worst-case cyber or ransomware attacks. A new alerting and collaboration tool was purchased. It is located outside the Clariant network and allows communication and collaboration in the event of the standard Clariant communications tools being unavailable. Another significant challenge in 2022 was the management of the impact of the war on Ukraine. Elements included the duty of care to employees both in Ukraine and Russia, compliance with international sanctions, and ensuring business continuity in other countries.

Resiliency and the recognition of opportunities

The overall goal is to continuously integrate ESG risks and opportunities into Clariant's long-term strategy. A strong risk culture is essential to support and maintain Clariant's operational resiliency in a fast-changing environment. In particular, Clariant recognizes the need to evaluate climate impact and enhances climate risk assessments. Acknowledging dependencies and interconnections may result in a better alignment and understanding of risks from all parts of the business and eventually help in recognizing the opportunities as well.

Supply chain reliability: The achievement of targets also depends on the reliability of the supply chain. Raw material purchasing may be impaired due to the unavailability of respective products, required energy, or corresponding means of transportation. Similarly, Clariant's customers may be affected by the unavailability of certain input materials outside the range of chemical products, limiting their production and thus Clariant's sales opportunities. Clariant responds to these challenges with market intelligence and monitoring to identify potential constraints at an early stage and in close cooperation with business partners. The Standardized Operating Procedures for Supplier Sustainability, Compliance, and the Risk Assessment Process, updated in July 2022, refer to the

details regarding supplier sustainability assessments and audits.
→ Read more in the chapter Supply Chain Resiliency.

Digital interconnection: Successful performance of the Clariant Group depends on properly working information systems. Cyberattacks may result in the loss of business and personal data, knowledge, facilities, or money, leading to interruptions in manufacturing and product deliveries. Such attacks might cause significant economic damages as well as loss of trust. Clariant is responding to the increased cyber risk with a reinforced security operations center, state-of-the-art software, and frequent awareness campaigns.

Sustainability transformation: Demand for sustainable products is clearly increasing, which opens up business opportunities. Unavailability of sustainable offerings represents a market disadvantage. Clariant is responding with the service unit Group Innovation & Sustainability, which combines Sustainability, Innovation, ESHA, and other competencies coming together in one department to accelerate the sustainability transformation.

→ Read more about TCFD disclosures.

→ Read more about Corporate Governance.

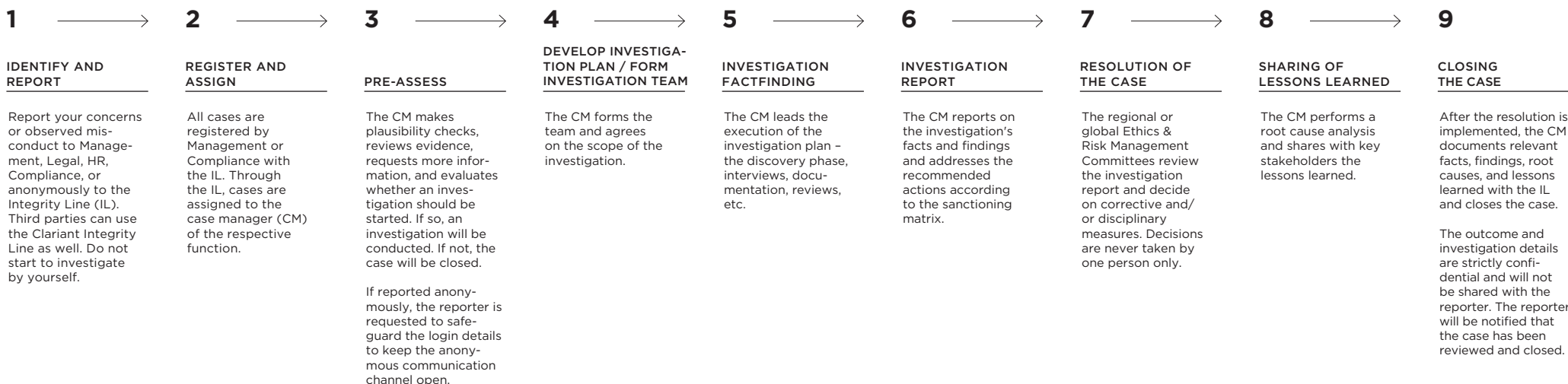
External reporting and transparency

Believing in reporting as a mechanism for more awareness and accountability, Clariant will continue to improve transparency and the disclosures as risk profiles expand. Clariant aims to increase transparency by further quantifying the risks, for example, with respect to climate. Clariant voluntarily uses and references the following standards and frameworks in its holistic approach:

- GRI Standards 2021
- SASB Standards (Chemicals)
- TCFD Disclosures
- International <IR> Framework, Part 2, 4D



005 NINE-STEP APPROACH



BUSINESS ETHICS AND COMPLIANCE

»Business ethics and compliance« refers to ethical, responsible, and integrity-based corporate behavior regarding, for example, management, procurement, marketing, and sales. It also involves complying with legal and regulatory frameworks on accounting and taxation, anticompetitive practices, money-laundering, bribery and corruption, lobbying and political involvement, and intellectual property rights.

Clariant is a world-class, high-performance company that acts with the highest standards of ethics and integrity. The company aspires to also be perceived in this way by its stakeholders. Compliance with laws, regulations, ethical values, and integrity standards is necessary to be sustainably successful and win the trust of business partners and customers.

Management approach

Clariant's business units are responsible for managing business ethics and compliance in their daily operations. Group Compliance supports the business units in adhering to Clariant's ethical standards by providing the Ethics and Integrity Framework, communication, tools, trainings, and advice.

Clariant has a full-time Head of Group Compliance, full- or part-time Regional Compliance Officers in each region, Country Compliance Officers, an Ethics and Integrity project manager and compliance specialist, a Group Privacy Head and an Information Security team. The Group Compliance team gets support from Group Legal Services.

Clariant launched the Code of Ethics in 2021, with the close involvement of Management in the rollout. A Code of Ethics Resource Center is available to resolve dilemmas, get input for team meetings, scenarios, videos and other materials. For 2022, the focus is on the company's new purpose and values, and it has also anchored business ethics in the value »act with integrity.«

Environmental Safety and Health Affairs (ESHA), Sustainability, Information Security, Data Privacy, Enterprise Risk Management (ERM), and Internal Control over Financial Reporting provide annual program overviews. These insights help to ingrain a culture of ethics and integrity throughout the organization and provide assurance on the overall program.

Evaluation of management approach

Until the new operating model was put in place in July 2022, the former Executive Subcommittee Ethics & Risk reviewed and assessed compliance on a global and regional level in all four regions to foster a culture of ethics and integrity across the organization. The whole Executive Committee participated in the subcommittee with the CEO as its chair. The subcommittee received regular reports and updates on individual measures, case reports, and remediation taken. It also approved the annual Group Compliance roadmaps and reviewed the quarterly progress report. With the new operating model since July 2022, Clariant has a different composition of the subcommittee. Following the new bylaws, the subcommittee Charter will be reworked and submitted to the Audit Committee for approval. In Q3 and Q4 2022, the

subcommittee has had as attendance the CEO, the CFO, the General Counsel, the CHRO, the Head of Group Compliance, and, as a standing guest, Internal Audit.

Due diligence

Compliance and the highest ethical values apply not only to Clariant's own operations, but also to third parties acting for or on behalf of Clariant, like distributors, agents, and other service providers. They must undergo a detailed due diligence process to ensure that they are not involved in any form of bribery or compliance violation, that they are reputable and in good standing, and that they do not appear on any sanctions list.

The due diligence process applies to all new and existing sales agents and distributors and all regions. The relationship owner at Clariant describes the business relationship and business activity, explains the distributor's background, and declares the purpose of applying the due diligence process. Participants submit a self-assessment questionnaire afterwards.

Clariant assesses third parties against a predefined risk model: Enhanced due diligence is required for medium- and high-risk business partners. All business partners must confirm, however, that they have an appropriate compliance framework in place. They are also required to complete a relevant training program provided by Clariant. This process is currently under review to accommodate the new Swiss regulatory requirements for more transparency and social responsibility in reporting, which came into force on 1 January 2022 and is applicable from 1 January 2023.

Stakeholder-led regulatory proposals, such as the Responsible Business Initiative in Switzerland and the EU CSRD, increasingly demand greater transparency, particularly with respect to the protection of human rights. Clariant commits to enhancing its existing activities, proving its commitment, and focusing on → **human rights** in its own operations and the supply chain.

Clariant has introduced a clear statement related to human rights in its revised Code of Ethics, which was launched in 2021. Building on this commitment, the current Human Rights Framework as well as due diligence for suppliers is being reviewed for completeness and compliance with the upcoming regulations.

Information security and data privacy

Clariant has established an Information Security Program to create awareness and train employees on the appropriate use of data. The Information Security Program includes information classification, measures to avoid the loss of data, and measures according to the confidentiality, integrity, and availability (CIA) of information. To ensure a coordinated approach, Information Security Champions in each business and service unit support the implementation of the program in close collaboration with the IT Security team.

In 2018, Clariant implemented a Data Privacy Program in line with the General Data Protection Regulation (GDPR) of the European Union. The Data Privacy Program is still operational in 2022. An internally certified Data Privacy Organization is responsible for providing guidance and regular information, creating awareness, conducting trainings, and implementing the program throughout the company, with Data Privacy Champions in each business unit and region. Clariant's internal information channels (intranet, Yammer, etc.) make important information directly available to end users.

The Data Privacy Program consists of the Data Privacy Policy, a general directive on how to process personal data, standardized operating procedures (SOPs) on selected aspects of the Data Privacy Policy, and basic Data Privacy e-learning courses. The aim of the courses is to familiarize all employees with the principles of the Data Privacy Policy, to provide deep dives for more exposed functions like Human Resources, Marketing, IT, and Sales, and to introduce new employees to aspects of Data Privacy. All trainings include the main topics of the → **International Association of Privacy Professionals**. Following a »train the trainer« approach, the certified employees are responsible for creating awareness and building up the relevant knowledge throughout the company.

Against the backdrop of increasing global requirements concerning Data Privacy, Clariant adapts and develops its Data Privacy strategy as »Think Privacy 2.0.« In 2021, the company advanced the six strategic pillars, which were further enhanced in 2022: ensure compliance with regulations, document systems where personal data is processed, foster a risk-based approach, create awareness, train relevant employees, and monitor program execution. To fulfill GDPR requirements for the management of personal data, Clariant has integrated the information life cycle management (ILM) concept into its SAP system.

Many countries now have strict legal frameworks in place to protect the Data Privacy rights of individuals and legal entities. Clariant rigorously monitors regulatory changes and takes necessary measures. For example, in 2020, when the Schrems II court decision invalidated the EU-US Privacy Shield and subsequently the Swiss-US Privacy Shield, Clariant immediately set up a project to address the required changes. The company has completed the implementation of the new standard contractual clauses (SCCs) adapted by the EU and, in the reporting year, has been implementing the upgrade of the revised Intragroup Data Processing and Transfer Agreement (IGDTA) in this respect.

Strategic Integrity Roadmap

Clariant's Strategic Integrity Roadmap lays the foundation for the company's ethics and integrity strategy, the purpose of which is to foster an ethical mindset and responsible behavior in the workforce. The Strategic Integrity Roadmap is the overarching document to implement the highest standards for responsible business conduct around five pillars: leadership engagement; communication and training; legal and compliance risk assessment; standards and controls; and monitoring, auditing, and reporting.



The roadmap is a detailed plan, including 22 key performance indicators from these categories, which the Executive Committee and the Audit Committee set in 2018, and has continued to be in effect throughout the reporting year. Updates on progress and measures are provided quarterly to the ECS E&R and biannually to the Audit Committee. Clariant continuously evaluates the indicators to improve the effectiveness of its approach. The Audit Committee, on behalf of the Board of Directors, approves the Strategic Integrity Roadmap annually.

Code of Ethics

A central instrument to ensure ethical behavior under the roof of the roadmap is Clariant's Code of Ethics, »We Reflect Ourselves,« which guides employees in their decisions and actions. Following the release of the Strategic Integrity Roadmap, Clariant revised its former Code of Conduct into the Code of Ethics in 2019 and 2020. It was launched in February 2021. Since 2022, the Code of Ethics has been available in Korean and Japanese, among other languages.

The new Code of Ethics outlines the company's ethical commitments and supports employees in reflecting on responsible actions and decisions. In addition, Clariant launched a tool called »Integrity Yes Check.« It helps employees to ask questions related to their daily work to find out whether they are on the right track or should seek support. The Code of Ethics is value-based and designed around Clariant's eight guiding principles:

- We treat each other with respect.
- We comply with highest ethical standards and the law.
- We put safety first and are committed to protecting the environment.
- We are committed to fighting corruption.
- We care about our community and behave as a good corporate citizen.
- We handle information with care.
- We communicate responsibly.
- We take care of our resources.

Until October 2021, Clariant rolled out the Code of Ethics with monthly campaigns and interactive virtual events to reach all employees, despite pandemic circumstances. The company presented the eight principles in webinars, articles, interviews, and videos. In addition, for every principle, it described three dilemmas relevant to all employees, particularly to its site personnel. Supervisors, managers, and global leaders used them to engage in dilemma-based discussions to make the principles more tangible. In the rollout campaign, the Executive and Senior Management committed to living up to the Code of Ethics and gave an integrity pledge. In October 2021, Ethics & Integrity asked all employees (including management) to provide their personal Integrity Pledge in the form of a short text/sentence. 1 637 employees made a pledge.

In September 2022, Ethics & Integrity initiated the rollout of a new Code of Ethics e-learning to promote greater understanding and to explore Clariant's principles and values in a journey through the new Clariant Code of Ethics e-learning. It will be rolled out in 9 modules through 2022 and 2023.

Anti-bribery, anti-corruption, antitrust

In addition to its global anti-bribery and anti-corruption policy (Anti-Bribery, Anti-Corruption, and Anti-Money Laundering Policy) and gifts and entertainment policy, Clariant has developed local policies regarding gifts, entertainment, and community engagement work. The company also has a comprehensive anti-trust compliance program and guidelines, which it updates regularly. It particularly investigates corruption risks during reviews of high-risk businesses in high-risk environments with high-risk customers.

In 2020, Clariant drafted a holistic fraud program, implemented a third-party risk management system, and mandated job rotation for employees in exposed functions whenever possible. It developed the fraud program further in 2021 and has reimplemented it in 2022 with key performance indicators set and monitored.

Investigation process

With the new Code of Ethics, Clariant has updated its investigation process. The nine-step-approach applies to all reported concerns and breaches of the Code of Ethics. Corporate Functions (Group Compliance, Group Human Resources, Corporate Audit, ESHA, and other functions where appropriate) are responsible for the investigation and have received appropriate training. Remediation lies with the global ECS E&R and the regional Ethics and Risk Management Committees. The company tracks the number and type of process changes made in response to allegations. → Read more in Figure 005.

Clariant Integrity Line

In addition, employees and business partners can confidentially report malpractices, violations of the Code of Ethics, and workplace-related compliance issues through the »Clariant Integrity Line«. Reports can be anonymously made if preferred by a reporter. Integrity Line is an independent third-party operated platform, and available in multiple languages 24/7 via an easy-to-use online portal. The Integrity Line will be adapted to the legal requirements of the EU whistleblower directive. Local legal requirements of EU member states affected will be implemented.

INTEGRITY LINE

	Total 2022	2021	2020	2019	2018
Cases submitted via the anonymous Integrity Line	120	82	64	99	95
thereof fully or partially substantiated	22	31	17	8	29
thereof closed during the year	69	56	38	31	72
Questions submitted via the anonymous Integrity Line	20	13	9	17	9
Total submissions	140	95	73	116	104

In 2022, Clariant received 20 questions and 120 reports through its Integrity Line. One case can relate to several issue types. Of the reports, 53 were related to business integrity, 62 to the treatment of employees (of which 17 related to the same concern), 7 to health and safety or environmental violations, and the remaining cases related to quality concerns, and others. 22 cases were substantiated fully or partially. 35 cases were unsubstantiated.

The increase in the reports received is partly connected to the focus on fostering the speak up culture that Clariant has adopted since 2018. The company has worked on the communication, training and also on delivering to what we promise to our colleagues. The launch of the new Code of Ethics, together with its commitment to zero tolerance related to retaliation if the report is provided in good faith, gave an additional boost.

Training and communication

Clariant has set a target of mandatory compliance trainings as part of employee performance management. The company offers regular e-learning courses on anti-bribery and anti-corruption as well as micro learnings on speaking up, nonretaliation, the Integrity Line, trade compliance, third-party risks, bribery and corruption, conflict of interest, and theft and misuse of sensitive information. In 2022, a total of 28 649 trainings were completed on elements of the Group Compliance programs. Special target groups, like employees with higher exposure, receive further face-to-face trainings. The company also familiarizes new employees with the Code of Ethics as well as anti-bribery and anti-corruption policies in introductory trainings. Classroom trainings and e-learning on antitrust matters are mandatory for employees working in procurement, marketing, sales, and other relevant functions. Clariant developed a training curriculum in 2021, which defines the frequency, target groups, and further details. It was put into practice in 2022.

In addition, Clariant started a new »Ethics Dialogues« format in Latin America in 2021. It was planned in 2022, to hold a Global Ethics Dialogue and regional Ethics Dialogues in all regions. Due to the implementation of the new organizational structure and

COMMUNICATION AND TRAINING ON ANTI-CORRUPTION POLICIES AND PROCEDURES

	Total 2022	2021	2020	2019	2018
Percentage of members of the Board informed about anti-corruption policies (%)	100	100	50	100	50
Percentage of employees informed about anti-corruption policies (%)	99	3	14	90	40
Percentage of business partners informed about anti-corruption policies (%)	80 ⁴	70	60	60	40
Percentage of members of the Board who received anti-corruption training (%)	36	100	50	100	50
Percentage of employees who received anti-corruption training (%)	99	3	14	86	30
Percentage of employees who received compliance training (%)	98	81	14	86	45
Number of employees trained on elements of the Group Compliance Programs ¹	28 649 ³	11 751	n.a.	n.a.	n.a.
Number of participants in »Ethics Dialogues« ²	641	1 500	1 000		

¹ Headcounts

² This format was introduced in 2020.

³ This number represents the number of trainings completed by employees with a Clariant e-mail. In this number there are double counts, as one employee has been invited several times for the Code of Ethics e-learning and other e-learning in 2022.

⁴ 80% is an estimation based analysis run on our business partners

operational principles in the new Management Bylaws, the initiative was postponed to 2023.

Since 2020, Clariant has trained more than 5 000 employees in its antitrust training campaign with more than 380 global webinars.

Compliance incidents

During the annual external audit cycle, there is also a review of the Integrity Line, case management handling, reporting, and program oversight.

Noncompliance

In 2022, four allegations regarding bribery, corruption, and kickbacks were brought forward. Three were still pending at the end of 2022. There were no legal proceedings against Clariant or its employees for alleged corruption, and Clariant did not terminate relationships with business partners (agents, distributors, or consultants).

Anti-competitive behavior

In 2022, there were no reported legal actions for anti-competitive behavior or antitrust or monopolistic practices. There remains a pending annulment action from 2020 already addressed by the company.

Compliance with laws and regulations

In 2022, Clariant received five fines (> CHF 10 000) for noncompliance with environmental laws and social regulations.

SUPPLY CHAIN RESILIENCY

Building a resilient supply chain ensuring business continuity and systematically integrating sustainability practices will remain paramount for Clariant. In an increasingly unpredictable environment, Clariant does not stand still and is determined to further strengthen its position by securing customer supply and balancing customer and consumer interests and demands for low-carbon material and products.

Aside from managing persisting turbulences in the supply chain related to the pandemic, additional challenges marked the reporting year 2022, such as the war on Ukraine, resulting in increased complexity, the risk of unpredictable energy costs, and additional logistic delays. In 2022, Clariant again took care to prepare its supply chain for the future by anticipating bottlenecks and choosing its suppliers accordingly. Clariant prefers to cooperate with suppliers that deal with climate change by reducing their emissions and providing emergency schemes for extreme weather events. For regular external evaluations of risk profiles and supplier assessments, Clariant engages in the industry

initiative Together for Sustainability and collaborates with sustainability ratings provider EcoVadis. → [Read more about supplier evaluation.](#)

Long-established local and regional supply bases help Clariant to mitigate disruption risks. In 2022, this network has again proven to be valuable in dealing with geopolitical issues, trade disputes, factory shutdowns, or blocked traffic routes. In addition, Clariant's procurement managers continuously review and adapt supply strategies. Further priorities include increasing transparency through digital applications, such as tracking product carbon footprints, and the ability to illustrate how raw material issues affect the production of finished goods in order to see the sales at risk.

Through the Supplier Sustainability & Climate Initiatives team, which comprises five procurement experts with specific expertise and a responsibility for sustainable procurement, Clariant has made it a priority to integrate sustainability actions into procurement processes and its global supply chain. In line with customer and consumer interests, these actions aim to continuously increase the share of suppliers joining Clariant's supplier sustainability program and the share of low-carbon and renewable raw materials sourced.

Clariant incorporates sustainability standards into its procurement practices and demands transparency from its direct and indirect suppliers on various topics such as emissions, labor rights, human rights, and sustainable procurement practices. Considering the impact of changing legislation with respect to due diligence in supply chains regarding human and labor rights has been another focus in 2022 and will require further analysis and actions in the future. → [Read more in the chapter Human and Labor Rights.](#)

Management approach

Clariant's backbone for supply chain resiliency and sustainability comprises 70 production sites in 24 countries. Global responsibility lies with Clariant's Supply Risk Management, which reports to the Head of Center of Expertise. It develops and deploys Clariant's strategy for supply risk management and supports Group Procurement Services, Global Business Services, business

PRODUCTION SITES AND FACILITIES

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Production sites ⁴	70	n.a.	70	79	126	118	125
Countries with production facilities	24	n.a.	24	27 ²	39	38	39
Production (in m t) ³	3.80	n.a.	3.80	4.43	4.1	4.25	4.34
Investment in property, plant, and equipment (in CHF m)	n.a.	n.a.	209	357	288 ¹	273	237

¹ Restated

² The sum does not add up as in some countries there are productions sites for both continuing and discontinuing operations.

³ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

⁴ Two sites that are not in the reporting scope are excluded from the count

RAW MATERIAL PROCUREMENT ¹

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Raw materials procured (in m t)	3.50	n.a.	3.50	3.67	2.92	3.13	3.31
Percentage of the procurement budget that is used for significant locations of operation and spent on suppliers local to that operation (%)	89.3	n.a.	89.3	87.1	87.6 ⁴	88.0	88.3
Asia-Pacific (in CHF m)	376	n.a.	376	501	426	597	672
Of which with local suppliers (in CHF m) ²	367	n.a.	367	476	405	564	641
Number of local suppliers ³	679	n.a.	679	1 422	2 296	2 422	2 527
Europe (in CHF m)	1 164	n.a.	1 164	1 255	1 017	1 232	1 340
Of which with local suppliers (in CHF m) ²	1 058	n.a.	1 058	1 088	909	1 117	1 228
Number of local suppliers ³	751	n.a.	751	840	1 374	1 416	1 514
Latin America (in CHF m)	272	n.a.	272	234	207	262	320
Of which with local suppliers (in CHF m) ²	195	n.a.	195	161	140	176	213
Number of local suppliers ³	452	n.a.	452	784	1 065	1 088	1 085
Middle East/Africa (in CHF m)	72	n.a.	72	54	67	99	106
Of which with local suppliers (in CHF m) ²	43	n.a.	43	33	37	55	57
Number of local suppliers ³	78	n.a.	78	124	358	395	378
North America (in CHF m)	375	n.a.	375	307	311	453	510
Of which with local suppliers (in CHF m) ²	353	n.a.	353	288	285	419	464
Number of local suppliers ³	326	n.a.	326	469	927	979	930
Grand Total (in CHF m)	2 258	n.a.	2 258	2 352	2 027	2 642	2 948
Of which with local suppliers (in CHF m) ²	2 016	n.a.	2 016	2 048	1 777	2 330	2 603
Number of local suppliers ³	2 286	n.a.	2 286	3 639	6 020	6 300	6 434

¹ Duplicate counts possible. One supplier may supply to continuing and discontinued operations.

² Raw material spending of Clariant production sites in this region

³ Regional suppliers that supplied Clariant (production) sites

⁴ Continuing operations only



units, and service units in reducing their risk exposure. Supply strategies are aligned with each business unit.

The Supplier Sustainability & Climate Initiatives team is responsible for setting the sustainable procurement strategy and implementing supplier sustainability projects globally. The team reports to the Head of Procurement and includes regional sustainability specialists for Europe, Asia-Pacific, Middle East and Africa, and the Americas.

Clariant continuously enhances the breadth and depth of its Procurement Sustainability Roadmap. It sets annual targets for supply chain sustainability, as well as Scope 3 GHG reductions, and tracks them monthly in management committee meetings. The company draws from insights and feedback gathered through external evaluations, industry benchmarks within and outside the chemical industry, and conference participation.

Clariant actively measures and manages the performance and behavior of its suppliers. For this purpose, the company has set individual targets that represent all its relevant specifications and needs. It conducts an annual supplier evaluation through a lean questionnaire, while holistic risk management processes allowing for comprehensive insights in Clariant's key supplier base are under construction.

Supply chain policy

The → **Supplier Code of Ethics** of January 2022 reflects the principles of the UN Global Compact initiative, the global chemical industry's Responsible Care® initiative, the OECD Conflict Minerals Guidance, and Clariant's Policy Statement on Human Rights and is part of the company's general terms and conditions of purchase. It outlines principles for the sustainability performance of suppliers

and sets standards related to people (the human scope), planet (the environmental scope), and integrity (the ethical scope).

Clariant selects and manages its suppliers, outsourcing partners, and service providers based on a comprehensive set of criteria. In addition to economic and product-specific aspects, the company considers environmental, labor and human rights practices, sustainable procurement practices, as well as integrity and ethics. In 2021, Clariant published its → **Supplier Sustainability Journey**, which outlines the company's sustainability expectations toward suppliers.

Supply risk evaluation is an integral part of Clariant's supply strategy. Therefore, its supply chain setup includes redundant sourcing, a notification system for crucial events, regular tracking of open orders, constant contact with its suppliers, emergency team meetings to define mitigation measures, cross-functional cooperation, and supply contracts to secure favorable prices.

Supply chain targets

Compared to 2021, Clariant was able to reduce → **Scope 3 emissions (Category 1)** from purchased goods and services around 4% in 2022. In the years ahead, Clariant will intensify its activities around developing low-carbon solutions to be able to achieve the sustainability target it has set itself in 2021, which is a reduction of Scope 3 emissions of 14% by 2030. In addition, collaboration with suppliers to set GHG reduction targets and disclose carbon footprints becomes more important. Read more about → **Clariant's Sustainability Targets** and the activities to change Clariant's impact in the Chapter → **Resource Efficiency and Environmental Protection**.

In its **Procurement Sustainability Roadmap**, Clariant defined the following indicators with respect to supply chain sustainability due diligence:

- spend covered by sustainability assessments or audits;
- spend with risk suppliers;
- number of new sustainability assessments (EcoVadis) generated;
- number of new sustainability audits generated;
- number of suppliers that have improved from one assessment or audit to the next.

»Over the past two years, we have had a particular emphasis on increasing the quality of the emission factors for our raw materials and to selectively switch supplies to sources with lower emissions.«

Bettina Siggelkow, Head of Sustainability Affairs

PERCENTAGE OF SUPPLIERS ASSESSED VIA ECOVADIS

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Percentage of direct spend for raw materials from suppliers covered by shared sustainability ratings (EcoVadis)	89	n.a.	89	87	84	78	74



Working together for a better footprint

Partnerships and collaborations are increasingly important to leverage potential sustainable synergies. The Procurement team has started to work with Jiangxi Fuexin Medicine Chemical Co., Ltd., a strategic supplier from China. Through purchases of hydropower and the future installation of solar panels, Jiangxi Fuexin Medicine Chemical Co., Ltd., will reduce the carbon footprint of its operations and of the products supplied to Clariant. It is expected that this collaboration will lead to a reduction of approximately 870 tons CO₂ per year, thereby contributing to the Clariant Scope 3 target achievement. Clariant is going to continue to explore potential collaborations as a differentiation opportunity.

Internal sustainability trainings

Clariant Group Procurement Services (GPS) organizes annual procurement-specific internal trainings so that employees can adequately evaluate performance in the supply chain and incorporate sustainability aspects into their purchasing decisions. In 2022, GPS organized 20 trainings mainly for procurement managers, the corporate sustainability team, and sustainability experts from business units. New employees in procurement also receive special training and support material. Clariant introduced several remote training formats, mainly on Scope 3 greenhouse gas emissions. 94% of procurement employees have been trained in sustainability-related topics by the end of the reporting year.

Proportion of spending on local suppliers

Whenever possible, Clariant procures goods and services from local suppliers that fulfill all procurement criteria. Supporting regional economic development in this way is particularly relevant for – and encouraged in – key emerging markets such as Brazil, China, and India. Clariant defines local suppliers as suppliers based in the same country or region where it uses the materials and services.

Supplier evaluation

To evaluate the ESG risk profile and increase the sustainability performance of its supply chain, Clariant relies on the external assessments and audits of the »Together for Sustainability« (TfS) initiative. TfS is a non-profit organization with a joint approach by the procurement leadership of large chemical companies, that uses the internationally recognized EcoVadis evaluation platform to measure the sustainability performance of its chemical suppliers. Clariant also considers Responsible Care® audits, the Sedex Members Ethical Trade Audit (SMETA), and the Cefic Safety and Quality Assessment for Sustainability (SQAS).

Suppliers are selected for participation in an assessment or an audit based on country and business risks, global category priorities, and purchase volumes. Outsourcing these assessments and audits to external providers guarantees process robustness, independence, confidentiality, and conformity with antitrust and competition laws. Clariant supports strategic suppliers that outperform their peers in assessments and audits and continuously improve their performance.

Through the TfS initiative, Clariant has online access to a large number of assessment scorecards and audit reports generated on behalf of other TfS members. In addition to an overall score, they contain individual scores for environmental topics, labor and human rights, ethics, and sustainable procurement. Furthermore, they provide detailed feedback on specific improvement areas and guidance on where and how to address the identified gaps.

In 2022, TfS members initiated 1 545 new supplier assessments and 5 477 reassessments, of which 64% resulted in improved scores. At the end of the year, the TfS pool included 13 472 actively managed assessments. The number of new audits among TfS members amounted to 378. Clariant correlates these assessments and audits against its own supplier base to determine the share of total spend covered by TfS assessments, which in 2022 amounted to 89%.

New suppliers, undergoing the Integrity Next self-assessment

In 2022, Clariant started business with more than 4 000 new suppliers. Small indirect spend vendors represented 70% of them. These suppliers are invited to fill in the Integrity Next Self Assessment form, which covers other topics besides sustainability, such as cyber security or sanction list.

Negative environmental and social impacts in the supply chain and actions taken

Following a comprehensive approach for supplier assessments and audits, Clariant monitors, measures, and improves supplier performance, identifies improvement opportunities, and embeds sustainability as an integral part of supplier selection and management. These actions decrease supply chain risks.

NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS IN THE SUPPLY CHAIN

	Total 2022	2021	2020	2019	2018
Number of suppliers assessed for environmental impacts	4 242	4 876	4 205	9 434	10 566
Number of suppliers identified as having actual or potential significant negative environmental impacts	400	524	472	784	955
Percentage of suppliers identified as having actual or potential significant negative environmental impacts and with whom improvements were agreed upon as a result of assessment	44	13	14	18	20
Number of suppliers assessed for social impacts	4 242	4 876	4 205	9 434	10 566
Number of suppliers identified as having actual or potential significant negative social impacts	242	357	342	1 060	1 205
Percentage of suppliers identified as having actual or potential significant negative social impacts and with whom improvements were agreed upon as a result of assessment	47	9	14	16	26



Clariant clearly and consistently outlines its expectations of suppliers, as well as indicates to suppliers how they can improve their performance. If a TfS assessment yields an unsatisfactory result, Clariant develops Corrective Action Plans (CAPs). Depending on the TfS scores, CAPs can be recommended or mandatory. They can also be limited to particularly critical topics, for example, environmental policy, diversity and anti-discrimination measures, or labor and human rights. In 2022, 44% of the 400 suppliers identified with significant negative environmental impact followed a CAP. The identified negative environmental and social impacts were mostly related to weaknesses in suppliers' sustainability management systems, such as a lack of measures in employee health and safety, limited reporting with respect to environment or labor and human rights, as well as missing sustainable procurement policies. The suppliers were mainly located in Asia, North America, and Latin America.

CAPs are determined in accordance with the Supplier Sustainability Journey and Consequence Management Framework. These have turned out to be helpful tools to improve performance in the company's supply chain and to mitigate sustainability risks. However, if suppliers do not improve over time, Clariant reduces purchase volumes and sometimes, although rarely, terminates the business relationship. In 2022, no business relationship with suppliers was terminated as a result of the environmental and social assessment, as Clariant focused on collaborating with its suppliers to close the gaps.

Clariant evaluation as supplier

In 2022, Clariant received a score of 75 for its own EcoVadis assessment. The company scored particularly high in sustainable procurement (90 points), which acknowledges its advanced sustainability system of supply chain management.

Supplier trainings

Clariant procurement provides key suppliers with free annual trainings, webinars, and materials. They cover a variety of topics, including the TfS assessment and reassessment process, improving sustainability performance, and working on Corrective Action Plans (CAPs).

In 2022, Clariant invited suppliers in Europe, the Middle East, Africa, and India, as well as the Asia-Pacific region, North America, and Latin America, to participate in multiple trainings and webinars facilitated by TfS. They emphasized the importance of sustainable procurement and helped suppliers to understand the TfS requirements and opportunities, as well as the EcoVadis methodology, so that they can further improve their assessment scores. Additionally, TfS launched the TfS Academy in 2022, a complementary e-learning platform for buyers and suppliers. It provides support in multiple languages on various sustainability topics. → [Read more on TfS.](#)

INNOVATION AND TECHNOLOGICAL ADVANCES

A strong focus on innovation and Research & Development is one of the four dimensions of Clariant's purpose, with the innovative chemistry expanding what is possible to the benefit of all. Clariant responds to emerging macro trends to stay ahead in dynamic markets and create high-performing solutions for rapidly changing customer needs.

Innovation drives profitable growth in all businesses and provides the capabilities to position Clariant and its customers at the forefront of a sustainable world. The company's cutting-edge innovations meet the increasing demand for sustainability performance and create long-term value for Clariant's stakeholders.

Innovation activities at Clariant focus on products, processes, and services along the company's entire value chain, from suppliers to internal operations, customers, and end users. A culture of innovation is also an important factor in creating a compelling work environment, boosting employee motivation, and helping Clariant to attract and retain talents.

Management approach

Clariant's Global Innovation & Sustainability Council (GISC) oversees all innovation activities across the Group. It shapes the sustainability and innovation agenda of the company, focusing on a sustainability-driven portfolio transformation. Under the lead of the CTSO, the GISC comprises the business units' innovation heads, the head of sustainability transformation, the technology and innovation office, as well as the CEO and the board delegate of the Innovation and Sustainability Committee as permanent guests. Other key functions join upon invitation.

The charter of the GISC outlines its focus: reviewing Clariant's sustainability, innovation, and technology strategy; ensuring that value creation is sustainability-focused and market- and customer-driven; challenging the effectiveness and efficiency of strategy execution; deciding on global or regional cross-BU programs, projects, and initiatives; and acting as an advisory platform to the Executive Committee.

In 2022, Clariant's Service Unit Group Innovation & Sustainability (GIS) applied structural changes to further support the necessary link between innovation and sustainability. The GIS now consists of the following units: Environment Safety Health Affairs (ESHA), Integrated Group System Management (IGSM), and Global Product Stewardship and Sustainability Transformation. A lean Program Management Office & Innovation Center Management Function manages Clariant's Innovation Centers and ensures standardized processes, tools, and reporting. Group Biotechnology combined with the Business Line Biofuels & Derivatives, while Global IP Management was merged into Group Legal. Emerging Technologies was subdivided into the Analytical Sciences unit, which joined the new GIS organization. High-Throughput Experimentation and Digital Formulation Factory were integrated as new units into BU ICS to have a closer alignment on this technology platform with the business. Clariant regularly reviews its innovation approach as part of the Strategic Management Process.

Clariant actively contributes to the update of the World Business Council for Sustainable Development (WBCSD) framework for portfolio sustainability assessments (PSAs). It contributes as a member of the working group developing the methodological update according to the requirements of the EU Green Deal and other initiatives. Clariant is using its Portfolio Value Program (PVP) as central steering element of the portfolio towards more sustainability. The PVP was introduced in 2012. It was developed in cooperation with the internationally renowned Collaborating Center on Sustainable Consumption and Production (CSCP), a nonprofit organization and »think and do tank« founded by the United Nations Environmental Program (UNEP) and the Wuppertal Institute.

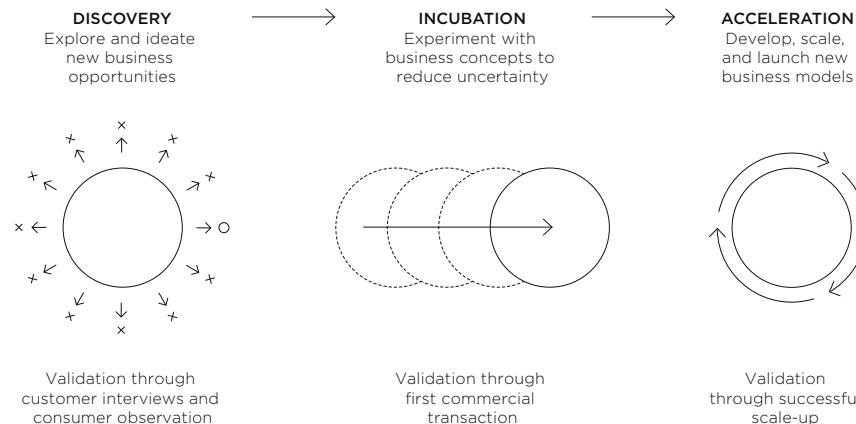
In 2022, the Portfolio Value Program (PVP) methodology was updated in anticipation of customer requests, upcoming legislation, and trends. Based on 39 sustainability criteria covering all life cycle phases, the assessment allows Clariant to design and promote new solutions with less footprint and a higher handprint. The updated PVP, also called PVP 2.0, enables Clariant to provide more accurate and credible information on the performance of the portfolio across all life cycle phases. This helps Clariant's customers to have a deeper understanding of the effects, releases, and emissions of Clariant's products and services. → [Read more on the Portfolio Value Program](#).

Strategic innovation process

Clariant's innovation pipeline is built along the Idea to Market process, one of the three value-creation processes at the core of Clariant's business model. This process involves scouting global trends, identifying business opportunities, exploring unmet customer needs, developing products, and commercializing and monitoring business performance. It is essential for developing a well-filled product and service pipeline that delivers marketable innovations.

STRATEGIC INNOVATION PROCESS: DISCOVERY, INCUBATION, ACCELERATION (DIA)

To accelerate the innovation process and establish new business in uncertain environments, Clariant implemented a strategic innovation process, which consists of three phases: discovery, incubation, and acceleration. Specialized teams with diverse mindsets, agile project management, and lean start-up methodologies allow fast learning to quickly confirm or reject given assumptions at the basis of a business idea. Once an idea proves viable, Clariant can draw on its production network and market access to commercialize the product with short lead times. This innovation process concentrates on strategic opportunities or threats beyond the current market and/or technology focus that have a significant financial or sustainability impact. The process follows a lean, customer-centric, and evidence-based approach.



According to the Idea to Market process, Clariant groups all innovation projects into three categories. Class 1 projects have a sales potential in the double-digit million CHF range and have strong strategic relevance for Clariant. These projects are managed by Innovation Black Belts. Innovation Black Belts typically dedicate their full working time to managing Class 1 projects. Class 2 and Class 3 projects are usually led by Innovation Green Belts, who dedicate part of their work time to these projects parallel to other R&D tasks. Innovation Black and Green Belts are trained and coached on tools and process know-how by Innovation Master Black Belts.

Development of key performance indicators

After achieving its growth target for innovation sales in 2021, Clariant met expectations again in 2022 despite supply chain shortages and the challenging economic environment linked to the COVID-19 pandemic.

Clariant endeavors to realize a local currency growth rate of 2–3% through innovation. The target is to achieve 1–2% sales growth from top-line innovations alone. This means innovations that create new sales in new markets, by which they actively contribute to Clariant's net growth. In 2022, innovation sales of the continuing businesses strongly contributed to the company's overall recovery, growing by more than 5.5%. This was a result of Clariant's continuous commitment and efforts to understand its customers' needs and to deliver better and more sustainable solutions.

Research & Development spend in 2022 was CHF 160 million for the continuing businesses, with a slight increase compared to CHF 155 million in 2021 continuing business only. As a share of sales, R&D spending was 3.1%, a decrease compared to 2021, reflecting the efficiency gain in the streamlined R&D organization after the divestment of Business Unit Pigments and sales growth in 2022. R&D employees (in full-time equivalents) decreased from >860 to >785 for continuing operations.

Clariant's state-of-the-art equipment and infrastructure in three Clariant Innovation Centers, ten contract R&D Centers and dedicated Technology Centers, and >45 regional Technical Centers form the basis for successful innovation while ensuring proximity to the customer. In 2022, the overall number of active projects in the innovation pipeline slightly increased to >330 projects in the continuing businesses. With still more than 65 active scientific collaborations, the number decreased compared to 2021, as several projects were completed during last year.

In 2022, Clariant slightly increased the number of employees trained as Innovation Belts to >375. These employees are a key factor in ensuring a well-filled project pipeline and efficient project management. The number of Class 1 projects decreased from >65 to >60 in comparison to the previous year.

At the end of 2022, Clariant's continuing operations' patent portfolio counted >4 300 patents, and the continuing operations' trademark portfolio included >5 900 trademarks. The number of patents and trademarks decreased in comparison to 2021 due to the divestment of Business Unit Pigments, as well as due to stringent portfolio optimization measures.

Technology platforms

Clariant has structured its Research & Development activities along five technology platforms: Chemistry & Materials, Biotechnology, Catalysis, Process Technology, and Emerging Technologies. All technology platforms collaborate closely with the business units to ensure that technology push and market pull go hand in hand.

The Emerging Technologies Unit

The Emerging Technologies Unit is a central platform for technologies on the rise. The goal is to deliver major innovative solutions for the business units by detecting upcoming megatrends with cross-BU relevance that are key to Clariant's competitiveness. The unit acts as an entry point for external technology leads and ensures their initial validation and stringent follow-up until successful integration into the business units.

INNOVATION AND TECHNOLOGICAL ADVANCES

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Growth through innovation (%) ²	>5.5	n.a.	>5.5	>3.5	>1.5 ³	<3.0	>3.0
Research & Development expenditures (CHF m)	160	2	162	167	195 ^{1,3}	207	209
Research & Development expenditures as share of sales (%)	3.1	n.a.	3.1	3.2	3.8 ^{1,3}	3.2	3.2
Clariant Innovation Centers ⁴	3	n.a.	3	3	n.a.	n.a.	n.a.
Research & Development Centers and dedicated Technology Centers	10	n.a.	10	10	8 ³	8	8
Technical Centers	>45	n.a.	>45	>45	>50 ³	>50	>50
Patents (year-end)	>4 300	n.a.	>4 300	>5 100	>5 400 ³	>6 500	6 700
Trademarks (year-end)	>5 900	n.a.	>5 900	>7 400	>7 400 ³	>9 000	8 900
Active innovation projects	>330	n.a.	>330	>325	>350 ³	>375	>375
Of which Class 1 projects with double-digit million sales potential or of strategic relevance	>60	n.a.	>60	>65	>55 ²	>65	>70
Scientific collaborations	>65	n.a.	>65	>80	>100 ³	>125	>125

¹ Restated

² Contains the contribution to growth of the innovation portfolio from both Top Line Innovation and Life Cycle Innovation. Potential cannibalization of existing sales by Life Cycle Innovation has not been excluded.

³ Excluding Business Unit Masterbatches

⁴ The categories of contract R&D sites were reorganized in 2021 due to changes in Clariant's R&D landscape after, e.g., divestments.

One current focus area of the Emerging Technologies platform is high-throughput experimentation (HTE). This approach combines research practices designed to deliver more information with less effort. It relies on automation and robotics, miniaturization, and parallelization to plan and execute experiments with significantly increased speed and optimized resource consumption. Combined with computational tools, intelligent experimental design, and cutting-edge data analytics, HTE enables Clariant to explore the full solution space and find correlations that are undetectable using traditional methods.

Transformational platform technologies such as HTE enable the digital transformation of R&D and innovation processes, accelerating the development of new products and the optimization of existing products, and reducing time-to-market. By generating very large sets of product performance data and efficiently exploring new research areas, HTE makes it possible to acquire in-depth knowledge and quickly identify new leads. Research topics include microbiological efficacy testing via high-throughput biological assays for personal care and crop applications, as well

as fast-response-unit-approaches for the discovery and development of optimized chemistries and formulations for hydrate inhibitors, pour point depressants, and asphaltene inhibitors for the oil business.

Through the development and integration of HTE techniques such as miniaturization, parallelization, and automation, Clariant R&D can evolve from labor-intensive, batch-based, semi-automated operations to fully automated experimental approaches with lower amounts of consumables and reduced energy costs, making existing processes more sustainable and economically viable, boosting safe and sustainable design of new chemicals, and ultimately reducing time-to-market of new offerings.

Besides high-throughput capabilities dedicated to catalyst R&D in Palo Alto (USA) and to biotechnology in Planegg (Germany), Clariant can rely today on two multipurpose HTE labs in Frankfurt (Germany) and Houston (USA), which are able to support formulation and synthesis processes for various segments and applications and quickly transition from one project to another. The value



of HTE as a technology platform promises to fundamentally transform the way Clariant tackles some of the most pressing sustainability challenges the company faces today in R&D and product innovation.

The Process Technology Unit

The Process Technology platform is a key enabler for Clariant's Sustainability Transformation and continuous improvement tool for process safety and reliability. Navigated by the global program »Process Innovation and Sustainability,« it supports the business units in continuously shaping their production processes, not only for state of the art, but also for upcoming new technologies. This facet assures Clariant's technological competitiveness in its manufacturing processes as well as its leading role in achieving its net zero emission target in operations by 2050.

With a regular systematic analysis of major technological risks and opportunities related to Clariant's production process landscape, the Global Process Technology platform identifies the most relevant focus areas for medium- to long-term process innovation. This assessment is conducted jointly with all business units as well as experts from the Group Innovation & Sustainability and the Group Operational Excellence organization, including regional hubs. A key element in this context is to increase the readiness level of the sites and plants for the successful execution of Clariant's sustainability roadmap. Most process innovation projects that were launched in 2022 are focused on reduction of CO₂ emissions, reduction of environmental pollutants in products, optimization of wastewater treatment, and reduction of energy consumption through electrification of processes and heat integration. In addition, the process innovation program and the process technology experts are being successfully involved in early phases of capacity expansion projects to ensure that strategic investments are based on state-of-the-art technologies versus multiplying current processes. Considering in particular the increasing environmental challenges regarding energy supplies, emission reduction, and water scarcity, it is crucial to find sustainable approaches to established ways of working for a green planet in near future.

To address these challenges, the program Process Innovation and Sustainability is built on a cross-functional collaboration between R&D, engineering, process technology, as well as energy experts. Furthermore, digital approaches and computational methods are involved as one of the key success factors for finding optimum process designs. Developing process technology hubs in the regions ensures that project execution takes place in close alignment with the local manufacturing sites and business unit partners and strengthens capability built in regions as driven by local market needs.

In a nutshell, the Process Innovation and Sustainability Program is the main foreseeable driver to ensure the viability of Clariant's manufacturing processes through »cradle-to-grave« technology and life cycle management.

Biotechnology

»Innovate for sustainability« is one of Clariant's values. Sustainability is becoming the focus of virtually all aspects of daily life. Replacing fossil-based raw materials with bio-based ones has been on the front burner of applied research activities at Clariant for several years. At Clariant, the Business Segment Biofuels & Derivatives focuses on turning »biomass residue streams« into valuable products through biological processes. The input »residue« streams can be as diverse as cereal straw, corn fiber, bagasse, or biomass-containing municipal waste, if they contain significant amounts of cellulose. Cellulose is a nonedible sugar-polymer and an important structural component of the cell wall of green plants. Cellulose is the most abundant organic polymer on earth and convertible into valuable raw materials.

The prime example of such an innovative application is the sunliquid® process. Clariant's Business Segment Biofuels & Derivatives developed a fundamental platform to access and release the polymer-bound sugars of cellulosic material. The released sugars can then be used as an energy source for microorganisms engineered to produce a broad range of fuels and/or biochemicals. In the sunliquid® process, a second biological step transforms the sugars to ethanol, allowing the production of non-food-competing bioethanol for more sustainable transportation. While

the transition to a sustainable bioeconomy is gaining momentum, Biotechnology is a key enabler for Clariant's Sustainability Transformation to leverage the full potential of renewable resources.

Key areas of innovation

The technology platforms fuel Clariant's innovation pipeline and drive progress in four key areas: bio-economy, hydrogen economy, circular solutions, and digital innovation. While Clariant already generates sales in these fields, the company aims to play an even stronger role in the future – by creating safer products and contributing to a more sustainable industry with a reduced CO₂ footprint and handprint.

Bio-economy

Clariant contributes to the → **bio-economy** with its sunliquid® technology – a sophisticated technology to convert lignocellulosic agricultural residues into second-generation bio-ethanol or cellulosic sugars forming a renewable basis for a broad range of chemicals. In 2022, Clariant officially inaugurated its sunliquid® plant in Podari, near Craiova, Romania, for the production of 2G bio-ethanol. Cellulosic ethanol is expected to play a crucial role in decreasing greenhouse gas emissions from the transport sector, as intended by the EU Commission in the Renewable Energy Directive (RED II). By sourcing feedstock locally, greenhouse gas emissions can be minimized, leading to more economic opportunities along the regional value chain. Besides being a drop-in solution for fuel blending application, the sunliquid® technology provides additional uses in downstream applications for sustainable aviation fuel and bio-based chemicals.

It is quite challenging to reduce the carbon footprint of the aviation sector due to the high aircraft operational energy. Sustainable aviation fuels (SAFs) are a key component of Clariant's technology pillar and an enabler to mitigate the environmental impact of aviation. Clariant has several touchpoints with sustainable aviation fuels across three businesses, both in the existing portfolio and with future opportunities. There are: advanced biofuels, purification aids and catalytic solutions. From the increased adoption of sustainable aviation fuels, a strong demand surge is expected for the mineral adsorbents and the sunliquid® business.

Clariant is committed to combating the threats of climate change. A major challenge is the high proportion of fossil carbon in many consumer products. By substituting fossil carbon with bio-based carbon, the earth's natural carbon cycle can be restored. In 2022, Clariant launched the new VITA range of bio-based nonionic surfactants that are 100% made from plants through bio-ethanol. The surfactants are fully segregated, meaning that the plant-based origin of their raw materials is fully traceable and measurable, with a 100% Renewable Carbon Index (RCI). Due to the biogenic carbon uptake of their raw materials, the VITA surfactants are natural CO₂ savers. Additionally, they have a chemical and performance equivalence in comparison with the fossil-based variety. Other bio-based products of Clariant include the biodegradable, low-carbon-footprint automatic dishwashing surfactant Genapol® Complete and the award-winning, multifunctional preservation booster Velsan® Flex, which is highly water-soluble, allowing formulation flexibility. Velsan® Flex has an RCI of 93%. The products have an outstanding compatibility with environmental labels.

Hydrogen economy

Clariant and Technip Energies reached another milestone by installing EARTH® technology at a large-scale hydrogen plant in one of Europe's biggest refineries. The revamp is expected to significantly increase the plant's production capacity. EARTH® is a pioneering drop-in solution that enables a capacity increase in the production of hydrogen by up to 20% while decreasing CO₂ emissions by up to 10% and reducing makeup fuel consumption by up to 50% per unit of hydrogen produced. The technology is carbon-capture-ready and can play a key role in global efforts to reduce emissions with low-carbon hydrogen.

Circular solutions

Circular Economy is one of Clariant's focus areas. Clariant's **EcoCircle initiative** focuses on circularity in the plastics industry.

Driven by its vision to enable a circular economy, Clariant launched an innovative portfolio of flexible custom solutions for the emerging market of chemical plastics recycling in 2022. The new HDMax® catalysts and Clarit™ adsorbents are designed for the purification of pyrolysis oil made from hard-to-recycle mixed plastic waste to achieve a cracker-compatible feedstock. The portfolio speaks to the need for flexible and economical solutions that enable producers to remove a wide range of contaminants that are continuously changing in the feed. The contaminant removal is possible regardless of process configuration and plastic waste feedstock. When HDMax® catalyst and Clarit™ adsorbents are combined, the adsorbents extend the lifetime of the catalyst by reducing impurities. The pyrolysis oils are made from a chemical recycling process that reduces the environmental burden created by plastic waste that would have been incinerated or landfilled. It then enables a circular value chain for the production of base chemicals.

Clariant not only provides circular solutions for the deicing industry but also fosters cooperation to enable sustainable mining. In 2022, Clariant introduced the Tailings Management Program and the global Competence Center for Tailings Treatment (CCTT) dedicated to developing chemical solutions. With the chemical solutions, Clariant aims for a more efficient waste treatment with less tailings dams. This will transform the way the industry handles mining waste. The CCTT comprises four complementary technology platforms: Flotation, Magnetic Separation, Dewatering and Rheology Modification. Flotation chemicals for slimes could help mines recover valuable minerals that are deteriorating, while flotation chemicals for secondary mining enable operators to reprocess old tailings. In addition, filter aids lead to a better dewatering of tailings, resulting in drier stacks and faster throughput. The Competence Center is an important milestone for Clariant's strategy to support the global mining industry's focus on sustainability.

In 2022, Clariant launched the D3 PROGRAM to offer more sustainable solutions to the oil and gas industry. D3 consists of three key pillars – Decarb, Densify, and Detax. Decarb utilizes nanotechnology and ingredients from renewable sources to reduce carbon emissions in customers' operations. Densify facilitates logistics improvements and furthers sustainability initiatives through a new application with concentrated products. Detox incorporates formulations with more environmentally acceptable raw materials. Key benefits of the program include simplifying logistics for both transportation and storage, introducing more environmentally acceptable formulations and concentrated ingredients that require smaller dosage application, optimizing onshore and offshore operations, and improving operational safety. Thanks to the D3 PROGRAM, more possibilities to positively impact oil and gas operations can be created.

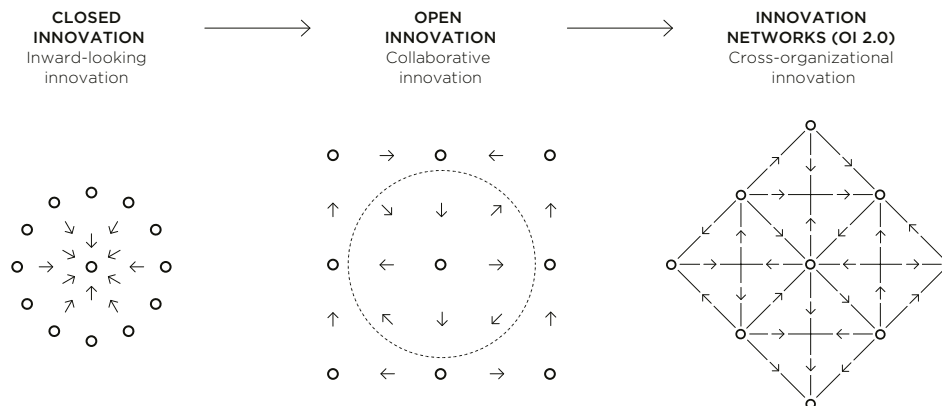
Digital innovation

Digital innovation at Clariant encompasses a full array of digital-relevant capabilities and tools, including lab automation, high-throughput experimentation, data science, computational science, and IT capabilities. By smartly leveraging such digital technologies at each stage of the product innovation cycle, Clariant is able to design new offerings, discover new applications for existing products, reduce environmental impact of chemicals, and maximize their sustainable value, while decreasing the overall time-to-market.

Besides investing in digitalization and continuously adopting digital technologies as they mature, Clariant has also recently launched the Digital Innovation Factory, an innovation program that drives business opportunities through a comprehensive digital approach, making it possible to continuously differentiate offerings and get better products to the market faster.

OVERCOMING INTERNAL AND EXTERNAL BOUNDARIES WITH INNOVATION NETWORKS¹

With the advancement of communication technologies (e.g., cloud computing, Internet of Things, big data, and social media), Open Innovation entered a new paradigm known as OI 2.0. This enriched the innovation ecosystems and fostered co-creative collaboration between all actors in a quadruple helix system (governments, academics, companies, and citizens), spanning organizational boundaries well beyond normal licensing and collaboration schemes. To keep up with OI 2.0, Clariant is introducing pragmatic approaches to accelerate in-house innovation efforts.



¹ EU Open Innovation Strategy and Policy Group (OISPG), 2013: Open Innovation 2.0: A New Paradigm

○ Internal boundary for innovation
● Idea/innovation/inspiration

→ Flow of information
— Connection, e.g., digital data

Initial focus has been given to selected business segments such as Paints & Coatings, where digitalization can significantly improve efficiency and effectiveness of formulation processes and simultaneously enable new digital business models and go-to-market strategies. Via the Formulation Factory approach, digital assistants support Clariant formulators and customers to quickly identify the most suitable products for a given application.

More recent Digital Factory activities are directed towards accelerating early discovery processes and step-change safe-and-sustainable-by-design initiatives to leverage portfolio enhancement opportunities and continuously differentiate offerings. These efforts further support the positioning of Clariant as a leader in Sustainability & Innovation.

Clariant completed the rollout of the newly implemented Electronic Lab Notebook (ELN) for digitalization of R&D data. The ELN has three core elements: a chemical inventory management system to backtrack and manage reagents used in laboratories, a study notebook with templates to enter R&D data, and analysis and visualization tools to analyze and correlate experimental data. In March 2022, new software improvements were released for better usability of the tool. Going forward, yearly updates are scheduled, starting from Q4/2023. In collaboration with a scientific R&D software company, further improvements to the system will be implemented. System improvements include functional extensions in the formulation module, which is used to document all chemical formulations, experiment ingredients lists, and created mixtures.

Innovation management formats

Clariant has two cutting-edge innovation formats: the Innovation Engine (iEngine) and the Innovation Garage (iGarage).

iEngines implement a sequence of virtual and face-to-face workshops to identify, prioritize, and develop high-quality, less obvious technology solutions for unmet customer needs. iEngines occur at a very early stage of the innovation process to eliminate less attractive options quickly, as developing viable technology options often takes several years.

iGarages host a cross-functional team that is supported by external experts and innovation coaches. The team convenes off-site over two to six months to develop business options in collaboration with prospective customers and other stakeholders. By applying agile design thinking and lean start-up methodologies, the iGarage format fuels the innovation pipeline through fast-paced, highly efficient ideation processes that support the development of market-validated innovations in discovery and incubation stages, which the business units subsequently scale further.

Clariant complemented these innovation management concepts with a lean four-week format called miniGarage. It is limited in scope and accelerates innovation projects by applying an outside-in view to a set of critical assumptions.

The formats take place according to the business units' needs and availability of prospective team members. In 2022, Business Unit Additives held an iGarage on alternative low-carbon footprint material streams for flame retardants. Business Unit ICS held two iGarages: The first was in the area of material Sustainable Palm Oil Sourcing, while the other was in the area of Crop Solutions. Business Unit Catalysts held an iGarage on Phthalate-Free Polypropylene Catalysts. All projects were aimed at developing more sustainable solutions for the respective business area. For each iGarage, more than 50 customer and industry expert interviews were conducted to better understand the market and upcoming business opportunities. Responsible use of limited natural resources was the target.

Innovation collaborations

Clariant continuously seeks collaboration with external partners for the promotion of innovation. Its vast network comprises of experts in various important fields.

The Open Innovation (OI 2.0) initiative supports Clariant's business units in identifying collaboration partners around the world, which connects Clariant to the external technology and innovation community. It opens the innovation process for collaboration with external partners, such as governments, academics, companies, and citizens. It also introduces external ideas and tools to expand the innovation pipeline value and outputs. An important element of Open Innovation is the crowdsourcing of technology solutions through Open Innovation challenges. Clariant's EcoCircle program is a prominent example of the OI 2.0 approach.

Low-Carbon Emitting Technologies (LCET) initiative by the World Economic Forum

Clariant is a founding member of the → **Low-Carbon Emitting Technologies (LCET) initiative** by the World Economic Forum and the world's leading chemical producers. It aims to accelerate the development and upscaling of low-carbon emitting technologies for chemical production and related value chains. It is the first CEO-led coalition in the chemical industry, focused on transformation toward a decarbonized and circular future. LCET targets include the use of alternative feedstocks as plastic waste, CO₂, and biomass, which are highly related to Clariant, for example, through the company's activities for utilizing agricultural waste to produce sunliquid® 2G ethanol.

SusChem

Clariant is committed to the initiatives and strategies of the European Technology Platform for Sustainable Chemistry (SusChem ETP), playing an active role on its board of directors and management team. SusChem ETP's vision is a competitive and innovative Europe where sustainable chemistry and biotechnology provide solutions for future generations. SusChem ETP focuses on technology priorities across advanced materials, advanced processes, and digital technologies. It also addresses horizontal topics such as sustainability assessment innovation, the safe-by-design design

nation for chemicals and materials, and the enhancement of education and skills capacity in Europe.

Processes4Planet by the European Commission

Processes4Planet is a cross-sectoral public-private research and innovation partnership between industry and the European Commission. It brings together process industries (chemicals, refineries, steel, cement, minerals and ores, ceramics, nonferrous metals engineering, water, and paper), small and medium-sized enterprises, research and technology organizations, NGOs, regions, and others. Processes4Planet is consistent with the European Commission's Industrial Strategy for Europe and the EU Green Deal. The partnership aims to develop and deploy the innovations needed for a profound transformation of the European process industries to make them circular and to achieve overall climate neutrality at the EU level by 2050, while at the same time enhancing their global competitiveness.

Circular Bio-Based Europe Joint Undertaking

In the context of the European Green Deal, the European economy needs to become climate neutral, more circular, and more sustainable while remaining competitive in the global market. A strong, resource-efficient, and competitive bio-based innovation ecosystem can decrease Europe's dependency on and accelerate the substitution of nonrenewable fossil raw materials and mineral resources. The bio-based industries can help Europe become the world's first climate-neutral continent by replacing nonrenewable fossil resources with waste and sustainably sourced biomass to produce industrial and consumer goods. This is possible while increasing the sustainability and circularity of production and consumption systems. Clariant is committed to fostering the transition to a sustainable bio-economy. One way to drive this journey is Clariant's membership in the Bio-Based Industries Consortium (BIC) – with BIC representing the private party in a EUR 2 billion public-private partnership with the European Commission, called Circular Bio-Based Europe Joint Undertaking (CBE JU). Clariant is not only a founding member of BIC, but also active on the BIC Board, the BIC Programming Working Group, and the BIC Programming Core Team. CBE JU is supporting research and innovation activities in the field of sustainable bio-based solutions

under the umbrella of Horizon Europe, the EU's research and innovation program for 2021-2027. In 2022, a strong focus of BIC was the joint development of CBE JU strategic and programming documents. In a structured co-creative process between BIC, the European Commission, and the CBE JU Programming Office, calls for proposals were developed for publication in the Annual Work Programs.

Power-to-X initiatives

Power-to-X initiatives convert green electricity into chemical energy sources in order to store electricity and use it as electricity-based fuels for mobility or as raw materials for the chemical industry. The »Power« in »Power-to-X« stands for electricity from renewable sources, while »X« represents the many purposes it is used for and the many forms it is transformed into.

Carbon2Chem is a large national initiative in Germany, funded by the Federal Ministry of Education and Research. Together with partners from industry, institutes, and academia, Clariant develops technologies to reduce CO₂ emissions from steel manufacturing following the Carbon Capture and Utilization (CCU) approach. Based on the very promising results achieved in the first Carbon2Chem phase, the ministry decided in 2020 to prolong its substantial funding until 2024 in order to develop the technology further and prepare for a large-scale technology rollout.

In 2022, the ongoing project work revealed stable and high-performance results for the developed gas purification technology – Clariant's catalysts for gas conditioning and sorbents for impurity removal. Consequently, stable and productive methanol synthesis from CO₂-rich steel off-gas was demonstrated by Clariant's Megamax 800 industrial catalyst. Thanks to the substantial support of the Federal Ministry of Education and Research, the consortium is preparing for some piloting projects at a scale of 4 000 tons/year of methanol production, which will start in 2023 at an industrial site with a large CO₂ point source, such as steel, cement, or waste incineration. Another large national initiative funded by the German Federal Ministry of Education and Research is Kopernikus. Together with Hydrogenious LOHC Technologies and several partners from academia, Clariant successfully

addressed improvements of the Liquid Organic Hydrogen Carriers (LOHCs) technology. The technology aims to use LOHCs to safely store and transport renewable hydrogen to filling stations or the chemical industry. In 2022, the LOHC technology developed within Kopernikus was demonstrated at a newly inaugurated hydrogen fuel station close to Nuremberg/Erlangen together with the project partner Hydrogenious LOHC Technologies.

Clariant is also a partner in TransHyDE, a project funded with €135 million from the German Federal Ministry of Education and Research to develop catalysts and technology for green ammonia, i.e., ammonia produced with renewable energy. This substance is a potential substitute for conventionally produced ammonia and significantly reduces its carbon footprint. Due to its higher density, converting hydrogen into ammonia is an economically viable method for hydrogen transportation and release at the point of use. Clariant currently develops new and improved catalysts for hydrogen release. TransHyDE is one of three flagship hydrogen projects aiming to prepare Germany's entry into the hydrogen economy. In 2022, the foundation for the development of highly active catalysts for the decomposition of ammonia was laid by Clariant and the academic partners. Moreover, the strong networking with the engineering partners and users will boost the development of an energy-efficient solution.

Collaborations with academics

In 2022, Clariant engaged in more than 65 scientific R&D partnerships. The well-funded catalysis research partnership with the prestigious ETH Zurich continues to be successful. The goal is to advance the understanding of catalyst properties from the nanoscale to the macroscale level. Together with the ETH Foundation, Clariant will sponsor – and collaborate in – fundamental chemical research projects, promoting talented ETH scientists and students.

»MuniCat« is a long-standing strategic partnership with the Technical University of Munich and has run since 2010. It is dedicated to the research, development, and application of innovative, pioneering catalysis technologies. One topic of this collaboration is the development of new manufacturing routes for high-quality plastic precursors that are independent of crude oil.

CHF 150 000 in grants for outstanding Catalysis research

Three student research projects were selected in 2022 on the basis of their focus on using catalysis to drive forward sustainability in the chemical industry. The talent program is part of Clariant's research cooperation with the prominent academic institution ETH Zurich. It acknowledges the outstanding research in the field of Catalysis of young talents and aims to support sustainable transformation in the chemical industry.

An award went to Andrea Blankenship, an MIT graduate and a doctoral student at ETH Zurich for her research into enabling the valorization of methane into desired liquid products that are important pathways for greener fuel and chemicals.

Ivan Surin, a graduate in chemical engineering and bioengineering and a doctoral candidate at ETH, received the award for his research into developing ammonia oxidation catalysts for sustainable nitrous oxide production.

Yuya Kakiuchi, a graduate in engineering sciences at Osaka University and a doctoral student at ETH Zurich, received an award for his study that is laying the foundation for further understanding olefin conversion processes, focusing on developing interplay between spectroscopy and computations to understand the role of the »catalyst ingredient.«

→ Read more on the Clariant research grants.

Other collaborations

In 2022, Clariant also collaborated with companies and customers on new products development.

In a first and unique cross-industry collaboration for the Personal Care industry, »Design4Circularity,« Clariant, Siegwerk, Borealis, and Beiersdorf combined expertise to tackle the challenges of creating truly circular consumer packaging that is 100% based on retrieved plastic packaging waste for cosmetics applications.

Furthermore, Clariant actively contributes to industrial clusters, consortia, and organizations to drive collaboration along the value chain. A holistic approach to solving complex and challenging situations is the preference. As an example, Clariant joined the Action for Sustainable Derivatives (ASD) in 2021. ASD is a collaborative initiative that brings together companies in the cosmetics, home and personal care, and oleochemicals industries to collectively tackle supply chain issues around palm oil and palm kernel oil derivatives.

AWARD

In 2022, Clariant won several awards for outstanding innovative products:

- Gold prize of the BSB Innovation Awards 2022 in the category »Environment« for natural active ingredient Rootness® Awake
- Innovation Award for EARTH® technology (ICIS Innovation Awards, Best Process Innovation and Best Refining Technology, category Hydrocarbon Processing). → Read more in the chapter Climate Protection.
- German Romanian Business Award

AWARD

Sustainability Awards

- Sustainability Award for EnviCat® N₂O-S catalyst (American Chemistry Council/ACC Sustainability Leadership Award, category Environmental Protection)
- Sustainable Beauty Award 2022 for »Design4Circularity« (category Sustainable Packaging)
- Clariant was named a finalist for the prestigious German Sustainability Award for its holistic approach to drive sustainability forward in the category »transformation area climate«
- DSM Sustainability Award, November 2022, for Clariant's efforts to improve the recyclability of flame-retarded polyamides
- The World Bioeconomy Forum's → Bio Act of the Year
- The business prize → AHK Award

PRODUCT STEWARDSHIP

Human health and environmental safety are of utmost importance to Clariant. A thorough safety and risk assessment for each product is at the core of the company's stewardship approach and forms the takeoff point for its sustainable chemistry commitment. Handling chemicals responsibly and safely, consistent with emerging regulations, is key for Clariant's portfolio risk and opportunity management process. This process enables the company to serve markets with innovative and sustainable products that align with regulatory requirements, while also responding to market trends.

Over the past few years, product stewardship has evolved from a prerequisite for legal compliance into a key enabler for Clariant's business: It includes gathering, analyzing, and assessing regulatory and emerging issues that are relevant to the marketing of Clariant's portfolio.

Sustainability leadership, however, goes even further than assessing human health and environmental safety. It also requires a company to pursue sustainable and innovative solutions proactively. Therefore, Clariant sets a strong focus on continuously steering its environmental performance toward increased sustainability and setting new environmental benchmarks through leading-edge operations and innovation. With the company's vision to become climate neutral by 2050, it has set itself ambitious targets

that allow it to measure its success based on clearly defined metrics and milestones. Driven by societal demand and policy attention, customers and markets are increasingly aware of – and sensitive to – the sustainability features of products. By screening products along their life cycles and all innovation projects against strict and forward-looking sustainability criteria, Clariant aims to develop more sustainable and innovative solutions that support long-term value creation.

Management approach

The Global Product Stewardship Organization, which is part of the Group Innovation and Sustainability (GIS), exemplifies Clariant's global approach to product stewardship. The organization takes care of health, safety, environmental, and all relevant regulatory aspects of the company's portfolio throughout product life cycles, following clear guidelines underpinned by the Sustainability Policy and process descriptions. In addition, local and regional teams play an integral role by supporting business and external customer communication in all regulatory issues regarding the management of chemicals.

The company has embedded its product stewardship practices into the innovation process, guaranteeing that chemical safety and regulatory compliance are considered throughout the entire product life cycle. Product stewardship ensures adequate communication to consumers on the safe use and handling of products.

Evaluating the management approach includes internal controls, progress-tracking dashboards, benchmarking against peers using external references such as the Dow Jones Sustainability Index, and participation in external networks, discussions, and report reviews. Product stewardship also forms an important part of the indicators for the assessment of Clariant's environmental sustainability pillar by ESG ratings agencies, such as Sustainalytics, MSCI, and others.

Senior Product Stewardship experts: connecting the dots

For each business unit, a senior Product Stewardship expert (BU Key Contact) with sound knowledge of the product portfolio of the respective business unit is assigned. This guarantees that business units' Product Stewardship issues will be tackled and solved in an efficient and cost-optimized way. The expert also has a profound knowledge of the company and excellent communication skills to ensure that the Product Stewardship strategy is communicated and implemented in the business unit. To advocate Clariant's interests outside of the company, he or she must be well connected with external networks.

Internally, the BU Key Contact receives full support from all Product Stewardship functions. Any new business information (strategy, portfolio, R&D developments) is conveyed to Product Stewardship. This enables the supervision of all aspects of a product or portfolio – e.g., regulatory matters from cradle to end-of-life for the respective portfolio or toxicology/ecotoxicology. Also, the Product Stewardship experts ensure the Customer Support and Product Steward project coordination of business unit products. Close cooperation and the inclusion of a multitude of aspects are key in creating a portfolio marketability strategy.

Communication in combination with sound knowledge is a key skill for the BU Key Contact. The expert helps prevent the Clariant business partners and customers from reputational or legal risks, and increases customer satisfaction. The senior expert takes care of a proper communication of the value chain requirements, monitors relevant ecological retailer standards, and communicates them.

Networking skills are also crucial to the BU Key Contact. Product Stewardship shapes Clariant's positioning in chemical associations in view of chemicals management development – in close cooperation with Corporate Sustainability. The BU Key Contacts assume proactive regulatory product advocacy in external (chemical) associations on a country (e.g., VCI), regional (e.g., Cefic, ACC) and global level (ICCA).

008 BU KEY CONTACT – CONNECTING INTERNAL AND EXTERNAL STAKEHOLDERS

Input for BU Key Contact

- Product expertise
- BU expertise
- Company strategy
- Product Stewardship strategy
- R&D news
- Portfolio strategy
- Toxicology

BU Key Contact



The many roles of a BU Key Contact

INTERNAL

- Project coordination of BU products regulatory marketability
- Communication of portfolio marketability strategy
- Communication of value chain requirements
- Ensuring regulatory customer support
- Communication of retailer standards

EXTERNAL

- Business consulting
- Customer consulting (legal, reputational)
- Networking in associations



Regulatory compliance

Clariant monitors regulatory developments worldwide, assesses the impact of changes, and ensures compliance by continuously updating its global state-of-the-art chemical management systems. Proximity to regulatory bodies and participation in expert groups and associations support proactive management. Ensuring regulatory compliance also includes substance registration with relevant regional and national authorities, as well as supply chain communication on product safety.

Clariant fully commits to the targets of the EU REACH (European Union Registration, Evaluation, Authorization, and Restriction of Chemicals) Regulation. After successfully registering all relevant chemicals in 2018, all product dossiers are kept up to date. In 2022, 56 dossier updates have been performed. It continues to cooperate with regulatory bodies and has joined the European Chemical Industry Council (Cefic)/European Chemicals Agency (ECHA) cooperation agreement on the review and improvement of REACH registration dossiers.

Clariant goes beyond compliance with regulatory requirements: As a signatory to the Cefic Responsible Care® Declaration, the company supports the Responsible Care® Global Charter. It promotes the program in several countries and has embedded these principles in its sustainability policy, underlining its strong commitment and leadership in sustainable chemistry.

In a Cefic Long-Range Research Initiative (LRI) project, Clariant's Global Toxicology & Ecotoxicology Group has initiated and co-developed the AMBIT tool. This open cheminformatics data management system supports companies by facilitating chemical safety assessment. Its database includes more than 450 000 chemical structures and a REACH dataset of 14 570 substances and helps predict the properties of one chemical using the known properties of similar chemicals. The European Chemicals Agency (ECHA) supports this tool by giving access to nonconfidential registration data.

Countries around the world increasingly introduce chemical regulations like the EU REACH Regulation to ensure the safe use of chemicals. Clariant Product Stewardship closely monitors the developments and takes necessary actions to ensure that the portfolio complies with upcoming legislation, among other factors. In Turkey, Clariant already preregistered the relevant chemical substances. Following the European Chemicals Strategy for Sustainability, Clariant's Product Stewardship organization operates an implementation program to ensure the incorporation of all new legal requirements into its business processes and policies according to the transition periods for REACH respective CLP (the European regulation on classification, labeling and packaging of substances and mixtures). Product Stewardship in 2022 also worked on implementing the new cosmetics regulation in China, the requirements of Turkish REACH KKDIK and of UK REACH.

Sustainable chemistry commitment

Sustainable chemistry encompasses the design, manufacturing, and use of efficient, effective, and safe chemical products and processes that are more environmentally benign. Clariant maintains roadmaps to drive innovation and uncover sustainability-improvement opportunities in the product portfolio.

Clariant is a member of the World Business Council on Sustainable Development (WBCSD). This initiative brings forward best practices and encourages companies to adopt methodologies for evaluating and steering their product portfolio toward more sustainability. In 2021, Clariant supported the development of a set of sustainability indicators for evaluating product portfolios in the chemical industry. In 2022, Clariant further supported the development of the PVP in the WBCSD, enhancing it from PVP 1.0 to PVP 2.0.

The WBCSD also annually assesses the quality of Clariant sustainability reporting. The report for 2022 was evaluated positively in multiple areas. The evaluation also highlighted several strengths, which include: the discussion on how megatrends influence Clariant's strategy, a good variety of implementation and control mechanisms, and a clear and transparent disclosure of performance data.

Assessment of the health and safety impacts of product and service categories

Clariant focuses on reducing certain hazardous substances in its product portfolio and promoting alternatives that exceed the requirements of the relevant regulations. This approach is particularly important in regions where regulatory action is lagging. In 2022, 76.6% of significant product and service categories were assessed for health and safety impacts. Clariant has thus covered 1.4 percentage points less in the reporting year than in the preceding year.

Genetically modified organisms

Clariant is committed to providing innovative responses to today's global challenges, such as the transition to a low-carbon and circular economy and the ever-increasing demands of a growing world population. For Clariant, biotechnology offers unique opportunities to respond to the demands of a modern and globalized society.

Clariant considers the application of genetically modified organisms (GMOs) as part of its technology portfolio for more sustainable and efficient production processes, particularly the use of genetically modified microorganisms (GMMs). Clariant takes a transparent and responsible stance and is committed to the responsible use of GMOs and safe operations in research and innovation, enzyme production, and sourcing of bio-based raw materials. Clariant has set out this stance in its Position Paper. In 2022, no more products of the Clariant portfolio contain GMOs.

→ Read more on Clariant's Position on industrial biotechnology and genetically modified organisms.

Requirements for product and service information and labeling

Clariant fosters regular and continuous contact with customers and supports them in applying and using Clariant's products. Laboratories are made available to solve specific problems. The service offerings also feature comprehensive product information, particularly with respect to optimum and safe application, health risks, waste disposal, and handling of packaging.

Clariant provides safety data sheets to all parties involved in the handling of substances. The sheets contain the relevant substance data, information on safe handling and storage of products, and measures in the event of product spillages, releases, or fire.

A close relationship with customers is maintained, and all REACH-relevant information is provided. Comprehensive customer support services ensure compliance with the strict communication requirements set by REACH regarding the use of products in the customer chain.

Communication between Clariant and its customers

The Customer Support (CS) function ensures the business support for Product Stewardship-related communication to customers. The CS collects regulatory-relevant data to assess the relevant regulatory status of products and ensure legal compliance for customers. The CS ensures and performs the communication of regulatory status to satisfy customer demand and ensures traceable archiving of customer requests and PS confirmations and statements. There were more than 10 000 individual customer requests in 2022.

Animal testing

Clariant is committed to research on alternatives to animal testing. The Product Stewardship organization supports an active research portfolio and engages with academic partners to facilitate the development of an integrated in vitro approach for developmental immunotoxicity screening. The approach promises to reduce requirements for animal testing in regulatory developmental toxicity studies.

In 2022, Clariant initiated a partnership with the IUF Leibniz Research Institute for Environmental Medicine to develop an in vitro assay battery to characterize chemical effects on the development and function of immune cells as part of the so-called »T-cell-dependent antibody response.« In addition, Clariant has collaborated with the University of Potsdam, resulting in an in vitro screening assay for developmental impacts of chemicals on dendritic cells, a different type of immune cell.

Incidents of noncompliance

Product and service information and labeling

In 2022, there were no fines, penalties, or warnings resulting from incidents of noncompliance with regulations or voluntary codes concerning the product and service information and labeling.

Health and safety impacts of products and services

In 2022, there were no fines, penalties, or warnings resulting from incidents of noncompliance with regulations or voluntary codes concerning the health and safety impacts of products and services.

Marketing communications

In 2022, Clariant had no incidences of noncompliance with regulations or voluntary codes concerning marketing communications.

People

»We introduced new DE&I objectives in 2022, striving for our people to reflect the world's diversity in a workplace that engages everyone.«

Tatiana Berardinelli, Chief Human Resources Officer

2022

11148

Total staff

0.24

LTAR

33 %

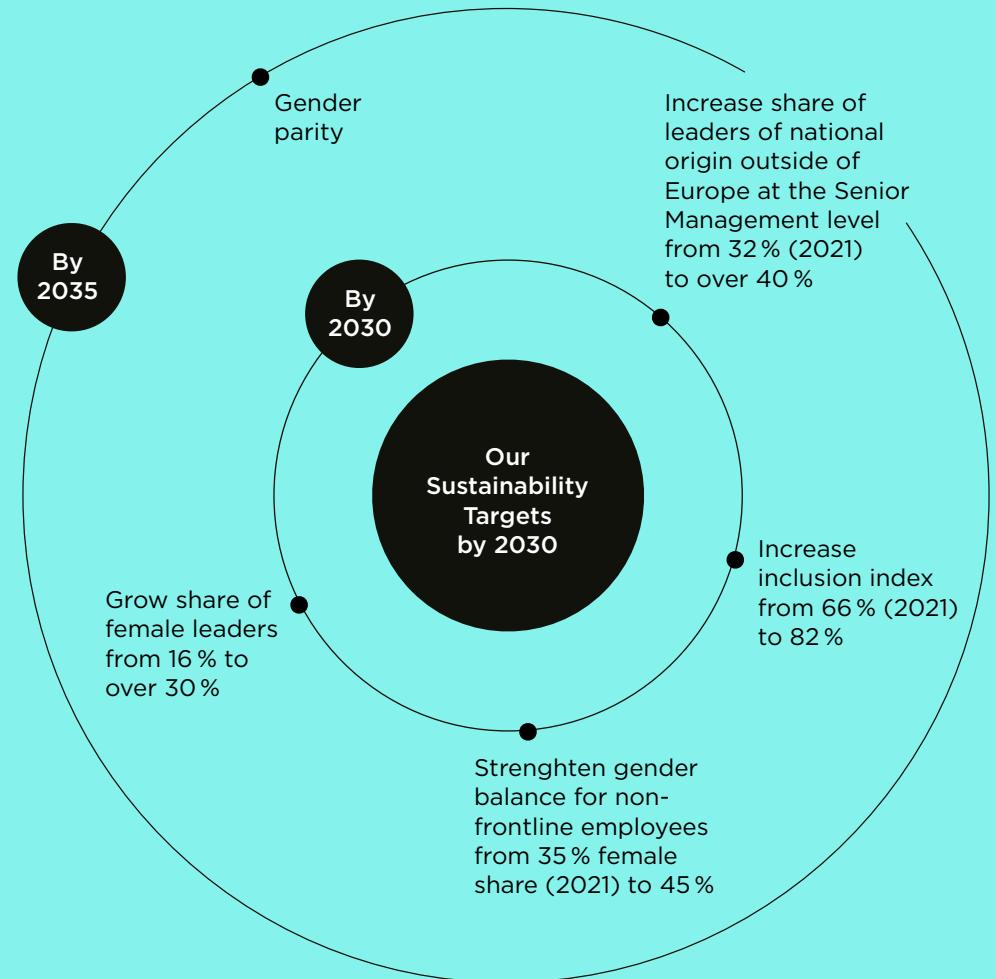
Proportion of Senior Management level of origin outside Europe

19 %

Female leaders

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EMPLOYEE ENGAGEMENT AND WELL-BEING

Clariant's people are an invaluable competitive factor in developing, improving, protecting, and delivering innovative and sustainable products and services. Long-term success is only possible with motivated and highly skilled employees who create value for the company, its stakeholders, and society. Clariant aspires to foster a better life at work with empowered employees who are well equipped and supported to perform at their best. Creating value for Clariant employees is tightly combined with the four pillars of the company's purpose. Despite many changes and challenges – internally and externally – the overall goal prevails: Clariant strives to be an employer of choice, attracting top talents to help it deliver lasting results.

In 2022, Clariant's transformation set the stage for a more agile, empowered, and leaner organization. Clariant's leadership is convinced that this transformation will enable Clariant employees to grow and fully develop their potential, including skills that will be needed to compete in the future.

Management approach

Employee engagement is driven by each leader at Clariant by influencing the key engagement drivers. Each leader owns and drives engagement for respective team by sharing the strategic roadmap, co-creating goals, clarifying responsibilities, providing necessary enablers and implementing consistent processes. Leadership efforts are supported by enhanced people processes across the employee experience cycle starting from talent acquisition to enabling performance, growth, as well as recognizing and rewarding behaviors and results.

The leaders continued to work in close partnership with Human Resources to strengthen key engagement drivers in 2022. The Human Resources operating model was transformed as of July 2022 to enable business leaders and HR Partners to collaborate and strengthen business and engagement further.

PEOPLE OVERVIEW

	Continuing operations	Discontinued operations	Total 2022	2021
Total staff	11 148	n.a.	11 148	13 374
Male (in FTEs)	8 472	n.a.	8 472	10 370
Male (%)	76	n.a.	76	78
Female (in FTEs)	2 675	n.a.	2 675	3 004
Female (%)	24	n.a.	24	22
Employees	6 843	n.a.	6 843	8 046
Male (in FTEs)	4 538	n.a.	4 538	5 408
Male (%)	66	n.a.	66	67
Female (in FTEs)	2 305	n.a.	2 305	2 638
Female (%)	34	n.a.	34	33
Workers	4 305	n.a.	4 305	5 328
Male (in FTEs)	3 989	n.a.	3 989	4 962
Male (%)	93	n.a.	93	93
Female (in FTEs)	316	n.a.	316	366
Female (%)	7	n.a.	7	7
Staff under the age of 30 (%)	15	n.a.	15	14
Staff between the ages of 30 and 50 (%)	59	n.a.	59	59
Staff over the age of 50 (%)	26	n.a.	26	27
Employees in permanent employment contracts (in FTEs)	10 769	n.a.	10 769	12 893
Employees in temporary employment contracts (in FTEs)	378	n.a.	378	481
Full-time employees (in FTEs)	10 836	n.a.	10 836	13 023
Part-time employees (in FTEs)	312	n.a.	312	351
Turnover rate (%)	12.1	n.a.	12.1	11.3
Staff in Research & Development (in FTEs)	>785	n.a.	>785	>900
Total training hours	114 508	n.a.	114 508	164 523
Training hours (Ø per participant)	12.0	n.a.	12.0	13.8
Percentage of total employees covered by collective bargaining agreements (%)	46.8	n.a.	47	47
Lost-Time Accident Rate (LTAR) ¹	0.24	n.a.	0.24	0.16
Lost-Time Accident Rate (LTAR) for contractors ¹	0.30	n.a.	0.30	0.30
Lost Workday Rate (LWR)	5.89	n.a.	5.89	6.85
Employee participation in engagement survey	n.a.	n.a.	n.a.	2 896
Employee Net Promoter Score (eNPS)	n.a. ²	n.a. ²	n.a. ²	-7
Survey responses obtained from customer contacts	n.a.	n.a.	n.a.	n.a. ³
Customers who want to continue doing business with Clariant (%)	n.a.	n.a.	n.a.	n.a. ³

¹ LTAR: accidents with at least 1 day lost/200 000 work hours

² Engagement survey was launched in January 2023.

³ Survey is conducted every two years.



Global HR Business Partnering & Regional HR

consisting of Global HR Partners and regional/local HR organizations who partner with the business and functions to drive business results and ensure the delivery of business transformation while ensuring the right talent and capabilities.

Talent & Culture

to foster cultural change toward a highly engaged and performing organization, embedding Diversity, Equity, and Inclusion in behaviors, while both building up critical skills and ensuring a strong leadership bench.

Total Rewards

to provide solutions and expertise for Clariant's compensation, benefits, and rewards programs to support a performance-driven culture and ensure market competitiveness.

HR Services & Solutions

to manage HR processes through the employee experience, while providing digital HR solutions, agile project management, continuous process improvement and relevant analytics.

Measuring engagement

Clariant introduced the Employee Net Promoter Score (eNPS) in 2021, the metric that measures how many employees are likely to advocate for the company. Clariant aims to be in the top quartile by 2030 and will continue to work on improving the employee experience and perception.

In 2022, Clariant took a step further and partnered with leaders, employees, and external consultants to refine the company's listening strategy. A full-scale engagement survey, »Our Voice« was developed with these inputs and launched in January 2023.

Strengthening employee experience through people processes

A new set of values was introduced in 2022. The values have been woven into Clariant employees' daily work, into how they collaborate with each other, and into how they approach the business and company's customers. The values are recognizable and visible in everything Clariant does.

→ Read more in the chapter Clariant Culture

Employee engagement: volunteering

Clariant encourages all employees to engage in volunteer programs. Projects initiated and executed by the employees have included spending a day visiting kids at a chosen school to teach them about science, collecting and donating over 1 500 crayons to high-poverty schools, partnering with a local organization and cooking food for people in need in their community and organizing several initiatives in solidarity with the people who are fighting or have fought breast cancer.

In addition, all Clariant employees worldwide are granted one day off each year for volunteer work, preferably as a team activity, to support the common good. This day is fully paid and can be taken during working hours. In 2022, for example, on the World Clean-up Day, 17 September, various sites organized local clean-ups to collect litter.

Knowledge management: understanding sustainability

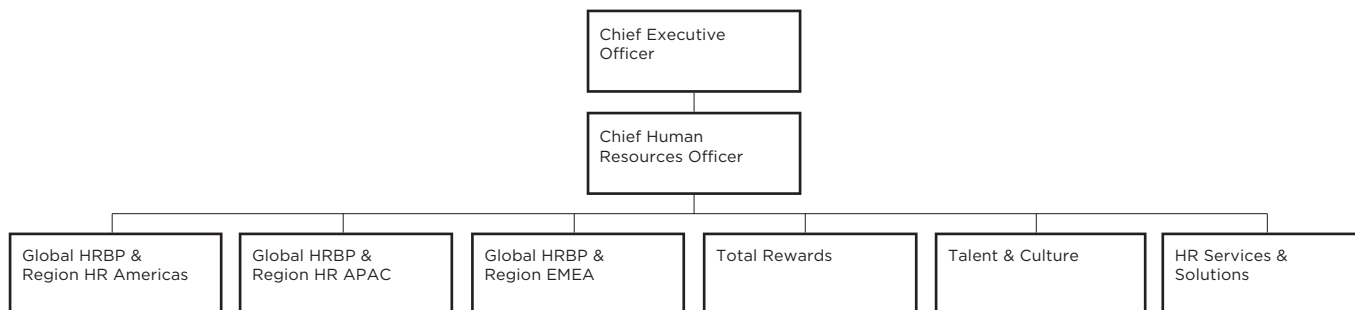
Clariant encourages its employees to participate in voluntary training and creates learning opportunities. Acknowledging sustainability as a priority for company leadership and long-term thinking, Clariant's approach aims to raise employee awareness of critical issues regarding life with limited resources on this planet. In addition, Clariant is fostering an understanding of the targets and the transformational processes it has set or initiated while taking into account industry or market developments. Against this background and based on a comprehensive learning plan, Clariant has significantly increased its knowledge building activities and supply of information on sustainability or ESG-related topics in 2022.

All content is generally available in three main categories. Self-service content serves as a source for employee-initiated learning via corporate learning and communication channels like »ClariNet« and »MyLearning.« Distributed »leader-led content« is shared and included in presentations used in town hall meetings and topical sessions. The live webinars and Q&A sessions are hosted by internal or external topic experts and may allow for active involvement of the participants.

In other cases, specific content is designed for target groups. For example, training sessions related to the new product carbon footprint calculator, »CliMate,« or the sessions regarding the tracking of energy consumption and greenhouse gas emissions were specifically designed for target groups in the business units.

→ Read more in the chapter Climate Protection.

009 HUMAN RESOURCES OPERATING MODEL



Sustainability knowledge-building activities are usually supplemented by a variety of ongoing additional formats, such as local learning activities in the regions, or they are driven by specific content, for example, supply chain-related content in the »Together for Sustainability« activities with Procurement. Regularly, employees are encouraged to take advantage of internal channels and access »Sustainable Soundbites,« the »Topic of the Month« intranet, or »Yammer« community posts.

In 2022, particularly appreciated were webinars with external presenters and perspectives on topics such as bio-economy, safe and sustainable actions, and Clariant's zero waste and pollution activities. They were run as »Lunch & Learns,« and »Tea time Talks« and are considered extremely valuable, as they connect the industry or market context with the Clariant story while also providing for an outside expert opinion. The webinars are scheduled to be continued in 2023, addressing the circular economy, Clariant's climate targets, the European Green Deal, and similar subjects. Other live webinars in the reporting year were hosted by internal topic experts on selected key themes or topics suggested by a targeted audience group (BUs/FUs). Usually, they cover the Clariant story and make the connection to the industry and market context. In addition, two policy dialogue webinars took place in 2022:

- Sustainable aviation fuels – ready for take-off
- Policy Dialogue North America: Discussion of the Inflation Reduction Act

Programs for upgrading employee skills and transition assistance program

People Development, formerly known as Clariant Academy, encompasses all global learning offerings designed to support Clariant's strategy and promote common knowledge, language and values across the organization. A global nomination process for the People Development programs ensures that all relevant employees participate in the training programs. In addition, Clariant offers local trainings, social learnings such as learning communities, mentoring, peer coaching, and on-the-job learning opportunities.

The training offering is based on the »70:20:10 model« from Michael Lombardo and Robert Eichinger, which corresponds to a proportional breakdown of effective learning. The Individual Development Plans for employees generally include 10% coursework and formal training, 20% interaction and peer exchange, and 70% challenging assignments to promote learning on the job. Overall, training covers technical and functional skills, safety and

sustainability, personal development, leadership, law/compliance, IT skills, and general management skills.

In 2022, 27 participants attended the Leading Organizational Performance program, a joint program with London Business School, after it had paused in 2020 and 2021 due to the pandemic. The hybrid format included digital sessions as well as three days at the campus of London Business School. The net promoter score of 95% shows the high value of the program.

People Development offers global trainings targeted at business, leadership, and functional skills. It offers a standard curriculum for each level in the organization. Furthermore, the annual training catalogue, with a focus on leadership skills and personal development, includes recommendations for external classes, which are well received as they offer an additional variety of potential training opportunities.

The global learning policy describes how Clariant supports the education of all employees. This policy includes budget frameworks and study assistance guidelines. Clariant increasingly explores offerings to enhance the smoothness of digital learning and virtual self-study learning opportunities. In 2022, virtual trainings build a strong pillar in the learning offering, as they did not require travel time, and content could easily be split into shorter sessions. Because of the flexibility, virtual trainings and virtual self-study opportunities, such as eLearning, will play a major role also in the future as well.

Overall, 9 575 employees participated in training sessions recorded in the central learning management system, MyLearning, for a total of 114 508 training hours. Training sessions included fully virtual, blended (virtual plus face-to-face) and fully face-to-face live sessions, as well as on-demand content, such as microlearning videos, virtual self-learning offerings, and guided learning nuggets. The average number of training hours per employee fell from 13.8 to 12 hours per employee. Each female employee had an average of 11.6 hours, while male employees averaged 12.1 hours of training per year. At Management Level 1-5, 15.2 hours per person were recorded, whereas local managers, professionals, and employees completed 11.7 hours of training.

In 2022, 624 employees benefited from Global People Development programs. New virtual sessions, such as Introduction to Finance, were introduced, with time invested in their design and implementation. Overall, training participation related to safety and sustainability (31.4%), legal and compliance (14.4%), functional skills (23.8%), IT skills (6.7%), personal development (12.8%), and leadership (9.6%). These figures include training sessions beyond the Global People Development program. In 2022, the average feedback score for Global People Development training sessions was 5 (with a maximum possible score of 6). Positive feedback concerned high quality of training content, which included a balanced mix between theory and practice, working with experienced trainers, and working in diverse groups. Exchanges within those groups were perceived as particularly fruitful. Room for improvement was articulated with respect to

AVERAGE HOURS OF TRAINING PER YEAR PER EMPLOYEE

	Continuing operations	Discontinued operations	Total 2022	2021	2020 ¹	2019	2018
Number of training hours	114 508	n.a.	114 508	164 523	113 190	205 861	234 240
Male	80 547	n.a.	80 547	108 996	75 372	140 548	167 734
Female	33 960	n.a.	33 960	55 526	37 818	65 277	66 506
Management Level 1-5	10 424	n.a.	10 424	12 345	8 897	19 318	26 679
Local managers, professionals, and employees	104 083	n.a.	104 083	152 178	104 293	186 543	207 561
Number of employees participating in training (headcounts)	9 575	n.a.	9 575	11 956	12 630	13 891	15 791
Average hours of training that the organization's employees undertook during the reporting period	12.0	n.a.	12.0	13.8	9.0	14.8	14.8

¹ 80 % of in-person trainings had to be canceled due to the COVID-19 pandemic.

returning to more face-to-face meetings after the COVID-19 pandemic. But at the same time, suggestions included the desire for more frequent but shorter virtual training sessions.

Feedback analysis reflected satisfaction with the quality of the trainers and the variety of interactive training sessions. The content was considered fit for the target group, and the trainings are well received as an opportunity to connect with employees from other business units and global functions.

Performance, talent, and leadership programs

Clariant offers a wide range of formal and informal programs so that employees can achieve their full potential. The Global People Development Strategy links these programs closely to business needs and implements them effectively and efficiently. The strategy breaks down business challenges into people-related measures that address existing shortcomings in a focused manner. These measures include individual development plans according to managerial feedback, regional learning initiatives based on identified common needs and focus areas, as well as capability development programs to identify strengths and gaps. In 2022, due to the ongoing transformation of the company, the focus was on setting a new learning strategy, as well as on specific training opportunities that enable Clariant employees to work in a more agile and flexible environment and to feel comfortable doing so while delivering on the purpose-led strategy of the organization.

Performance management programs

Clariant's performance management process ensures that strategic business objectives are translated into day-to-day activities. Employees have one-on-one meetings, referred to as »performance dialogues,« with their supervisors to identify objectives, areas for improvement, development actions, and opportunities to leverage strengths and celebrate successes. To guarantee consistency of performance ratings, calibration sessions are part of the performance management process.

PERCENTAGE OF EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Total number of employees who receive regular performance and career development reviews (headcounts)	6 696	n.a.	6 696²	7 514	7 335	10 063	10 350
Management Level 1-5	596	n.a.	596	732	658	776	819
Management Level 1-5 (%)	9	n.a.	9	10	9	8	8
Local managers, professionals, and employees	6 100	n.a.	6 100	6 782	6 677	9 287	9 531
Local managers, professionals, and employees (%)	91	n.a.	91	90	91	92	92
Male	4 764	n.a.	4 764	5 285	5 125	6 687	7 611
Female	1 932	n.a.	1 932	2 229	2 210	3 376	2 739
Percentage of total employees who receive regular performance and career development reviews (%)	60	n.a.	60	56	55	58	58
Male	56 ¹	n.a.	56 ¹	51 ¹	50 ¹	50 ¹	55 ¹
Female	72 ¹	n.a.	72 ¹	74 ¹	73 ¹	91 ¹	93 ¹

¹ The percentage is calculated based on the total number of employees in the respective group.

² Performance management is a mandatory and consistent global process for all employees of the type White Collar or Manager (except for local exceptions based on employee class and employee level). Performance management is not a mandatory global process for Blue Collar employees, execution depends on local regulations.

The performance review includes goal setting, ongoing feedback, mid-year reviews, and a year-end performance review. This review is retrospective, includes a forward-looking development component, and may also cover discussions about potential progression over several years. The »MyPerformance« tool documents goals and keeps track of the individual performance progress. The outcome of the individual performance review is the basis for employee development and compensation development. In 2022, the performance management process covered 60.1% of all employees. This means that 6 696 employees followed a standardized performance management process.

A new performance management process has been developed and introduced for the 2023 cycle. It is enabling differentiation in performance and driving growth while empowering each employee to champion their individual development. It will enable employees to align their goals with Clariant's strategic pillars and will contribute to Clariant's enhanced performance.

Talent development programs

Clariant evaluates and develops employees nominated by their leaders for their performance and potential through a structured talent management process that follows transparent indicators. These indicators include achievement motivation, analytical skills, adaptability and flexibility, and self-reflection. Besides the learning offering available for all employees, further learning opportunities and talent engagement sessions allow employees to exchange views across units and functions and to show their capabilities to peers and senior leaders. Learning from each other is the motto in monthly leadership talks, in which Clariant's leaders share personal experience from their own career journeys. Another example of developing leadership skills outside employees' own area of expertise is the project-based development initiative in the Business Unit Catalysts, which was launched in 2021 for the first time and run a second time in 2022. In this initiative, commercial talents are invited to become project leaders of selected projects outside their regional or market expertise. While leading the project, they are sponsored and coached by global sales market segment leaders.

Additionally, Clariant maintains a strong talent pipeline. A structured succession planning system identifies, develops, and retains internal talent. This system ensures successful short-, medium-, and long-term succession planning, the availability of candidates, and a diversity of profiles for leadership roles on a global level. Line managers nominate employees for a talent pool based on a high level of performance and a fast track record. Clariant's talent management approach is successful as compared to the overall attrition rate. The lower attrition rate of talents can mainly be explained by the fact that they are provided with a clear perspective on their career planning as well as focused and effective development measures to prepare themselves for future roles. Both of these elements positively impact their retention and willingness to stay with Clariant. In line with the ongoing transformation, the focus in 2022 was on designing a new talent management framework and concept, which will be launched in 2023. Therefore, the number of talent reviews in 2022 has been reduced, and more effort has been put into gathering feedback from existing talents and managers to design the tailor-made new concept. The existing talent pools and succession planning discussions, however, greatly facilitated the placement of positions within the new Clariant operating model.

In 2022, Clariant mapped 104 Senior Management roles with potential successors. In addition, seven global job family talent pools were analyzed. This process identified succession gaps and mitigation measures in each region. As a result, seven job family career paths were designed. These career paths illustrate the necessary steps for managers and talents to move to a new position within the organization.

Clariant's dynamic placement process is reflected in a 41% promotion rate for senior managers in 2022. In the general talent population, the average tenure in a certain role before promotion is around four years. The talent retention rate remained nearly at the high level attained in 2021. Clariant promoted internal candidates into 95% of Senior Management positions and filled 89% of Group Management positions with the internal population.

Clariant increasingly seeks the so-called »hybrid« skillset – a combination of digital know-how and more common, industry-specific skills that are hard to find in the market. For this reason, the in-house Digital Enablement team, which is a part of Digital@Operations under the Operational Excellence umbrella, identifies skill gaps and implements training programs for employees. These programs focus on digital tools, technologies, and agile methodologies. As a result, Clariant is less dependent on external expertise and creates an enabled, motivated, inspired, and future-ready workforce.

Informal learning and development initiatives include learning communities, peer coaching sessions, and a coaching program led by an externally certified consultant that focuses on behavioral change. To maximize the benefits of all programs and initiatives, the company will target several aspects in the coming years. These include promoting a modular talent development approach based on talents' needs, focusing on preparing key talents for business-critical roles, increasing the visibility and transparency of development opportunities; connecting leaders across business units and service units to create synergies, enabling talents to be the champions of their own career development, and improving change readiness.

Leadership programs

Clariant's »Capability Development Program« helps leaders identify requirements for various job levels and development opportunities at organizational and individual levels. In 2022, the focus of the Sales Effectiveness Program of the Business Unit Additives was supported with a Commercial Capability Development Program, in which 20 candidates were evaluated based on the Clariant Commercial Competency Model. Participants were supported with an individual feedback dialogue and development plans based on identified areas for improvement.

In the »Mentoring Program,« talents get the opportunity to team up with experienced leaders to strengthen leadership skills and encourage knowledge transfer across units, functions, and age groups. Since its inception, more than 135 mentees have participated in the program.

The »Team Effectiveness Program,« which was designed to help leaders build high-performing teams, was revised and updated in 2022. It will be offered in a changed format in the future. With the new format, Clariant will ensure it is closely linked to the company's purpose as well as the new values. The goal for it is to create a high-performing culture with leadership teams bringing out the best in people and in the company. The program will enable Executive Leadership Team (ELT) as well as the business unit and functional leadership Teams to effectively deliver as teams and strive toward the aspired joint goals. The program will be designed and facilitated with the support of an external consultant. The rollout is scheduled for the first quarter of 2023, starting with an initial session with the ELT. Thereafter, it will be cascaded down to all business unit and functional leadership teams.

- The »New Leader Assimilation Program« was conducted in 2022. It is specifically designed for newly set-up teams and allows for the leader and the team members to get to know each other while laying the foundation for a high-performing team.
- The »Authentic Leadership Training« was held again in 2022. It provides communication skills for successful and inspiring leaders. The participants attend either the »Executive Performance Training,« which is designed for cross-functional groups of six people, or the »Inspirational Leadership Creative Communication Program,« which is open to larger groups.
- The »Frontline Leadership Training,« which was designed for production leaders and shift leaders, and the Pioneer Program (enhancing organizational understanding, among other things) will be replaced by new programs supporting the purpose-led strategy. Due to the revision of the company purpose and the introduction of new values, the Leadership Model has changed. Due to the redefinition of the People Development Model, the programs had to be updated accordingly. New programs will be offered as of 2023.

Employee engagement and retention programs

Performance excellence comes from challenged, empowered, and rewarded teams. That is why Clariant conducts various employee engagement and retention programs. They aim to enhance motivation, commitment, and employee performance. Their overarching framework is Clariant's thoroughly phrased purpose.

Clariant's strategies for employee engagement include regular communication on the direction of the company, involvement of employees in strategy sessions, recognition programs, career opportunities, and personal development. In 2021, Clariant analyzed this strategy prior to defining and rolling out its new purpose and will further revise the strategy and include its insights.

Clariant's employee engagement and retention programs also improve its external reputation as a preferred employer, increasing the interest of potential external candidates.

Work environment

Clariant's global employment policy includes key principles and minimum standards for working conditions and labor practices. These standards ensure a fair, transparent, and discrimination-free work environment. The policy commits to equal development and promotion of all people across every organizational level, age group, and personal background. Employment agencies and contractors doing business with Clariant are also obliged to adhere to this policy.

Promoting workplace health and well-being is a local responsibility at Clariant that is addressed by tailored programs in the different regions. Clariant is a member of the »Future of Work« and »Healthy People, Healthy Business« initiatives of the World Business Council for Sustainable Development. The company offers free psychological counseling and stress management trainings in many countries. Employee assistance programs analyze and evaluate mental strain, educate employees on mental health risks, and ensure the development of relief strategies for affected employees. In 2022, Clariant reviewed health and well-being offerings to identify and adapt related offerings for employees.

Awards and benefits programs

Clariant has a comprehensive Recognition Program that acknowledges strong results with a variety of rewards. They range from monetary awards for outstanding achievements and efforts – for example, leading projects or initiatives – to non-financial awards, like the virtual appreciation badges – for example, for supporting colleagues in busy times or for project contributions. In alignment with the global framework, the »MySuccess« platform, and subject to approval by the supervisor, generally any employee can give an award or recognition to any colleague. At the same time, generally every employee is eligible to be awarded or recognized. Multiple awards and recognitions per employee during a calendar year are possible. As in previous years, employees and supervisors took advantage of the opportunity to recognize the achievements and efforts of their colleagues.

Clariant's Global Benefits Policy contains key benefits related to retirement, flexible work arrangements, death, travel, accidents, healthcare, and well-being, among others. It also acknowledges country-specific circumstances and is updated regularly to account for developments in benefit landscapes. Clariant's employees are also offered a range of benefits designed to enhance work-life balance. This includes fitness facilities and contributions to external fitness programs, flexible working hours, home-office arrangements, childcare facilities, contributions to external childcare, and support for employees who take care of elderly family members.

Basis for granting benefits

At Clariant, the basis for granting benefits is regardless of the type of employment contract. However, there may be differences depending on the individual case or local circumstances, such as local legislation, local industry standards, or cultural expectations. The relevant criterion in this case is the customary market standard.

Local programs for stress management

In addition, Clariant's Employee Assistance Program offers free counseling by external specialists for work-related stress, as well as burnout and personal crises. Flexible work arrangements can be made both for work-related stress management and for unrelated extenuating circumstances.

Support for drug addiction and programs to quit smoking

In the event of drug addiction, Clariant has established a procedure for treatment through medical plans and, if necessary, inpatient treatment. Voluntary programs to help employees quit smoking have been introduced at some sites. Clariant assesses the health habits and specific health problems of all employees and updates local programs based on these findings.

Talent attraction

Clariant's talent attraction is guided by a set of global talent acquisition policies and strategies. These policies clearly define the roles and responsibilities of hiring managers, recruiters, and Human Resources personnel, ensuring a smooth and professional recruitment process. Skilled talent acquisition teams collaborate with business units and global functions to identify and recruit the most qualified candidates, while employer branding initiatives promote Clariant's reputation in the job market and attract potential candidates.

In addition, Clariant provides training to leaders through the »License to Hire« program, which equips them with the skills needed to make sound hiring decisions. Clariant has a long-standing commitment to promoting internal talent and fills at least 80% of Management Level positions with internal employees. The company has dedicated talent managers who evaluate potential candidates, conduct talent review sessions, create individual development plans, and participate in internal placement decisions. To showcase and provide feedback on corporate culture topics, they also organize »talent engagement sessions,« which provide internal talent with exposure to senior leaders.



NEW EMPLOYEE HIRES AND EMPLOYEE TURNOVER

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Total number of new employee hires (in headcounts)	1 418	n.a.	1 418	1 438	918²	1 570¹	2 142
Male	995	n.a.	995	1 057	647	1 080	1 453
Male (%)	70	n.a.	70	74	70	69	68
Female	423	n.a.	423	381	271	490	689
Female (%)	30	n.a.	30	26	30	31	32
Under 30	605	n.a.	605	627	393	744	985
Under 30 (%)	43	n.a.	43	44	43	47	46
30-50	687	n.a.	687	732	464	750	1 045
30-50 (%)	48	n.a.	48	51	51	48	49
Over 50	126	n.a.	126	79	61	76	112
Over 50 (%)	9	n.a.	9	5	7	5	5
Europe	506	n.a.	506	544	304	561	751
Latin America	230	n.a.	230	264	156	317	359
Middle East/Africa	35	n.a.	35	39	31	61	93
North America	308	n.a.	308	168	92	273	436
Asia-Pacific	339	n.a.	339	423	335	358	503
Employees who left (in headcounts)	1 390	n.a.	1 390	1 556	1 522	1 817	2 047
Male	980	n.a.	980	1 121	1 085	1 322	1 515
Male (%)	71	n.a.	71	72	71	73	74
Female	410	n.a.	410	435	437	495	532
Female (%)	29	n.a.	29	28	29	27	26
Under 30	320	n.a.	320	353	393	461	540
Under 30 (%)	23	n.a.	23	23	26	25 ⁴	26 ⁴
30-50	734	n.a.	734	717	668	915	970
30-50 (%)	53	n.a.	53	46	44	50 ⁴	47 ⁴
Over 50	336	n.a.	336	486	461	441	537
Over 50 (%)	24	n.a.	24	31	30	24 ⁴	26 ⁴
Europe	539	n.a.	539	629	505	544	588
Latin America	273	n.a.	273	269	310	398	358
Middle East/Africa	29	n.a.	29	30	39	78	142
North America	247	n.a.	247	245	297	433	536
Asia-Pacific	302	n.a.	302	383	371	364	423
Turnover rate (%)	12.1	n.a.	12.1	11.3	10.3 ³	10.3	11.1

¹ The decline in new employee hires was due to a hiring freeze in 2019.

² The decline in new employee hires was due to the COVID-19 pandemic and the divestment of Business Unit Masterbatches.

³ Excluding data from the discontinued Business Unit Masterbatches from H1 for better comparison. Including these statistics, Clariant's 2020 turnover rate is 11.2 %.

⁴ The sum does not add up to 100% as the numbers are rounded.

Clariant hires individuals who both share its values and meet the qualifications for their defined roles. In 2022, the company brought on 1 418 new employees, comprising 423 women and 995 men.

Europe was the largest contributor of new hires, accounting for 35.7% of the total, followed by Asia-Pacific, which accounted for 23.9% of new hires.

During the same period, 1 390 employees, including 410 women and 980 men, left the company due to different reasons. North America and Latin America had the highest overall employee turnover rates at 19.9% and 15.8%, respectively. The company's turnover rate per Headcount (HC) was 12.1%, a slight increase from 11.3% in 2021.

New ways of recruiting

In 2022, Clariant focused on improving the agility and pragmatism of its recruiting by enhancing its use of digital tools to fill critical positions promptly. By using a digital interviewing platform, Clariant made it easier for applicants worldwide to participate in recruitment processes, with techniques such as asynchronous video interviews, which provided flexibility for both applicants and hiring managers. These digital tools helped to save time and cut costs while still delivering an effective and efficient recruitment process.

Clariant further leveraged digital interview techniques to assess a greater number of candidates during the recruitment process. The digital environment created a fairer and more objective evaluation process, reducing inherent biases and promoting high-quality hiring decisions from a more diverse talent pool. The traditional approach of talent attraction has often relied on predefined profiles, limiting the talent pool.

Clariant is committed to building a sustainable talent pipeline and, to that end, has maintained its engagement with various formats, including virtual lectures, tech talks, and working circles. Additionally, Clariant has intensified its strategic partnerships with renowned universities and institutions, such as the Impact Hub in Basel. These partnerships provide a platform for the exchange of knowledge and ideas, supporting efforts to attract and develop talented individuals for long-term career growth. By partnering with these institutions and continuing its engagement with various formats, Clariant is able to expand its reach, discover new talent, and ensure a robust talent pipeline for future success.



PROPORTION OF SENIOR MANAGEMENT HIRED FROM THE LOCAL COMMUNITY

	Total 2022	2021	2020	2019	2018
Percentage of Senior Management at significant locations ¹ of operation who are hired from the local community (%)	57	58	60	60	57

¹ All relevant Group companies except those in North America, where no nationality data is recorded

Internship at Clariant

Clariant visited Vivekanand Education Society's Institute Of Technology (VESIT) in India to hire interns in September 2022. Clariant hired 12 interns from the university, and they are slated to join Clariant in January 2023. This was the first time interns were hired on a larger scale in the CITC team. Five teams participated in the event – Business Intelligence, Custom Development, IT End User Productivity, Innovation & Labs, and Project Management.

granted a minimum of ten days of paid leave for family purposes in addition to their standard annual vacation. In 2022, 142 mothers and 236 fathers took advantage of this opportunity. Out of the 373 employees who returned to work in the same year, 135 were female and 238 were male.

Minimum notice periods regarding operational changes

Clariant adheres to all local statutory and operational obligations related to informing employee representatives and employees about any significant operational changes. Employees receive

prompt and regular communication about such changes through channels such as the intranet, letters from the CEO and senior leaders, and meetings with local leaders. All information is provided in relevant languages. Clariant also holds regular corporate information sessions, including town hall meetings, to keep employees informed.

DIVERSITY, EQUITY, AND INCLUSION

Clariant is a diverse workplace with 11 148 employees in 38 countries. They represent over 94 nationalities and a wide range of cultures, religions, and professional and educational backgrounds. Diversity makes Clariant an enriching place to work at. Diverse and inclusive teams have the capacity to boost Clariant's innovative strength and enable the company to better address the needs of its customers. Thus, diversity contributes to the company's problem-solving mindset and customer-centric culture.

Increased flexibility after the COVID-19 pandemic

In 2021, Clariant issued a Global Flexible Remote Working Policy, providing guidance on achieving a healthy work-life balance. As part of this policy, employees are permitted to work from home for up to two full working days per week, or a maximum of 40% of their working hours, subject to the agreement of their line managers. Additionally, line managers may set specific weekdays when all team members are required to be present in the office.

In 2022, Clariant provided additional training to employees on how to better leverage the company's systems for remote work, including team collaboration via MS Teams. As a result, the use of existing tools increased, and global teams were able to intensify collaboration, leading to improved productivity and efficiency. By implementing these measures, Clariant aims to support its employees in achieving a healthy work-life balance while maintaining its commitment to delivering excellent results for its customers.

Parental leave

Clariant recognizes the importance of supporting employees with family responsibilities and provides family-friendly job opportunities. Clariant guarantees all mothers a comparable position for up to one year following the birth or adoption of a child. Additionally, for two years following the birth or adoption, all parents are

PARENTAL LEAVE

	Total 2022	2021	2020	2019	2018
Total number of employees who were entitled to parental leave, by gender (FTEs)	11 148	13 374	13 235	17 223	17 382
Male	8 527	10 370	10 191	13 497	13 613
Female	2 620	3 004	3 044	3 726	3 769
Total number of employees who took parental leave, by gender (FTEs)	378	449	445	643	732
Male	236	273	317	432	464
Male (%)	62	61	71	67	63
Female	142	176	128	211	268
Female (%)	38	39	29	33	37
Total number of employees who returned to work in the reporting period after parental leave ended, by gender (FTEs)	373	472	471	599	689
Male	238	333	318	419	466
Male (%)	64	71	68	70	68
Female	135	139	153	180	223
Female (%)	36	29	32	30	32
Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work (FTEs)	421				
Male	311	n.a.	n.a.	n.a.	n.a.
Male retention rate (%)	93	n.a.	n.a.	n.a.	n.a.
Female	110	n.a.	n.a.	n.a.	n.a.
Female retention rate (%)	79	n.a.	n.a.	n.a.	n.a.
Total retention rate (%)	89	n.a.	n.a.	n.a.	n.a.

Clariant has been committed to promoting an inclusive and diverse environment and to ensuring a discrimination-free workplace with equal opportunities for many years. The belief that trust, integrity, appreciation, and respect make Clariant and its employees stronger, ensuring long-term prospects, has been incorporated in the Global Employment Policy and in the Code of Ethics. In addition, an inclusive culture has been anchored in Clariant's corporate purpose. In the context of the purpose-led strategy as well as through feedback from employees, customers, and investors, Clariant has set up its Diversity, Equity, and Inclusion roadmap for 2022 to 2030.

»Our new, more complete set of values reflects our purpose statement and our stronger growth mindset, and they will be the basis for an even stronger entrepreneurial culture.«

Conrad Keijzer, CEO

Management approach

The DE&I roadmap was designed with input from a diverse group of employees across Clariant, as well as with external advice. In 2022, Clariant launched its DE&I roadmap with associated DE&I aspirational goals, most of them to be achieved by 2030. Leadership alignment serves as the baseline for all actions in this regard. This was confirmed in November 2022, when the new Executive Leadership Team jointly and firmly committed to advancing toward those goals on a yearly basis. Clariant has now embarked on a journey with the Executive Leadership Team and the Leadership teams in the business units and global functions to further enhance the understanding of some of the key concepts of DE&I.

The DE&I roadmap follows a systematic approach and, as a first step and before the next revision in 2024/2025, it concentrates on four select core elements:

Leadership Commitment

- Clariant leaders continuously commit to a diverse and inclusive workplace and advocate with those who experience inequity and exclusion.
- Leaders will be made accountable for achievements and advocacy for underrepresented groups.

Inclusive Culture

- Everyone at Clariant demonstrates by their behaviors that every single employee is welcome and contributes to a strong Clariant.
- The goal is to increase the Inclusion Index, as a subset of questions from the regular engagement survey, from 66% in 2021 to 82% in 2030.

Gender Equality

- Clariant provides equal opportunities to all genders and equal pay for equal work. It aims to achieve gender parity by 2035.
- The goal is to strengthen the gender balance for non-frontline employees from 35% female in 2021 to 45% by 2030 and to grow the percentage of female leaders from 16% to over 30%.

Cultural Identity

- Clariant gives equal access to career development for all ethnicities and national identities while reflecting the business footprint in the leadership team.
- The goal is to increase the percentage of leaders of national origin outside Europe at the Senior Management level from 32% in 2021 to over 40% in 2030.

Clariant introduced the Inclusion Index in 2021, which measures employees' approval level for a select subset of DE&I-related items from the regular annual engagement survey questionnaire. In 2021, the approval level was 66%.

As of 2023, the relevant criteria for the Inclusion Index refer to the following key areas and questions:

- Belonging: I feel my organization values diversity (e.g., age, gender, ethnicity, language, education, qualifications, ideas and perspectives).
- Uniqueness: My voice is heard when I express my perspectives, even if they differ from the rest of the team.
- Psychological safety: I feel it is safe to speak up without fear of adverse consequences.
- Fairness: Employees from all backgrounds have an equal opportunity to succeed in my organization.
- Authenticity: The managers at Clariant practice inclusion, helping all employees feel important, capable, and understood.

Cultural identity is fostered at the corporate level by increasing the diversity of senior leaders. Beyond that, Clariant aspires toward its employees representing the diverse and global world we live and work in. In each country, efforts might be required to increase the outreach and advancement of underrepresented ethnicities and races within Clariant. On its Diversity, Equity and Inclusion journey, Clariant is committed to continuously reviewing and assessing how it can create a more equitable and inclusive workplace that engages a workforce reflective of the world's diversity.

Diversity, Equity, and Inclusion Aspirations

- Increase the Inclusion Index from 66 % in 2021 to 82 % in 2030
- Achieve gender parity by 2035*
- Grow the percentage of female leaders from 16 % to over 30 % and strengthen gender balance for non-frontline employees from 35 % female in 2021 to 45 % by 2030
- Increase the percentage of leaders of national origin outside Europe at the Senior Management level from 32 % in 2021 to over 40 % in 2030

*At entry level, first-level management level, and the business and technical associates level

DE&I is championed and steered on a strategic corporate level by the DE&I Steering Team, which met for the first time in July 2022 and periodically thereafter. Chaired by the CEO, Conrad Keijzer, and Chief Human Resources Officer, Tatiana Berardinelli, it comprises six additional senior leaders. The role of the DE&I Steering Team is to set the direction on Diversity, Equity, and Inclusion for Clariant by validating short- and medium-term action

plans and ensuring they are aligned with Clariant's business goals. It is further responsible for monitoring progress and outcomes, and it acts as an advisor by identifying and providing feedback on the processes and policies that could have an adverse impact on underrepresented groups. In addition to the global goals, each business unit and global function is establishing specific action plans and will review achievements twice a year.

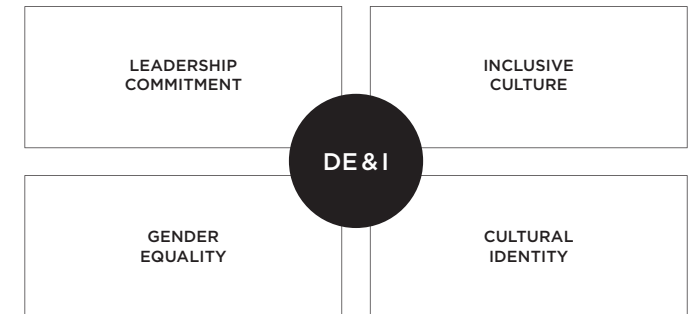
Priorities 2022

In 2022, the focus was on setting the ground for the DE&I roadmap and setting up the DE&I Steering Team, allowing for regular metrics reviews and creating sponsorship for → **Employee Resource Groups (ERGs)**. On a global and regional level Clariant has started partnerships with relevant external initiatives to support these processes, such as the global organization »Inclusive Employers« and the »Charta der Vielfalt« in Germany.

Actions to follow

For 2023, the objective is to focus on increasing the acumen of the Executive and Senior leadership around DE&I, implementing diverse slates and inclusive interview panels in the recruiting processes, developing specific learning measures for talents from underrepresented groups, and leveraging the community-specific knowledge of Clariant's ERGs. Also, based on a first analysis of gender pay gaps prepared in 2022, a roadmap of actions to resolve systematic causes for pay gaps will be defined in early 2023. Educational material and opportunities will be rolled out to increase awareness and understanding, with a special focus on Clariant leaders.

011 DE & I CORE ELEMENTS



Selected activities 2022

Clariant representatives engaged in various activities concerning the challenges of traditionally underrepresented groups in the workplace.

International Women's Day: On 8 March, Clariant held a live virtual panel discussion to mark International Women's Day and contribute to its motto and campaign theme for 2022: »#BreakTheBias.« Clariant's Chief Human Resources Officer, Tatiana Berardinelli, moderated a lively panel discussion around gender diversity, bias and allyship. Clariant CEO Conrad Keijzer, two of Clariant's female members of the Board, one of Clariant's senior leaders, and a DE&I practice leader from Kincentric Consulting joined this session.

Appreciating uniqueness and authenticity: During Pride month in June, Clariant raised the flag to show allyship with the LGBTQ+ community and featured a series of portraits of employees who are a part of that community on internal and external communication boards. October was dedicated to Disability Employment. Internal articles as well as a panel discussion with NGO representatives and employees living with a disability and parents of children with a disability provided valuable insights. Also, a global poster campaign was launched to raise awareness about the challenges in offices and production sites.

Global Inclusion Week: In September Clariant dedicated a week to inclusion. Special training on allyship was offered to Clariant's employees. The highlight of the week was an event hosted by an external speaker from Duke University on belonging in the workplace, the call for which has never been more urgent than it is today.

010 DIVERSITY, EQUITY, AND INCLUSION ROADMAP OF ACTIONS





Policies and guidelines

Clariant's membership in the → **UN Global Compact**, the company-wide Group Policy on Human Rights, and global employment standards form the basis for activities in the DE&I area. → **Clariant's worldwide family support policy** and → **flexible working policy** are a strong pillar in allowing parents in general, and particularly women, to combine professional development and personal life. In particular, Clariant is continuously reassessing how it can do more for parents and caregivers.

Clariant is committed to a discrimination-free workplace and to equal opportunities. The company promotes an inclusive and diverse environment where everyone can learn and develop. Clariant has started reviewing its policies for their inclusivity at the end of 2022 and will continue to do so in 2023.

Clariant does not tolerate discrimination based on race, ethnicity, nationality, religion, gender or gender identity, disability, age, marital status, sexual orientation, or membership in a trade union or political party. In hiring, compensation, and promotion, each

employee and applicant has the right to be treated solely on the basis of personal abilities, skills, performance, and potential.

Employee resource groups

Clariant strongly encourages employees to join employee resource groups (ERGs) as their leveraged expertise is also a valuable contribution to the Clariant DE&I journey. These groups are open to every Clariant employee. They are voluntary, employee-led, and sponsored by the Executive Leadership Team. They create an open forum for sharing ideas, concerns, and mutual support, and therefore foster a greater understanding of various perspectives. The ERGs also offer support to local communities through volunteering activities.

In 2022, »Clariant Pride,« a new global group, was launched and is sponsored by Richard Haldimann, Chief Technology & Sustainability Officer. It is the mission of Clariant Pride to build a pride community that offers an inclusive space for the LGBTQ+ community and its allies to share experiences. Pride is a safe space for like-minded people. It sees itself as a sparring partner for Clariant to address non-inclusive behaviors and processes and act for the benefits of the LGBTQ+ community. It is a platform to educate all Clariant employees, with the support of allies and ambassadors.

DIVERSITY OF GOVERNANCE BODIES AND EMPLOYEES

	Total 2022	2021	2020	2019	2018
Percentage of individuals within the Board of Directors (%)					
Male	64	73	75	75	75
Female	36	27	25	25	25
30-50	0	9	8	0	8
Over 50	100	91	92	100	92

NUMBER OF INCIDENTS OF DISCRIMINATION

	Total 2022	2021	2020	2019	2018
Total number of incidents of discrimination during the reporting period	0	0	0	2	3

NUMBER OF EMPLOYEES BY AGE GROUP

	2022		2021		2020		2019		2018	
	FTEs	Percent	FTEs	Percent	FTEs	Percent	FTEs	Percent	FTEs	Percent
Total	11 148		13 374		13 235		17 223		17 901	
Under 30	1 667¹	14.9	1 907¹	14.3	1 896	14.3	2 474	14.4	2 575	14.4
Male	1 208	10.8	1 398	10.5	1 367	10.3	1 761	10.2	1 832	10.2
Female	458	4.1	510	3.8	529	4.0	713	4.1	743	4.2
30-50	6 579	59.0	7 843	58.6	7 798	58.9	10 092	58.6	10 664	59.6
Male	4 914	44.1	5 944	44.4	5 889	44.5	7 844	45.5	8 304	46.4
Female	1 665	14.9	1 899	14.2	1 909	14.4	2 248	13.1	2 360	13.2
Over 50	2 902	26.0	3 624¹	27.1	3 541	26.8	4 657	27.0	4 662	26.0
Male	2 405	21.6	3 028	22.6	2 959	22.4	3 891	22.6	3 870	21.6
Female	497	4.5	595	4.4	582	4.4	766	4.4	792	4.4

¹ The sum does not add up as the numbers are rounded.



MANAGEMENT FUNCTIONS

	Total 2022	2021	2020	2019
Total Management functions (in FTEs)	585	676	691¹	812
Male	477	569	575	674
Female	108	107	115	138
Senior Management functions (in FTEs)²	168	190	196	234
Male	144	171	177	209
Female	24	19	19	25
Junior Management functions (in FTEs)³	417	486	495¹	578
Male	333	398	398	465
Female	84	88	96	113

¹ The sum does not add up as the numbers are rounded.

² Executive Committee and Management Levels 1–4

³ Management Level 5

In 2022, the Women Inclusion Network (WIN) hosted three virtual training sessions on Digital Presence and Sustainability, which complemented its virtual coffee breaks and peer coaching groups. The Women Inclusion Network expanded its scope from Germany to worldwide and is sponsored by Jens Cuntze, Business President Catalysts and APAC. It is the mission of WIN to empower all women at Clariant to make the organization a better workplace for all and help it achieve its aspirational goal of a stronger gender balance. WIN is a grassroots initiative to promote the advancement of female employees within Clariant, using diversity of thought and life experience to fuel innovation.

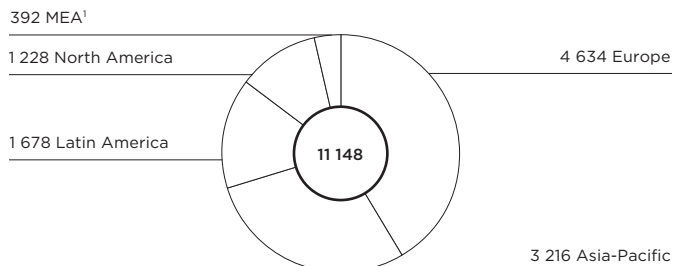
An additional global group is in the process of being created for employees with disabilities, as well as another group in the United States for cultural identity.

BREAKDOWN OF EMPLOYEES PER NATIONALITY

Nationality	2022		2021		2020		2019		2018	
	FTEs	Percent	FTEs	Percent	FTEs	Percent	FTEs	Percent	FTEs	Percent
German	3 044	27.3	3 922	29.3	4 023	30.4	4 595	26.7	4 619	25.8
Indian	1 212	10.9	1 688	12.6	1 517	11.5	1 798	10.4	1 864	10.4
Chinese	1 019	9.1	1 081	8.1	1 031	7.8	1 181	6.9	1 284	7.2
Brazilian	894	8.0	1 053	7.9	981	7.4	1 179	6.8	1 116	6.2
Indonesian	593	5.3	618	4.6	620	4.7	724	4.2	726	4.1
Mexican	357	3.2	535	4.0	521	3.9	597	3.5	598	3.3
Spanish	314	2.8	314	2.3	310	2.3	427	2.5	414	2.3
Polish	288	2.6	276	2.1	282	2.1	351	2.0	347	1.9
Turkish	255	2.3	290	2.2	282	2.1	396	2.3	400	2.2
Japanese	194	1.7	258	1.9	260	2.0	279	1.6	269	1.5
Colombian	189	1.7	191	1.4	183	1.4	268	1.6	261	1.5
Argentinian	171	1.5	186	1.4	191	1.4	219	1.3	230	1.3
French	155	1.4	161	1.2	167	1.3	236	1.4	488	2.7
Italian	125	1.1	137	1.0	140	1.1	515	3.0	529	3.0
Romanian	122	1.1	92	0.7	36	0.3	23	0.1	14	0.1
Swiss	120	1.1	137	1.0	141	1.1	139	0.8	138	0.8
South African	118	1.1	139	1.0	142	1.1	182	1.1	189	1.1
Others (incl. North America, for whom no nationality data is recorded)	1 980	17.8	2 298	17.2	2 408	18.2	3 612	21.0	3 908	21.8

¹ Numbers below 1.0 % threshold

012 FTEs BY REGION



¹ Middle East and Africa

Diversity in leadership positions

The company's structured global succession planning promotes a diversity of profiles for leadership positions, encouraging cross-business and cross-functional experiences. As a result of all these efforts, the company achieved representation of women at 24% of the total workforce and 15.8% in Management Level positions. With the new DE&I roadmap and associated objectives, Clariant aspires to increase the percentage of female leaders to over 30% by 2030. The objective concerns all Management Levels, from junior (1) to top (5). The current composition of the new Executive Leadership Team (ELT) with three women and five men reflects a share of female leaders of 37.5%. On the Board of Directors, 36% of the members are women, which is above the Swiss gender quota of 30% for executive boards in publicly traded companies.

Over 90% of management positions are filled by nationals from the region where the positions are located, and 95% of all managers are non-Swiss, which reflects Clariant's international footprint and diversity. Regarding the percentage of leaders of national origin outside Europe at the Senior Management level, the objective is to move from 32% in 2021 to over 40% in 2030. National origin refers to the nationality associated with the employment contract. This goal relates to the senior and top leadership levels. According to Clariant's growth plans, Europe will represent less than 40% of sales by 2025. Increasing the share of nationals outside Europe serves the purpose of ensuring that the

Clariant leadership reflects the business footprint to include different regional perspectives and increase the quality of global decision-making. While, at the end of 2022, 41% of Clariant's employees were of European origin, this applies to 61% of junior management and almost 66% of senior management.

Proportion of senior management hired from the local community

In 2022, 57% of all senior managers (Executive Leadership Team and top four Management Levels) were citizens of – or had an indefinite right to reside in – the country where they were employed. Within the European Union, citizenships of all member states are considered »local.«

Diversity in the recruiting process

Clariant is committed to fostering diversity and inclusion in its workforce. Clariant recruits and promotes individuals based on their skills and abilities, regardless of their social identity. A diversity of perspectives and ways of thinking is seen as essential to driving innovation and growth.

Clariant uses a variety of strategies to ensure that its recruitment practices support its DE&I goals. These include targeted outreach efforts to underrepresented groups, training on unconscious bias, and the use of inclusive language in job postings. Clariant also utilizes data to track progress toward DE&I targets and to identify areas for improvement. By continuously evaluating and improving recruitment practices, Clariant is able to attract and retain a diverse talent pool that is reflective of the communities it serves.

Ratio of basic salary and remuneration of women and men

Fair payment is fundamental for the company. Regional and local HR teams work to avoid or eliminate discriminatory practices in work-related activities. This applies in particular to pay, training, career guidance, and social security. Globally, the average base salary of female employees in 2022 rose to 98.2% of the average salary of male employees. Departures were not included in these calculations. In 2023, Clariant will continue to analyze potential gender pay gaps and define corrective measures if needed.

OCCUPATIONAL HEALTH AND SAFETY

As a global chemical company and a responsible employer, Clariant is strongly committed to promoting and protecting a healthy culture in the workplace. Zero accidents worldwide is the goal Clariant aims to achieve. Therefore, processes regarding occupational safety are top priorities to protect Clariant's employees, ensure seamless manufacturing operations, and meet legal requirements and regulations at any time. Aside from observing health protection, meeting safety requirements is paramount for staff morale, labor costs, and productivity, as well as operational costs.

Management approach

Occupational Health and Safety at Clariant is managed globally by the Environmental Safety and Health Affairs (ESHA) department. In addition, the company has appointed ESHA experts worldwide who are responsible for Occupational Health and Safety in all countries and across all business units. All measures apply to all employees who work under the direct supervision of a Clariant employee (Clariant full-time employees and supervised workers). This also includes contractors who must follow Clariant's rules and measures.

To ensure the health and safety of employees, Clariant has a set of principles and guidelines in place. They are accessible online in the Group Management System (GMS) database for the employees in various languages. The ISO 45001 standard, which formulates requirements for an Occupational Health and Safety management system, is authoritative. Clariant made the transition from the current OSHAS 18001 certification to ISO 45001 in 2020. In 2022, audits were carried out in accordance with ISO 45001. The certificate confirming compliance with the standard is available on the → [Clariant website](#).

Further guidelines cover a variety of safety issues, such as fire and explosion protection, the handling of hazardous substances, and the identification of risks in chemical production. In addition, Clariant adheres to the precautionary principle when it comes to risks that have not yet been fully clarified scientifically. The safety of employees and the work environment is also anchored in Clariant's sustainability policy.

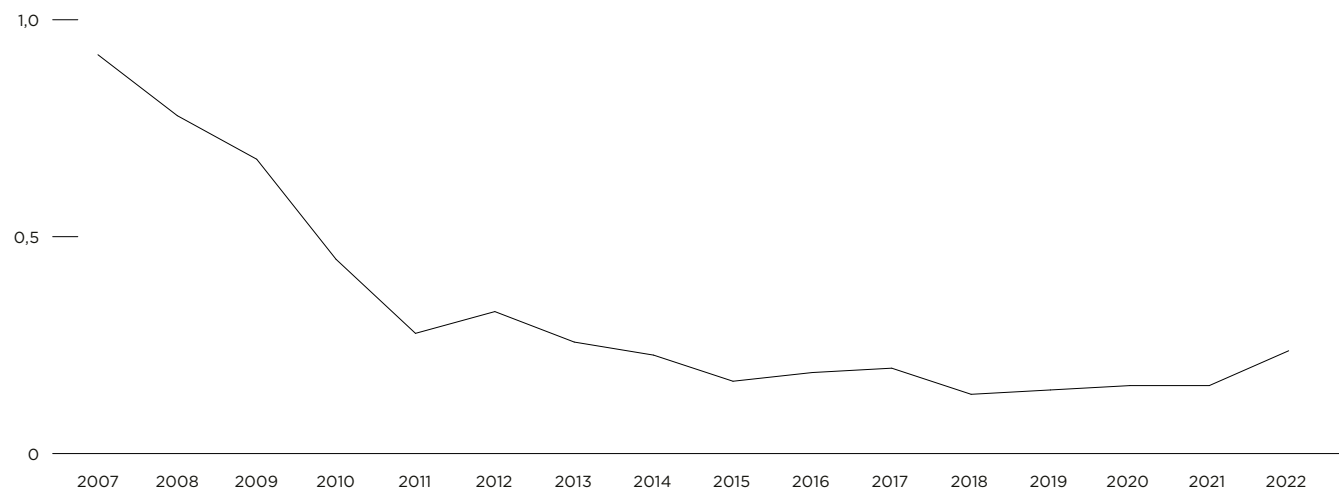
Goals and measures

Clariant aims to achieve a zero accidents culture and be a leader in safety in the chemical industry. Progress in this area is linked to the bonuses of management, and safety is integrated into the daily routines of all operations. In 2022, Clariant decided to move from LTAR, as bonus-relevant metric, to DART (Days Away, Restricted, or Transferred). This increases the focus on smaller events in addition to the more severe lost-time accidents, which helps to establish a zero-accident culture.

In 2022, the overall health and safety performance at Clariant's sites declined slightly. The total number of lost-time accidents rose from 23 in 2021 to 29 in 2022. In addition, 9 lost-time accidents occurred involving contractors, which is a strong decrease compared to 17 accidents in 2021. First aid was required for 83% of all recorded injuries; 12% needed medical treatment; and 5% of recorded injuries were restricted work cases. The most frequent injury types in 2022 were open wounds (24%); sprains, bruises, and contusions (24%); bone fractures (14%); and chemical burns (14%). Burn injuries, internal injuries, poisonings, and injuries by foreign bodies each accounted for 3%. There were no limb losses or injuries due to electrical incidents.

The lost-time accident rate (LTAR) of 0.24 accidents per 200 000 hours of work rose compared to 2021. The total number of lost workdays decreased significantly from 974 in 2021 to 712 in 2022, representing a decrease of 27%. This indicates that job-related injuries were less severe in 2022 than in 2021. Accordingly, the lost-workday rate (LWDR) decreased from 7.3 workdays lost per 200 000 hours of work in 2021 to 5.89 workdays lost per 200 000 hours of work in 2022.

013 DEVELOPMENT OF CLARIANT LOST-TIME ACCIDENT RATE (LTAR)



There were no fatalities as a result of work-related ill health in 2022.

For 2022, Clariant defined the DART rate (the Days Away, Restricted, or Transferred), which includes Lost-Time Accidents and Restricted Work cases. With the definition of this new indicator, Clariant increases the insights into the accident occurrence even more to decrease the total number. The milestones are defined on the Group and business unit/service unit level for the calendar year. The DART rate rose from 0.34 in 2021 to 0.39 in 2022.

Tracking health and safety

Safety performance and initiative updates have been integrated as a standing agenda item in every Executive Leadership Team (ELT) meeting, during which all DART events and the overall company performance are reviewed and corrective actions are discussed. One of the consequences has been the introduction of an alert system alerting the business unit heads about any DART event in their business unit within 24 hours of the event, as well as a call from the ESHA responsible to provide more insights into the accident within 7 days of the event.

Clariant utilizes dashboards for Occupational Health and Safety reporting. All sites are obliged to report an accident resulting in loss of work immediately. This concerns cases where the affected employee cannot work for at least one day and cases of restricted work. For these cases, investigation reports are mandatory.

COVID-19 pandemic

In 2022, protecting the health of all employees again has been a top priority for Clariant. Due to the pandemic Clariant had developed more than 30 different response scenarios to react to possible developments. In 2022, many safety measures and hygiene protocols were still in place at the beginning of the year. During the course of the year, various measures were revoked or relaxed, depending on the local situation. The option to work from home remained in place. Testing, wearing masks, and observing safety distance were common precautionary measures throughout the year.

WORK-RELATED INJURIES ¹

	Total 2022	2021	2020	2019	2018
Number of fatalities as a result of work-related injury	0	0	0	0	0
Rate of fatalities as a result of work-related injury (per 200 000 hours)	0	0	0	0	0
Number of high-consequence work-related injuries (excluding fatalities)	0	2	2	0	1
Rate of high-consequence work-related injuries (excluding fatalities) (per 200 000 hours)	0	0.01	0.01	0	0.005
Number of recordable work-related injuries	97	141	157	232	248
Rate of recordable work-related injuries (per 200 000 hours)	0.80	1.00	0.95	1.21	1.31
Number of hours worked	24 196 000	28 440 000	33 262 000	38 556 000	37 796 000

¹ Information about »not employees« (e.g. contractors) are not in the same way gathered like »all employees« (own workers and supervised workers) due to medical data privacy.

OCCUPATIONAL ACCIDENTS

	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019	2018
Lost-time accidents ¹	29	n.a.	29	23	26	28	27
Male	27	n.a.	27	21	26	27	27
Female	2	n.a.	2	2	0	1	0
Lost-time accident rate (LTAR) ²	0.24	n.a.	0.24	0.16	0.16	0.15	0.14
Male	0.22	n.a.	0.22	0.15	0.16	0.14	0.14
Female	0.02	n.a.	0.02	0.01	0.00	0	0.00
Lost-time accident rate (LTAR) ² for contractors	0.30	n.a.	0.30	0.30	0.14	0.22	0.24
Lost-time accidents by supervised (non-Clariant) workers (included in the overall number of occupational accidents)	6	n.a.	6	1	1	1	6
Male	6	n.a.	6	1	1	1	6
Female	0	n.a.	0	0	0	0	0
Lost workdays (LWDs) caused by occupational accidents	712	n.a.	712	974 ³	1 229	661	879
Male	709	n.a.	709	962 ³	1 229	648	874
Female	3	n.a.	3	12	0	13	5
Lost workday rate (LWDR)	5.89	n.a.	5.89	6.85	7.39	3.43	4.68
Number of cases of recordable work-related ill health	0 ⁴	n.a.	0 ⁴	0	0	3	1

¹ Number of occupational accidents with at least one day's work lost

² Occupational accidents with at least one day's work lost relative to 200 000 hours of work

³ 279 lost workdays (LWDs) from 2019 and 2020 incidents

⁴ In 2022, there were no fatalities as a result of work-related ill health.

Occupational Health and Safety programs and training

Occupational safety at Clariant means much more than just wearing the necessary protective equipment. It is a commitment to address safety comprehensively and to ensure that employees come home from work as healthy as when they arrived. To increase awareness of

its employees globally, Clariant carries out various trainings and awareness measures every year. In more than 150 locations worldwide, Clariant organized safety weeks in the reporting year. For the more than 120 safety weeks executed in 2022, Clariant provided an information hub with ideas and training modules besides the regular trainings in the different units.

015 6 LIFE-SAVING RULES

1 Use fall protection when working at heights greater than 1.80 meters or 6 feet and outside a guarded area.

2 Wear Personal Protective Equipment (PPE) when required.

3 Always work with a valid work permit whenever required.

4 Do not disable safety-critical equipment without authorization and without having additional precautions in place.

5 Use lock out/tag out procedures to protect you from danger.

6 Don't walk or work under suspended loads.

The company continued introducing the Six Life-Saving Rules first presented in 2021. Every worker at Clariant must be aware of Clariant's Life-Saving Rules. They are part of the Code of Ethics and must be complied with. Witnesses to a breach of these rules should immediately notify the line manager or ESHA.

In addition, in 2022, the company conducted work permit checks to improve the quality of the work and, thus, safety.

Protection against health hazards

Clariant's internal guideline »Protection from Hazards to Health« serves to prevent work-related illnesses and regulates the identification of work-related health hazards for all workplaces. The guideline includes defined review criteria and cycles. The Substitution, Technical measures, Organizational, and Personal (STOP) principle defines the hierarchy of measures to be taken to prevent incidents. It must be applied to the control measures. A comprehensive audit system ensures quality and triggers continuous improvements.

Handouts on Occupational Health and Safety-related topics

As part of the »Safety Moments« initiative, more than 375 illustrated handouts have been created for employees at Clariant and the training on Occupational Health and Safety-related topics – from operations to administration – since 2017. These are presented and discussed, for example, at the beginning of meetings and can be accessed via an internal platform. At the end of 2022, there were more than 300 »Safety Moments.«

Reporting near misses and unsafe situations

To report unsafe situations and near-miss incidents, Clariant's employees can either approach their supervisors directly, submit a report using »Safety Counts!« cards, or utilize an online system at some sites. If employees identify a hazardous situation, they are permitted and encouraged to stop the activity and report to their supervisor. After a work-related incident, Clariant conducts an investigation to identify corrective actions to avoid recurrence. Specific methodologies are provided and described in Clariant's investigation guide. According to internal processes, Lost-Time Accident and Restricted Work case reports are only closed if an appropriate investigation report is available and filed. The decision to close a report is made at the Group level by an assigned member of Corporate ESHA. In 2022, the numbers for unsafe situations and near misses stayed at a high level, which shows the high interest in and awareness of safety.

Global program for safe working conditions

AvoidingAccidents@Clariant is a global program that creates safe work environments, raises awareness of safety, and illustrates Clariant's focus on prevention. Under the umbrella of the program, Clariant rolled out multifaceted trainings and tools to achieve the zero-accidents objective. These include, for example, safe behavior trainings, safety leadership improvements, safety checks, safety days, and safety weeks. Since the start of the program in 2007, the lost-time accident rate (LTAR) has decreased from 0.92 to 0.24 in 2022, as can be seen in → Figure 013.

Learning Management System (LMS)

Clariant has a Learning Management System (LMS) that is used to provide, steer, and monitor various programs such as Occupational Health and Safety-related e-Learnings, webinars, and workshops. Additionally, there are special trainings regarding work-related hazards, hazardous activities, and potential hazardous situations. Additionally, there are special trainings provided by the respective plant and the building management regarding work-related hazards. These trainings are customized and depend on the jobs to be performed.

Hazard identification, risk assessment, and incident investigation

Workplace assessment

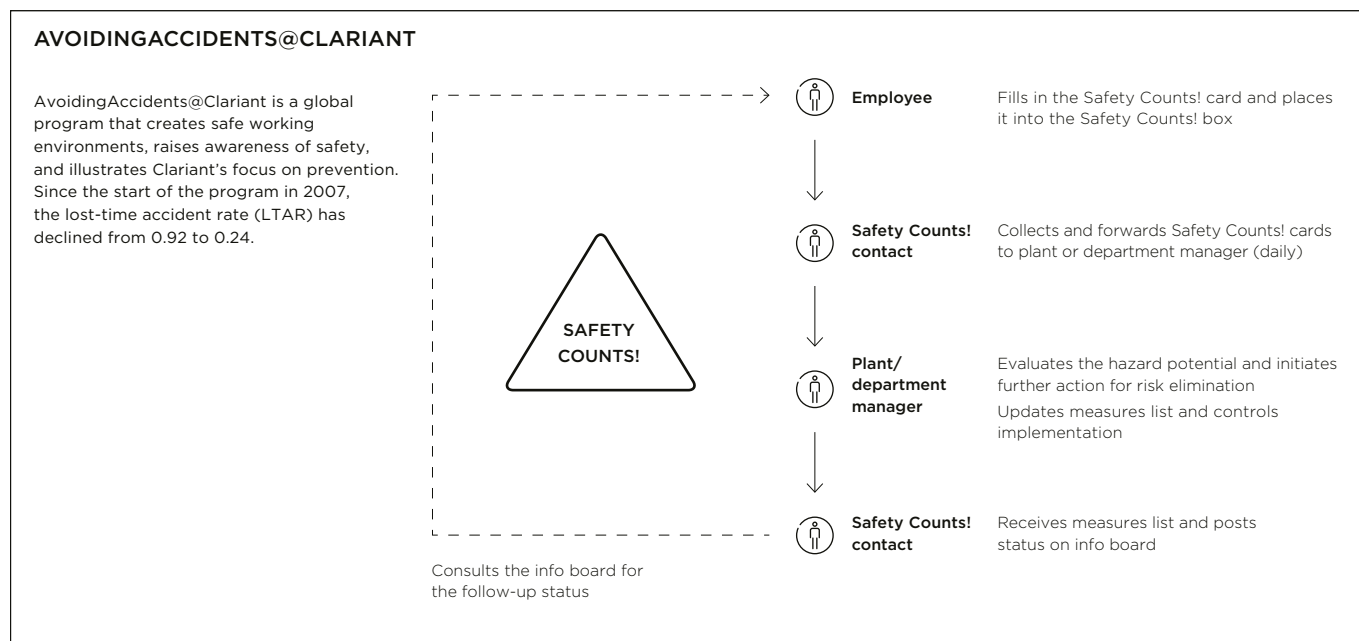
As part of Clariant's audit program, internal experts from Corporate ESHA and Integrated Group System Management (IGSM) regularly visit sites to review workplace and process safety standards. To do this, they evaluate the facilities and determine corrective actions to address the main risks. Process Hazard Analyses (PHAs) are conducted regularly by competent personnel at the

sites. Clariant established a Process Safety Academy to enhance the standard. This one-week training delivered theory and also practical knowledge on relevant Process Safety topics, facilitating a better implementation of the Process Safety standards at the sites. PHAs are reviewed at least every five years and updated as changes occur. If a change is implemented in a facility, change management procedures ensure that this change is assessed and controlled to avoid risks.

To protect employees from work-related hazards, each workplace undergoes a systematic, multistep assessment. This includes workplace ergonomics, lighting, noise, indoor air quality, humidity, and temperature. If a workplace falls below defined minimum requirements, Clariant takes measures to redesign that workplace.

Employee health checks

At certain workplaces, Clariant carries out regular comprehensive employee health checks. The objective is to detect signs of illness as early as possible. Clariant takes care to obtain special health certificates and to carry out vaccinations that are required for



EMPLOYEES COVERED BY AN OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

	Total 2022	2021	2020	2019	2018
Percentage of employees covered by an Occupational Health and Safety management system (%)	100 ¹	100	100	100	100
Percentage of employees covered by an Occupational Health and Safety management system that has been internally audited (%)	100 ¹	100	100	100	100
Percentage of employees covered by an Occupational Health and Safety management system that has been externally audited or certified (%)	100 ¹	100	100	100	100

¹ The value includes all employees: 12 098 own employees + 1 034 supervised workers.

some jobs. Medical professionals anonymously report problems identified during employee personal health checks. Depending on local laws, these reports are addressed to the local ESHA organization or the appropriate area. The reported information is used to review mandatory workplace risk assessments in accordance with the guideline »Protection from Hazards to Health.« Clariant ensures medical confidentiality.

**Worker participation, consultation,
and communication on Occupational Health and Safety**
Ninety-six percent of staff employed in production are represented by a safety committee. Considering the whole workforce

(production, procurement, sales, and management), 88% of staff are represented. At Clariant, safety issues are also addressed in committees that do not primarily deal with this topic. In case internal standards need to be modified or updated, a working group is established. The resulting draft is sent to the different stakeholders in Clariant's business units and regions to solicit feedback. Feedback and requests for revisions are duly considered before the standard is finalized and approved. The relevant information is subsequently published in the Group Management System (GMS) database and on SharePoint.

OCCUPATIONAL ACCIDENTS BY REGION

	2022		2021		2020		2019		2018	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Occupational accidents with at least one day's work lost	27	2	21	2	26	0	27	1	27	0
Europe, the Middle East, and Africa	16	2	17	2	18	0	15	0	14	0
Asia-Pacific	3	0	0	0	1	0	1	0	2	0
Latin America	7	0	2	0	6	0	4	1	7	0
North America	1	0	2	0	1	0	7	0	4	0

OCCUPATIONAL ACCIDENTS OF CONTRACTORS

[illegible]

CUSTOMER RELATIONSHIPS

Customer Relationships refers to establishing and continuously enhancing relationships with customers. As consumer demands, resource availability, and legal requirements evolve ever more rapidly, Clariant has made it a priority to position itself in such a way as to be able to anticipate impending changes and trends so that it can best recognize and acknowledge its customers interests and needs. Clariant collaborates with customers and takes initiatives to understand how they may be supported in achieving their goals. Engagement includes building and developing relationships with mutual trust. Establishing and maintaining strong customer relationships is important for Clariant throughout its complete value chain – from the procurement of raw materials to the end-consumer markets.

016 CUSTOMER APPROACH ANCHORED IN VALUES



- See the world through our customers' eyes
- Anticipate customers' needs
- Serve customers as one team
- Ensure long-term mutual success

Management approach: increasing customer focus

Customer engagement lies at the core of Clariant's commercial strategy. Clariant is committed to adding value for its customers by delivering innovative, competitive, and sustainable solutions, and to creating continuous, profitable growth. In the past years, Clariant has built additional marketing capabilities in its business units to continue its journey from a product-driven to a customer-centric organization. With the introduction of the new purpose in 2021 and the purpose-led strategy, customer focus has been anchored as a purpose dimension. As such, Clariant aims to shape the future with customers and a fruitful collaboration for meaningful impact. To create this impact, Clariant embodies the customer perspective, as well as their demands, and leverages regional market knowledge.

In 2022, Clariant followed up on this approach and shifted the focus even more toward its customers. By refining its sustainability priorities, it reinforced the commitment to work more closely with them, especially in the delivery of sustainable solutions and products. The aim is to go beyond »just chemistry« and offer a tangible benefit to the customers with any new product or formulation introduced to the market. And this is also reflected in the new company claim »Greater chemistry.«

In addition, the new organizational and leadership structure with fewer hierarchical layers and less complexity will help Clariant to continue to provide the best support for customers going forward. The new global company setup allows for more customer proximity in three business units that are headquartered in their respective key markets. With this corporate setup, Clariant started to structure the businesses around markets as opposed to product lines. This shift enables a more customer-centric and agile company.

Understanding customer needs

Creating beneficial partnerships with customers requires a deep understanding of their interests and needs. To promote a mindset supportive of this idea, Clariant announced new values in September 2022. Five values reflect the commitment to a strong and holistic company culture, and it is the first value that directly makes an important connection: Win with our customers, which in the day-to-day work translates into: customer satisfaction is key to Clariant's success.

Customer dialogue

Clariant aims to strengthen the customer experience further. Therefore, it increases interactions through ongoing dialogue with existing customers, new prospects, and other partners along the value chain to uncover new business opportunities. Its flagship customer dialogue project is the customer satisfaction survey, which is conducted every other year. It provides comprehensive customer feedback. Due to the ongoing Group-wide transformation processes in 2022, the next regular survey, however, was rescheduled for 2023.

A highlight event in 2022 was the → **Clariant Roundtable** on bio-based and segregated surfactants. For this event, Clariant brought together experts in the drive toward a net zero economy. Contents covered by external speakers included regulatory changes designed to encourage the transition (Carbon Trust), technologies required (nova-Institute), and how to inform and educate consumers on the journey (Mr. Goodvertising). The fruitful discussions with Christian Vang and participants focused on how the chemical industry and its customers can connect the dots between rapidly changing regulations and technologies. In addition, ways were considered on how to encourage the end consumer to play the most vital role of all, which is to change their consumption habits.

Clariant, in the Business Unit Catalysts, introduced a new digital customer survey tool called »Customer voice.« For the Business Unit Catalysts, a new digital customer survey tool called »MS Customer Voice« was introduced. With this new tool, feedback is being collected in real time after technical service and marketing events. This enables Business Unit Catalysts to directly and systematically gather feedback about participant satisfaction, as well as information about further/future business and service opportunities. So far, 61 feedback responses were collected for ACT (14) and Marketing (47).

The free online customer portal ClariHub, which was introduced in 2021 and used by the Business Unit Industrial & Consumer Specialties (ICS) to get into direct contact with its customers, has proven to be a popular and successful global tool again in 2022. Having achieved the mark of around 1 700 customers at the end of the reporting year, the ClariHub portal helps Clariant to immediately respond to customer inquiries, and in addition, it serves as »information hub« for Clariant customers with real-time ingredient data and »24/7 access« to various documentation. For example, users are enabled to track key metrics or find reference documents, such as MSDS and TDS files, ecolabel information, trend reports, or webinars. In addition, they are provided with relevant information such as FAQs and troubleshooting tips, as well as company and product details. While ClariHub serves as an extra channel for customer communication and queries, it is also helpful for Clariant to derive additional oversight and visibility. The portal in 2022 was extended with the latest insights from »BeautyForward,« the Clariant global trend platform for the Personal Care industry.

Clariant's customer relationship management system provides employees with a guided process, helping them to prepare and manage business opportunities in a transparent and productive manner. Following up on improving customer relationship management, a new feature was introduced in 2022, which allows for more comprehensive information to be collected and recorded by the commercial team, such as customer requests and contact details.

Identifying opportunities

In every Clariant business unit, a global head of marketing leads a dedicated team of marketing professionals. To identify and capture profitable growth opportunities, marketing teams work closely with technical and sales functions. Clariant regularly analyzes market trends and demands. In addition, leads from the web and follow-up exchanges with the customers serve as a source of information regarding customer needs. As the direct point of contact, Clariant sales managers are trained and sensitive to find out more about customer demands. They document their assessments in the CRM, which serves as the tool to track further actions.

Customer relationships and COVID-19

In 2022, due to a zero-COVID policy in China, Clariant dealt with various restrictions related to this region. Overall, interactions were digital, or, if possible, they involved an increasing number of physical meetings again.

In China, Clariant started a comprehensive digitalization approach called »Dragon Boat« in 2021. »Dragon Boat« efforts are tailored to Chinese user behavior and Chinese search engines. The first projects focused on WeChat, the most popular local digital platform: A dedicated Chinese website and a chatbot for Business Units Additives and Industrial & Consumer Specialties enable Chinese customers to access product information and a digital interaction with Clariant.

Customer journey

In a global 2021 project, Business Unit Industrial & Consumer Specialties (ICS) mapped the customer journey for a typical buying process, from the first contact to delivery and invoicing. The project aimed to improve the customer experience, particularly in the form of responsiveness. From an inside-out point of view, the business unit analyzed the importance of individual touchpoints for customers and compared its performance against competitors. For this purpose, it conducted extensive qualitative interviews with key stakeholders in all regions.

An important outcome and key improvement from this evaluation is »ClariHub« (referred to above), offering easy access for customers to extensive product information. Because of this, it has become easier for customers to identify and select ingredients from the Clariant portfolio. The platform is under continuous improvement, and new functionalities are developed and offered frequently, like the recent developments of BeautyForward and ClariCoat.

With the launch of → »BeautyForward 6« in 2022, Clariant empowers the personal care industry to make natural ingredient choices. With the new → ClariCoat, customers are able to find additives for paint formulation with just a few clicks.



Data-driven strategies

Due to increasing raw material and energy costs, Business Unit ICS in 2022 continued the algorithm-based price optimization modeling. These algorithms recommend pricing corridors for individual customers and products. This automated process saves significant time for analysis and computation. The algorithm optimization continues further in 2023, expanding the data driven capabilities in identifying pricing outliers and value-based pricing opportunities.

Additional price management tools help the company to integrate different perspectives and information, to arrive at optimum prices, and to track them. In 2022, Clariant developed the »churn prediction tool,« using data and statistics to identify the risk of losing a specific customer business. This tool will remain relevant and valuable in times of increased market volatility.

Customer privacy

In 2022, Clariant received no substantial complaints from outside parties or regulatory bodies concerning breaches of customer privacy or losses of customer data. Similarly, Clariant is not aware of any identified leaks, thefts, or losses of customer data.

HUMAN AND LABOR RIGHTS

Clariant is firmly committed to protecting human and labor rights in all business operations. This includes the entire supply chain and all contracted workers. The company expects all suppliers and business partners to comply with these human and labor rights standards.

Management approach

The Sustainability Transformation team within Technology and Sustainability, together with the Human Resources, Legal, and Procurement departments, manage human and labor rights at Clariant.

Evaluation of the management approach includes benchmarking against Clariant's peers, using external benchmarks such as the Dow Jones Sustainability Index, and participating in external networks, discussions, and report reviews.

→ [Read more about ESG Ratings & Rankings](#)

Human and labor rights policies

Over the years, Clariant has built a comprehensive framework of policies, guidelines, and processes to ensure the implementation of its human and labor rights commitments.

The company's Human Rights Policy Statement is in line with the United Nations (UN) Human Rights Declaration and the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work. This policy statement applies to all direct operations and activities. It states clearly that Clariant expects its suppliers and contractors to uphold the same high standards.

Clariant's Code of Ethics also includes requirements regarding key human and labor rights. It is compulsory for the company's direct operations, including all joint ventures that it controls or in which it holds a majority interest.

Clariant's general terms and conditions of purchase refer to the company's Supplier Code of Ethics. It extends to all its suppliers and their contractors. As part of its collaboration in the Together for Sustainability (TfS) initiative, Clariant regularly assesses its suppliers in relation to social, governance and environmental topics. The assessment is performed by the ratings provider EcoVadis and includes an evaluation of a supplier's management system related to human rights.

Clariant's 2018 → **Global Employment Policy** and its employment standards guidelines protect workers' rights regarding nondiscrimination, forced labor, child labor, fair working conditions, freedom of association, privacy, effective remedies, and workplace health and safety. The documents are available in local languages. They are also part of the onboarding curriculum for all new employees.

Clariant supports collaborative initiatives that promote sustainability and respect for human and labor rights across the industry. The company is a signatory to the UN Global Compact and a member of the Together for Sustainability (TfS) initiative, and the Roundtable on Sustainable Palm Oil (RSPO).

Priorities 2022

Clariant regularly updates its human and labor rights framework in anticipation of upcoming legislation. In 2022, a focus was on preparing for increased due diligence due to the implementation of the German Supply Chain Act (Lieferkettensorgfaltspflichtengesetz), for which one German Clariant subsidiary will fall into the scope starting as of 2024. A separate project was set up for this, working on the amendment of risk assessment and risk management for own operations and for suppliers for the entity in scope. The objectives are to amend the risk assessment and risk management for suppliers, conduct a risk assessment for Clariant operations, and establish the required documentation and reporting, all with a focus on the German entity. According to timeline and planning, the project will be completed by mid-2023.



In addition, a cross-functional project (Compliance, Sustainability Transformation, Procurement, HR, Communication) started in January 2023 to develop a more comprehensive Human Rights Framework and to review and update associated policies. The goal is to further develop Clariant's governance structure and processes based on a benchmark analysis and mapping of the regulatory requirements and to monitor implementation of measures internally and within the supply chain.

Ensuring human and labor rights compliance in high-risk supply chains will remain a challenge and a priority for Clariant. This relates especially to supply chains for palm-based and other renewable-based materials.

Human and labor rights assessment

Clariant relies on well-established management and monitoring systems that enable the company to detect and mitigate potential human and labor rights risks. Addressing and closing identified gaps in this framework will be a priority for the coming years.

Clariant carried out a human rights due diligence assessment with the support of external human rights experts a few years ago. It evaluated not only potential human rights impacts of its operations and activities, but also the effectiveness of its management and monitoring systems.

Additionally, in a series of interactive working sessions, several key functions and departments prioritized their activities as to their scale and relevance to the business and their probability of having adverse effects on the human and labor rights of workers, communities, and other groups. Subsequently, Clariant carried out a rights assessment for several priority activities, including both internal and external risk factors, such as complex subcontracting arrangements and vulnerabilities of specific groups. A particularly thorough investigation took place for those areas identified as high-risk.

The assessment aggregated human and labor rights risk levels of countries and industries. It found that the company's potential impacts primarily relate to contract labor and supply chains for natural raw materials, particularly in regions with weak legal frameworks. For high-risk areas, it validated specific mitigation actions.

Human and labor rights in the supply chain

Clariant will continue to address supply chain risks connected to the geographic origin of particular raw materials. In 2020, Clariant reviewed its conflict minerals approach to ensure compliance with the new EU conflict minerals legislation.

Based on its 2021 Palm Oil Policy, Clariant started a comprehensive analysis of environmental and social sustainability regarding → palm-based raw materials. To facilitate the transformation in palm oil procurement, Clariant intensified its collaboration with suppliers to increase transparency in the palm oil value chain.

→ [Read more in the chapter Bio-Based Economy](#)

Contract labor

Clariant focuses on securing the same working conditions for contractors as for employees, and supports the freedom of association. As laid down in the Supplier Code of Ethics, contractors must have the right to strike and to be members of trade unions in accordance with national or local laws and practices. Within the Together for Sustainability (TfS) Initiative, Clariant assesses Human and Labor rights practices of its suppliers via the EcoVadis platform. This evaluation plays an important role in determining the extent to which Clariant appropriately mitigates adverse human and labor rights impacts.

Overall, 4 242 suppliers of Clariant have performed an EcoVadis assessment, including an assessment of their labor and human rights management systems and practices. The risk exposure, i.e., the percentage of suppliers with an overall EcoVadis score below Clariant's expectations, remains below the 10% target. Suppliers that present a high or medium risk score are required to work on Corrective Actions and are reassessed after one or two years, respectively, in line with Clariant's Supplier Sustainability Journey. In 2022, 64 % of reassessed suppliers improved their score.

Regarding the tier 1 suppliers, Clariant knows of no cases in 2022 in which the freedom of association or the right to collective bargaining was jeopardized or breached.

Child, forced, or compulsory labor

Clariant condemns all forms of child labor and respects the rights of children. It expressly acknowledges International Labour Organization (ILO) conventions 138 (Minimum Age Convention) and 182 (Worst Forms of Child Labor Convention) as the minimum standard. Human Resources ensures that minimum age provisions of national labor laws and regulations are adhered to and that local Human Resources at Clariant workplaces use adequate and verifiable mechanisms for age verification.

Clariant assesses its suppliers in relation to child and forced labor via the EcoVadis platform. The company is not aware of any cases of child, forced, or slave labor in the company or with its suppliers.

Employee training and involvement

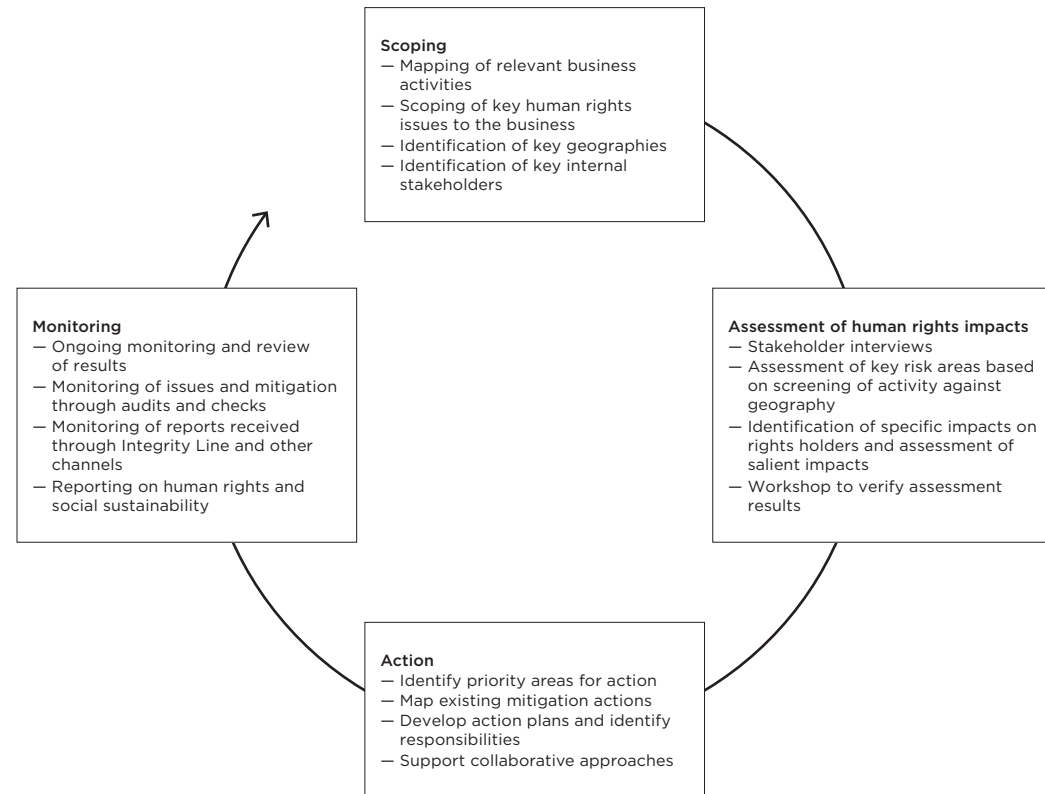
E-learning modules and internal trainings related to the Code of Ethics and to human and labor rights are mandatory for all employees. Participation in these trainings is registered with defaulters receiving a warning.

The company has established the »Clariant Integrity Line,« an independent, third-party operated channel. Clariant employees and external stakeholders can anonymously report all violations of the Code of Ethics, including discrimination and violations of human and labor rights. → [Read more in the chapter Business Ethics and Compliance](#)

Human and labor rights clauses in investment agreements and contracts

Investments are subject to Clariant's internal capital appropriation request process, and approvals are granted according to the Management Bylaws. Significant investments are subject to the approval of the Executive Steering Committee or its respective subcommittees and take into consideration financial, strategic, and sustainability criteria, which also include human and labor rights aspects.

017 KEY ELEMENTS OF THE HUMAN RIGHTS DUE DILIGENCE PROCESS



Planet

»Achieving our goals is core to our journey. Helping our customers reach theirs is just as important. Like that we can together drive the global shift toward a sustainable world.«

Richard Haldimann, Chief Technology & Sustainability Officer

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66	Climate Protection
75	Circular Economy
79	Bio-Based Economy

2022

0.64

m t
GHG emissions
(Scope 1 & 2)
CO₂ equivalents¹

3.47

m t
Indirect GHG
emissions (Scope 3)
CO₂ equivalents

2 593

m kWh
Total energy
consumption

Science-based
climate targets

Scope 1 & 2 absolute green-
house gas emissions: -40%

Scope 3 absolute
greenhouse gas
emissions:
-14%

Science-based
climate targets

Wastewater:
-25%

Water intake:
-20%

Sites in areas of
high water stress
with advanced
water manage-
ment: 100%

Landfilled
nonhazardous
waste: -40%

Hazardous waste:
-25%

Nitrogen oxide (NO_x)
emissions: -30%

Our
Sustainability
Targets
by 2030

¹ This includes 0.02 m t of biogenic CO₂ emissions



RESOURCE EFFICIENCY AND ENVIRONMENTAL PROTECTION

Sustainability is a core element of Clariant's purpose »Greater chemistry – between people and planet,« reflecting the company's commitment to environmental sustainability and ethical practice. Interest of investors, customers, and other stakeholders in sustainability topics has been on the rise for years and is growing further. The company follows a responsible approach to resources and the environment. It increasingly employs environmental management systems for responsible energy and water consumption, waste reduction, and the prevention of pollution, toxic and other emissions to air and soil, and further ecosystem impacts. Resource efficiency and environmental protection is also reflected in the 1+5 sustainability focus areas, particularly in »zero waste and pollution,« »fighting climate change,« and »increasing circularity.« Read more in the → **Growth Opportunities from Sustainable Products and Solutions** chapter. The corresponding technological and behavioral changes affect Clariant's complete value chain, from the raw material feedstock to the end-consumer markets.

The reduction of energy consumption and GHG emissions is a main focus in Clariant's Sustainability Transformation in the field of »fighting climate change.« Examples of this responsible approach to resources and the environment include the significant reduction of fossil fuels such as coal and oil in the Functional Minerals Business (as of January 2023: Adsorbents) through sun drying/natural drying programs at various locations in Europe and Asia. Following the success of exothermal reactions for heat integration in the production site at Gendorf, Germany, the installation of new larger heat exchangers has resulted in the purchase of less steam and a reduction of associated GHG emissions. → **Read more in our section focusing on GHG emissions**

Management approach

To minimize negative effects on the environment and to safeguard natural resources, Clariant relies on top management's attention and a corporate culture that prioritizes environmental stewardship.

PLANET OVERVIEW ¹

	Continuing operations	Discontinued operations	Total 2022	2021 ²
Total greenhouse gas emissions (Scope 1 & 2, CO ₂ equivalents) (in m t)	0.64	n.a.	0.64 ⁴	0.82 ⁵
Total indirect greenhouse gas emissions for purchased goods and services (Scope 3, CO ₂ equivalents) (in m t) ⁶	2.58	n.a.	2.58	3.19
Water intake (without »pass-through« water) (in m ³ /t production)	2.24	n.a.	2.24	2.17
Wastewater generation (in m ³ /t production)	1.62	n.a.	1.62	1.48
Sites in areas of high water stress with advanced water management (%)	75	n.a.	75	56
Landfilled nonhazardous waste (in kg/t production)	45.1	n.a.	45.1	51.5
Hazardous waste (in kg/t production)	11.3	n.a.	11.3	8.8
Nitrogen oxide (NO _x) emissions (in kg/t production)	0.12	n.a.	0.12	0.12
Energy consumption (in kWh/t production)	680	n.a.	680	733
Greenhouse gas emissions (Scope 1 & 2, CO ₂ equivalents) (in kg/t production)	168	n.a.	168	185
Indirect greenhouse gas emissions (Scope 3, CO ₂ equivalents) (in kg CO ₂ e/ CHF sales) ⁶	0.67	n.a.	0.67	0.82
Total water intake (without »pass-through« water) (in m m ³)	9.5	n.a.	9.5	15.4 ³
Total wastewater generation (in m m ³)	7.4	n.a.	7.4	11.2
Total quantity of waste (in thousand t)	270.4	n.a.	270.4	225.8
Total energy consumption (in m kWh)	2 592.5	n.a.	2 592.5	3 244.0

¹ Clariant follows the »control approach« in the consolidation of the data

² Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

³ 2021 data is reported with a new definition of water intake without »pass-through« cooling water. Therefore, it is not comparable to previous years.

⁴ This includes 0.02 m t of biogenic CO₂ emissions

⁵ This includes discontinued operations

⁶ Other green house gases (GHG) like CH₄, N₂O, HFCs are not relevant and therefore not included.

In 2022, Clariant incorporated its Environment, Safety, and Health Affairs (ESHA) department into the Service Unit Group Innovation & Sustainability from the Service Unit Group Operational Excellence, to align the organizational structure with the core importance of ESHA in realizing the sustainability transformation of the company. Specialized ESHA teams set the standards for environmental protection and resources. They ensure via audits that the executing business units and country organizations who have full operational responsibility adhere to them. There are quarterly coordination meetings between corporate, regional, and business unit ESHA teams. By 2022, all sites had achieved an external certification and operated along the ISO 14001 standard.

Clariant regularly monitors progress toward its sustainability targets. In 2021, the company developed a new internal dashboard, the »Sustainable Operations Cockpit« (SOC). The SOC shows the actual GHG emissions of every production site by energy category, enabling a monthly tracking of Scope 1 & 2 emissions by site, region, and business unit. This allows for a timely analysis of the impact of GHG emission reduction projects, the impact of production increases, and other production changes as well as to take corrective actions in case of target deviation. Such a detailed tracking has proven to be invaluable to get the organizational buy-in for bonus-relevant targets and to refine the medium-term CAPEX plans for emission reductions. In addition, the Clariant Project Tracking Tool (CPTT) tracks the implementation of individual improvement projects related to environmental performance and the related improvements themselves.

Scope 3 target achievement is monitored monthly by a Scope 3 dashboard. Quarterly progress for Scope 1, 2 and 3 emissions are discussed in the Global Innovation and Sustainability Council and in the Executive Leadership Team Meeting, and then presented to the Board of Directors.

Sustainability targets

In 2021, Clariant published sustainability targets under the lead of the Key Function Sustainability Transformation. In line with the Science-Based Targets initiative (SBTi), the company's → **Science-Based Targets** demand ambitious absolute reductions by 2030, compared to 2019:

- Scope 1 & 2 greenhouse gas emissions – 40 %
- Scope 3 greenhouse gas emissions from purchased goods and services – 14 %

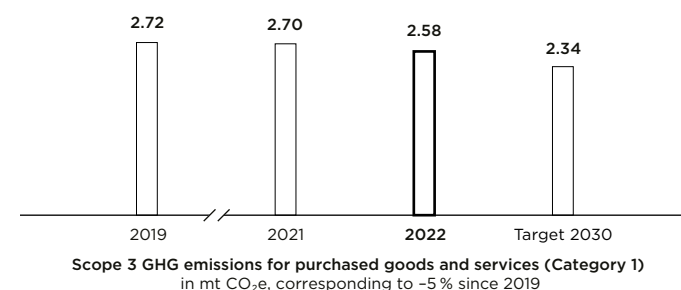
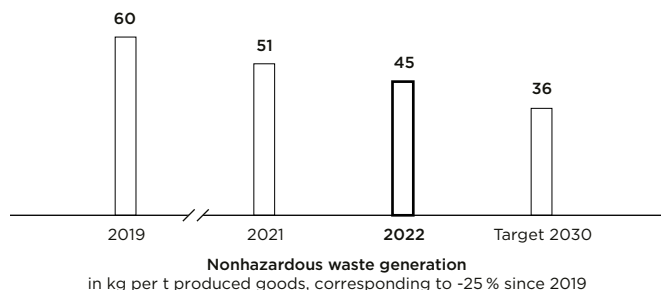
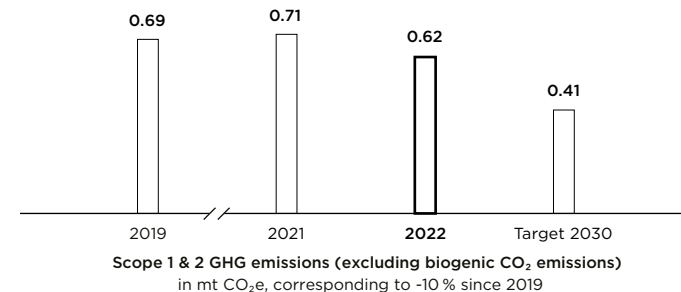
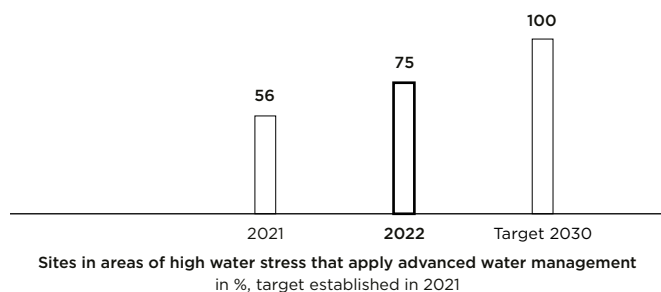
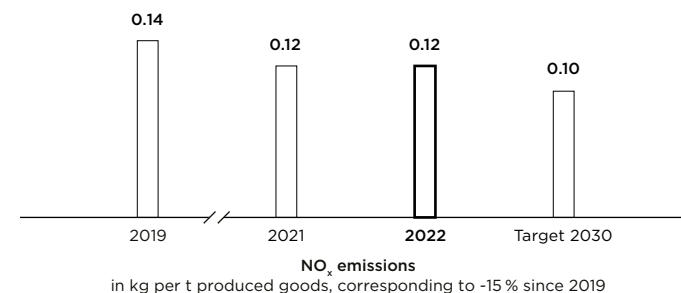
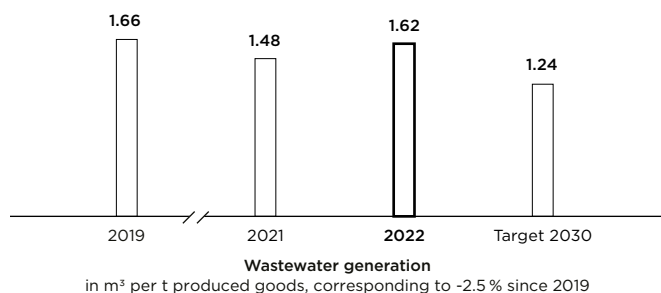
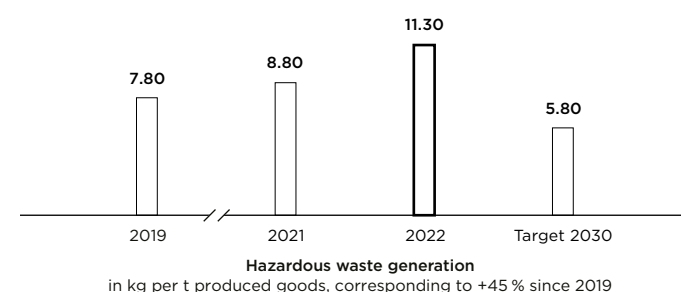
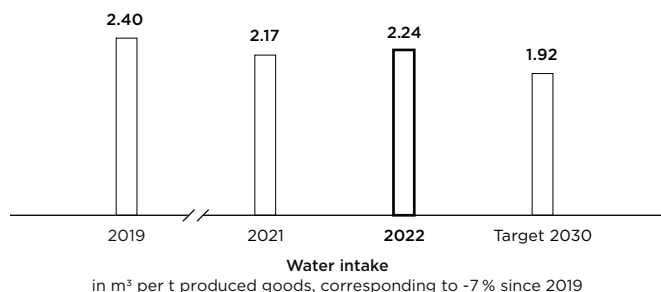
Furthermore, Clariant has set itself more sustainable operations targets for the period 2019–2030, measured by impact per ton of production:

- Water intake (without »pass-through« cooling water) – 20 %
- Wastewater generation – 25 %
- Share of sites in areas of high water stress that apply advanced water management 100 %
- Landfilled nonhazardous waste – 40 %
- Hazardous waste – 25 %
- Nitrogen oxide emissions – 30 %

All business units have developed a roadmap toward these 2030 sustainability goals. In this context, they defined improvement projects, planned their implementation, calculated medium-term investments and specific intermediate reduction targets for 2025.

018 PROGRESS TOWARD 2030 TARGETS

All diagrams refer to the production activities of continuing business only (=without Pigments).



Overall, guided by its ambitious targets, Clariant's environmental performance has improved significantly over the last 15 years. The investments related to environment, safety, and health amounted to CHF 36.6 million in 2022, including CHF 15.9 million for environmental protection. The expenditures for environment, safety, and health protection in operative facilities amounted to over CHF 110 million, including CHF 62 million for environmental protection.

Since 2019, CO₂ emissions (Scope 1 & 2) have decreased by 10%. Year-on-year, Scope 1 & 2 emissions fell by 0.09 million t CO₂ in 2022. Various initiatives enabled the strong 13% decrease. Scope 1 emissions were reduced by 0.035 million t CO₂ by replacing coal and diesel with solar/natural drying at various sites, replacing coal with biomass for steam generation at Bonthapally in India, and small-scale energy efficiency measures. Scope 2 emissions were reduced by 0.055 million tons of CO₂. Long-term power purchase agreements (PPAs) in Indonesia and the US contributed significantly to reducing GHG emissions, as did renewable electricity certificates (RECs) and solar panels installed at various sites. In addition, the switch from fossil fuels to renewable fuels and low-carbon fuels for steam generation by local steam suppliers had an impact on reductions. Finally, an investment in heat integration to recover energy from a highly exothermic reaction enabled the purchase of less steam from a third-party supplier.

AWARD

Clariant wins prestigious ACC Sustainability Leadership Award for success of its global climate campaign

For the second year in a row, the American Chemistry Council (ACC) acknowledged Clariant's efforts to reduce environmental impact by rewarding the company with the ACC Sustainability Leadership Award in the category »Environmental Protection.«

With a free load of its innovative nitrous oxide removal catalyst EnviCat®, Clariant helps ten nitric acid producers worldwide to cut more than 4 million tons of CO₂ equivalents annually. This corresponds to 95% of their annual harmful nitrous oxide (N₂O) emissions. Translated into a more palpable number, this corresponds to the emissions of more than 860 000 gasoline passenger vehicles driven for one year. N₂O molecules remain in the atmosphere for an average of 114 years, which is 25 times longer than carbon molecules.

The Sustainability Leadership Award recognizes outstanding initiatives led by chemical industry visionaries advancing sustainability. The external panel of experts judged that Clariant is dedicated to developing innovative products that can considerably reduce its customers' environmental footprint. They applauded Clariant because of the impact the company's products make on helping create a better, more sustainable world.

Watch the video → EnviCat® N₂O

Other goals and targets

Clariant abides by the principles of the Responsible Care® Global Charter, which was initiated by the members of the International Council of Chemical Associations (ICCA). It creates a global vision and highlights the commitment of the industry to continuous improvement in the environmental, health, and safety performance of chemical producers worldwide.

Furthermore, Clariant adheres to its own goals and targets set in its Sustainability Policy, Code of Ethics, Internal ESHA Management System, ESHA Guidelines and Guides, internal audits, and Management Bylaws of the Executive Committee. They contain principles for environmental protection and prioritize measures that avoid or minimize negative environmental impacts. In 2020, the company finalized its internal quality audits, which are a central element of the ESHA management system.

Corporate programs of resource efficiency and environmental protection

To reduce energy consumption, minimize greenhouse gas emissions, and reduce waste streams, Clariant has set up long-running lead initiatives within the business units, such as eWATCH™ and the Clariant Production System Yield, Energy, Environment (YEE) initiative. Under the leadership of the program »Sustainable Operations,« a »core team for Sustainable Operations« consisting of members from Group Operational Excellence (GOE), Group Innovation & Sustainability (GIS), and business units has been established. The team meets biweekly and tracks progress toward annual targets and 2030 targets. There is an exchange regarding best practices, new regulatory developments, new policies and guidelines, and new technologies. As a result, further improvement projects have been identified and are currently being implemented.

eWATCH™

Since 2013, the program → eWATCH™ has helped to minimize energy consumption and increase energy efficiency. It is a process to analyze energy consumption across operations and to identify cost-saving opportunities. Using eWATCH™, Group Operational Excellence (GOE) systematically assesses site maturity and proposes improvement measures along three dimensions: operating system, management system, and employee system. GOE also supports business units in providing investment roadmaps and evaluating technical savings potential to ensure the company achieves its new 2030 targets.

The Clariant Energy Intelligence Guide (CEIG), a component of the eWATCH™ employee system, supports careful management of the company's energy demand. CEIG combines information, advice, best practices, and successful optimization projects, as well as key figures and tools that support energy efficiency. It enables users to systematically improve the energy efficiency of the equipment in use.

With its global initiative »eWATCH™ goes digital,« Clariant aims to profit from the latest measurement and monitoring technologies. They ensure full visibility and high granularity of energy generation and consumption. Analyses in this context show a savings potential of up to 10% for energy and utilities as well as opportunities for lower costs and greenhouse gas emissions.

Through the Clariant Project Tracking Tool, Clariant measures the outcome of eWATCH™ by cost savings and project tracking (122 projects in 2022). Through the Sustainable Operations Cockpit, Clariant measures the outcome of eWATCH™ by energy consumption and CO₂ impact. Since 2013, Clariant has saved a total of CHF 35.9 million through eWATCH™ by implementing energy efficiency measures and energy-purchasing optimizations. In 2022 alone, the savings amounted to CHF 6 million.

Clariant Production System Yield, Energy, Environment (YEE) initiative

The Clariant Production System (CPS) is an important component of the Clariant Operational Excellence program. Its goal is to achieve the highest productivity and financial performance at the production sites by identifying, developing, and implementing good practices. Applying the CPS leads to improvements in safety, productivity, conversion costs, energy consumption, and product quality.

The Clariant Production System Yield, Energy, Environment (YEE) initiative is a holistic approach built on an organizational blueprint. The YEE team consists of four people, one of whom was contracted in 2022 to focus on energy. The team conducts Maturity Value Assessments, which analyze yield, energy, and the environment of a specific unit with the aim of finding the overall maximum performance. For example, it defines the way to increase yields, improve energy efficiency, and reduce waste streams by analyzing production processes and production units. Jointly with IGSM and ESHA, CPS assesses the site maturity against the blueprint through Operations Assessment audits to create a comprehensive picture of energy optimization potential.

Since its inception in 2012, YEE has saved more than CHF 60.5 million. In 2022 alone, YEE allowed for cost savings of CHF 6.2 million.

Energy

Clariant is continuously optimizing its energy consumption with dedicated energy efficiency programs, including capital expenditures into new energy efficient technologies. Although energy consumption depends on several variables, such as production levels, product mix, and production technologies, Clariant monitors absolute and relative energy consumption as one means to assess the effectiveness of its energy savings measures. The energy efficiency measures, combined with the switch to renewable energy, reduce Clariant's financial risks deriving from carbon pricing. Additionally, the sustainable products provided by the company help customers to save energy in their own production processes.

Clariant established the first Power Purchase Agreement (PPA) together with the site service provider Celanese at a site in Clear Lake (US), covering 20% of the annual electricity demand.

For five sites in Indonesia – Cileungsi, Cimapag, Medan, Cikampek, and Tangerang – Clariant concluded a ten-year contract for green electricity supply (PPA) generated from geothermal heat.

Other sites like Baroda and Bonthapally, India; Heufeld, Germany; and Jiangsu and Jiaying, China, partially use directly or indirectly self-generated renewable electricity.

For various sites, Clariant has been purchasing certificates for 100% green electricity:

- Since 2019: Knapsack, Germany; Jacarei and Vitoria da Conquista, Brazil
- Since 2020: Aberdeen, UK; Novara, Italy; and Oberhausen, Germany
- Since 2021: Bakersfield, Midland, and Reserve, USA; and Suzano, Brazil

- Since 2022: Callao, Peru; Hoechst, Germany; Maipu, Chile; Louisville, USA; Jacarei and Ananindeua, Brazil; Santa Giusta and S'Aliderru, Italy

Furthermore, Clariant has certified some sites according to the new ISO 50001 standard for energy conservation. It passed the surveillance audits globally and prepared for the updated standard at sites, primarily in Germany and Spain. By the end of 2021, around 25% of production sites (including discontinued business units) were certified, and Clariant produced more than 35% of its production volume at sites certified with ISO 50001.

Energy consumption

Across the Group, Clariant records total energy consumption from energy sources. While the total energy consumption decreased by 2% since 2019, the energy consumption per ton of produced goods has increased by 4% due to product mix and lower production volume.

The company consumes energy in the form of process heat, steam, cooling, and electricity. With respect to process heat and steam, it uses direct primary energy sources to generate them or has them supplied by site service providers. Its main primary energy source is natural gas, while it uses coal only in very few locations. Clariant requires steam to heat reactors and separators, such as distillation columns. Wherever possible, it applies the remaining heat of the resulting condensate either for steam generation again or for internal heating purposes. The company also needs energy for drying as a part of its mineral processing. Clariant reduced its use of fossil fuels significantly through the sun-drying of betonite.

Electricity is necessary for electric motor drives in mixers, pumps, and other process-engineering equipment; for measurement and control technology; as well as for lighting. Clariant endeavors to increase its share of electricity obtained from renewable sources on an ongoing basis. In 2022, it was at 47%, considering all measured energy sources.

ENERGY CONSUMPTION

	Continuing operations	Discontinued operations	Total 2022	2021 ¹	2020	2019 ¹	2018
Total energy consumption within the organization (in m kWh)	2 593	n.a.	2 593	3 244	3 071 ²	3 204	3 209
Relative energy consumption (in kWh/t production)	680	n.a.	680	733	758	754	739
Total fuel consumption within the organization (in m kWh)	1 587	n.a.	1 587	1 859	1 653	1 795	1 781
Oil	8	n.a.	8	70	49	60	83
Natural gas	1 211	n.a.	1 211	1 285	1 154	1 248	1 254
Diesel	83	n.a.	83	128	95	113	54
Energy crops (bagasse/briquettes)	34	n.a.	34	97	65	125	121
Other (e.g., coal, woodchips, waste)	251	n.a.	251	279	289	235	269
Total electricity consumption (in m kWh)	518	n.a.	518	610	626	704	768
Total steam consumption from outside the organization (in m kWh)	488	n.a.	488	759	685	685	660

¹ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

² First half-year 2020 data for Business Unit Masterbatches are estimated based on the last full reporting campaign in 2017.

Reductions in energy requirements of products and services

Clariant evaluates the energy consumption of products through its Portfolio Value Program (PVP), which looks at energy consumption from raw materials to the use phase. The company aims to help its customers reduce their energy consumption. For this purpose, Clariant reworked its assessment criteria in 2021. A reviewed version of all criteria has been implemented in 2022. Full information on PVP is described in another chapter: → [Read more in Growth Opportunities from Sustainable Products and Solutions](#).

Water

Water management is a key topic for the chemical industry, as it uses water as a product ingredient and in numerous production processes that result in the release of wastewater effluents. Efficient water management protects resources and saves costs in wastewater treatment.

The importance of water management differs according to local conditions. Clariant therefore sets water intake targets on the local level, while it monitors regulatory developments on a regional and national level. The company has implemented strict environmental regulations to ensure that its activities have no measurable impact on the surrounding flora and fauna.

Clariant's plants and office buildings are located almost exclusively in industrial parks or appropriate commercial districts with the required infrastructure. This includes a sufficient and stable water supply primarily from river water supplied via third parties, especially at large production sites. Before discharging the river water into the site's piping system, it passes through various filter systems.

Clariant also systematically tracks water-related business impacts in annual surveys to regional ESHA teams and, where necessary, engages with relevant stakeholders within the organization to deal with specific water-related impacts. Site, regional, business unit, and corporate ESHA teams assess if water-related impacts are taken care of and if sites are prepared for future emergencies, such as storms that can result in the suspension of operations.

Water withdrawal and intake

Clariant records the entire volume of water withdrawn and taken in. Since 2021, the company revised its definition of the Water Consumption indicator and renamed it as »water intake« to exclude pass-through cooling water (sustainability 2030 target KPI). In 2022, of the 9.5 million m³ total water quantity that the company took in, it used about 13.2% for cooling production plants, 70.4% for production processes, and 16.4% as a product component (sold with the product to customers) or for steam/ice generation, irrigation, or sanitary purposes. Water intake per ton

WATER WITHDRAWAL AND INTAKE

	Continuing operations	Discontinued operations	Total 2022	2021 ¹	2020	2019 ¹	2018
Total volume of water withdrawn (in m m³)	23.7	n.a.	23.7	42.5	40.8 ²	44.0 ²	49.0 ²
Surface water	6.2	n.a.	6.2	6.8	6.3	7.5	8.0
Groundwater	4.3	n.a.	4.3	5.2	5.2	5.7	8.9
Seawater	0	n.a.	0	0.1	0.2	0.1	0.1
Third-party water	13.2	n.a.	13.2	30.4	29.0	30.9	31.9
Total water intake consumption (in m m³)	9.5	n.a.	9.5	15.4 ³	41.0	44.3	49.0

¹ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

² The sum of water withdrawal sources does not equal the total water withdrawn due to the exclusion of an insignificant amount of rainwater as a withdrawal source.

³ 2021 data is reported with a new definition of water intake without pass-through cooling water. Therefore, it is not comparable to previous years.

of produced goods – one of the target KPIs – increased from 2.17 m³ per ton in 2021 to 2.24 m³ in 2022 due to significant volume effects and product mix.

For the majority of its operations, Clariant uses fresh water with a total dissolved solids (TDS) concentration of less than 1 000 mg/l. At only one site in Brazil, the company withdraws seawater and treats it before use, because there is no access to fresh water. The exact quality of the consumed water differs with each business and purpose and with the quality needed for the specific product portfolio and production process.

Wastewater management

Clariant leads the water it has used in its various production processes into its comprehensive wastewater management. The company makes sure it follows local regulations regarding discharge limits at all production sites. It treats the priority substances of concern, as identified in the wastewater discharge permit, based on the type of industrial operation, not generalized at the Group level.

For assessing wastewater quality, it consolidates water quality indicators at the Group level, such as concentration of heavy metals, nitrogen and phosphorus compounds, soluble salts, total suspended solids (TSS) as well as biological (BOD) and chemical oxygen demands (COD), which are the indicators of organic content in wastewater. COD discharged in the wastewater decreased significantly from 2 046 t in 2021 to 709 t in 2022 due to lower produced quantities and discontinued businesses.

Before transferring the effluents to third-party or municipal wastewater treatment plants, Clariant often pretreats wastewater at its own sites in a multistage chemical and physical procedure. Only small amounts of heavy metals remain in the discharged effluent, with concentrations partly at or below detection limits. In combination with constant monitoring, this approach ensures that discharged wastewater does not impair receiving water bodies and ecosystems.

WATER DISCHARGE

	Continuing operations	Discontinued operations	Total 2022	2021 ¹	2020	2019	2018
Total volume of planned and unplanned water discharge to all areas (in m m³)	7.4	n.a.	7.4	11.2	11.4	11.9	12.6
Surface water	3.5	n.a.	3.5	7.5	7.7	7.9	8.2
Groundwater	0	n.a.	0	n.a.	n.a.	n.a.	n.a.
Seawater	0.2	n.a.	0.2	0.5	0.4	0.5	0.5
Third-party water treatment	3.7	n.a.	3.7	3.1	3.2	3.5	3.6

¹ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

In 2022, wastewater generation per ton of production increased from to 1.48 m³ per ton to 1.62 m³ due to significant volume effects and product mix.

In 2022, Clariant was imposed six nonmonetary penalties for noncompliance with water discharge limits.

Water risk management

In 2017, Clariant undertook a Group-wide water risk assessment, employing the Aqueduct Water Risk Map developed by the World Resources Institute (WRI). The tool locates the sites in water stress areas and calculates an overall water-risk score as a combination of quantity, quality, and regulatory and reputational risks. Clariant shortlists all sites that fall under the risk category of medium at a minimum. Regional water risk assessments refine the global outcome further with specific knowledge of the sites' geography, water use, operations, revenue, and expenditure. Using this two-step risk assessment, Clariant then shortlists sites located in areas of high water risk and updates these water risk assessments every year.

The risk assessments revealed that in 2022 a fraction of Clariant production sites (<20%) were situated in areas under water risk and that around 30 % of the total water intake was from sites identified to be under water risk/stress. Also, around 30 % of the total water discharge was to such sites. For these sites, the site management, together with the regional ESHA teams, has performed in-depth assessments since 2019 to conceptualize and execute water risk management at the site level. The aim is to manage risks responsibly, as the sustainability target KPIs for 2030 include a 100 % achievement of advanced water management at sites in areas of high water stress or risk. To ensure continuous operations in such areas, reducing water intake and increasing water reuse are essential.

At the Catalyst production site Cikampek in Indonesia, a detailed site-level water risk assessment was carried out in 2022 by the site operations, together with the country ESHA management. This detailed site-level assessment identified management measures for addressing long-term water risks.

Waste management

Waste management is critical for Clariant: It relates to the company's sustainability commitment and has a direct link to disposal costs. Clariant's waste management performance has improved continuously over recent years thanks to global programs and ongoing efforts at individual sites. During the development and manufacture of products, the company makes every effort to generate as little waste as possible. As part of the circular economy platform and according to its ESHA guideline on waste management, Clariant also tests options to use waste as a raw material, and always prioritizes waste avoidance, recycling, and reuse over disposal.

At the site level, the company minimizes waste generation through high-quality standards and comprehensive planning: Through the Yield, Energy, Environment (YEE) initiative, Clariant improves its yield and reduces its waste. It maintains waste cadasters at each production site and monitors the waste-related data in detail to enable proper classification and handling. Indicators include the weight of hazardous and nonhazardous waste by disposal method, the properties of waste components, and the number and volume of significant spills. Internal records document proper disposal according to local regulations.

Most of Clariant's waste generated is sent to third parties for treatment, recycling, or disposal by contractors approved by local regulators, who comply fully with requirements of transport and waste legislation. Clariant arranges transportation according to the plant the waste originates from, the amounts that accrued during the period, the properties of the waste components, and how the hazardous waste can be recycled or disposed of.

In 2022, Clariant's total waste generation decreased by 4.7%, falling from 74.4 kg to 70.9 per ton of production. The total waste generated decreased by 13% mainly due to production volumes impact as well as measures implemented to reduce non-hazardous waste. The increase in hazardous waste generated is due to waste reduction projects at different sites. In addition, nonhazardous waste decrease did not increase in proportion to the increase in production because more intermediates were sold in

WASTE BY TYPE AND DISPOSAL METHOD

in thousand t	Continuing operations	Discontinued operations	Total 2022	2021	2020	2019 ⁴	2018
Total weight of hazardous waste, with a breakdown by the following disposal methods where applicable:¹	43	n.a.	43	59	63	61	55
Recycling ²	10	n.a.	10	13	17	16	23
Landfill ²	2	n.a.	2	14	11	14	8
Treatment ²	31	n.a.	31	33	35	31	37
Total weight of nonhazardous waste, with a breakdown by the following disposal methods where applicable:¹	227	n.a.	227	270	259	277	177
Recycling ²	14	n.a.	14	30	31	21	20
Landfill ²	189	n.a.	189	226	221	248	148
Treatment ²	24	n.a.	24	14	7	8	10
Total waste (hazardous and nonhazardous)¹	270	n.a.	270	329³	328	337⁵	232
Total waste (hazardous and nonhazardous) (kg/t production)¹	71	n.a.	71	74	81	79⁵	53

¹ Waste generated from Clariant activities

² The listed waste-handling channels also contain waste from other producers on-site but managed by Clariant. This additional third-party waste is not reflected in the total waste figures.

³ The sum does not add up as the numbers are rounded.

⁴ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95% of production.

⁵ All figures are rounded, resulting in discrepancies between the total waste generated and the breakdown figures.

2022 at Business Unit Functional Minerals sites. The total waste generated from production sites is not always directly dependent on the production volume, as the product portfolio changes influence the waste generated significantly. Most of Clariant's nonhazardous waste generated is from the neutralization of acidic wastewater in the Business Unit Functional Minerals.

Pollution prevention

Clariant is committed to operating sustainably and decreasing pollution that results from its business activities. Decreasing pollution is not only a social mandate, but also required by legislation in many countries around the world. By preventing pollution, Clariant decreases risks to human health and the environment. Consequently, this also reduces the risk of potential liabilities and negative impacts on the brand.

Safety management system

Guaranteeing the safety of people and the environment is Clariant's highest priority. An effective safety management system to identify, assess, and control risks in the production process is indispensable. In close cooperation with the European Process Safety Center (EPSC), Clariant has helped to develop a simple and representative measurement system with the aim of establishing an industry-wide standard.

The system records and systematically assesses smaller substance and energy releases to avoid major incidents. It categorizes them as process safety events (PSE) according to criteria stipulated by the International Council of Chemical Associations (ICCA) as part of the ongoing improvement of the process safety of production systems. In addition, PSE are investigated at the site level with Root Cause Analysis (RCA) techniques, and the measures are followed-up. If the PSE is considered significant (Score ≥ 3 points), the measures are followed-up at the corporate level.



SAFETY MANAGEMENT

	Total 2022	2021	2020	2019	2018
Process safety event rate ¹	0.36	0.46	0.36	0.48	0.46
Number of significant spills	9	6	17	2	4
Total volume of significant spills (m³) ²	12.88	13.24	78.69	1.30	6.70

¹ Process Safety Event rate = Number of Process Safety Events * 100 / FTEs

² All spills were contained on-site without any releases to the environment. Due to the new definition of significant process safety events (PSEs) and spills based on the ICCA criteria, all PSEs with a score of ≥3 points are considered significant. With this new definition, the numbers reported this year are not comparable with previous years and the difference is higher.

In 2022, Clariant’s rate for Process Safety Events decreased significantly from 0.46 to 0.36. In total there were 43 cases, a decrease of 35% compared to the 66 cases of 2021. Of the 43 cases, 80% (34) had a low impact and, therefore, were in the lowest category. Significant process safety events for Clariant are those with a score of ≥ 3 points according to ICCA criteria. In 2022, Clariant had 9 cases considered significant, compared to 6 cases in 2021. However, the Process Safety Severity Rate is maintained in 0.63. After a process safety event, Clariant conducts an investigation to determine its root cause (using, e.g., fishbone or fault tree analysis) and establish corrective measures to avoid recurrence. The results and the measures are tracked at the site level and at the corporate level with the Corporate Reporting Tool (EBR@ILX) to ensure an effective implementation.

Personal and organizational causes represented 54% of the total PSE, whereas technical causes made up 44%. In 2022, the effective implementation of Management of Change and the first Process Safety Academy positively supported the reduction of PSE. For 2023, a new edition of Process Safety Academy will be conducted in APAC, and refresher trainings on the Safe Behavior program will be delivered.

For 2022, the number of significant spills increased from six to nine with a total volume of 12.88 m³. Spills of liquids handled in Clariant’s production plants are process safety events that fall under the ICCA criteria. They can be of a diverse nature, but in 2021, all of them were contained on-site in paved areas and were adequately retained and treated according to local waste regulations. Nobody was hurt as a result of the spills.

Protection of ecosystems

Ecosystems provide a variety of critical resources and services such as clean water, energy, recreational areas, and protection from flooding. Clariant aims to monitor and remedy all impacts in order to maintain invaluable ecosystems.

Operational sites in protected areas

Since all of Clariant’s sites are located in industrial parks or areas designated as industrial zones by local municipalities, they usually do not affect vulnerable ecosystems. However, the company tracks the number of chemical production sites in biological reserves or in areas with a high biodiversity value. In 2022, there were none.

Significant impacts of activities, products, and services on biodiversity

If there are protected areas near Clariant’s sites, the company makes sure to follow local regulatory guidelines to prevent pollution in the protected areas. Where possible, it extends its monitoring along the value chain, for example, by evaluating products with its → **Portfolio Value Program (PVP)**, based on which all critical raw materials are specifically reviewed.

If there are unprotected areas, like forests, in the immediate vicinity, Clariant ensures that its production sites do not have any appreciable adverse effect on the surrounding flora and fauna by following all local rules and regulations.

Palm oil

Clariant is aware of the potential impact of palm oil and its cultivation on biodiversity. Therefore, the company is a member of the Roundtable on Sustainable Palm Oil (RSPO) and aims to prevent ecological degradation caused by the clearing of land for palm oil plantations. It emphasizes this palm oil policy in its first new Innovation Arena, which centers on the → **bio-based economy**.

Clariant promotes global palm oil policy

To raise awareness of the potential impact of palm oil and its cultivation on biodiversity, Clariant promoted the Global Palm Oil Policy within the procurement team in webinars, equipping the team to address Clariant’s commitment in their day-to-day discussions with the suppliers.

Bentonite

At bentonite mining locations, Clariant exceeds social and community expectations regarding the conservation of surrounding ecosystems. Clariant’s geologists develop plans to minimize environmental impact associated with drilling. This includes carefully removing the topsoil and overburden to preserve it for land restoration. During mining, Clariant ensures that the resident fauna can easily move to adjacent areas. It sun-dries the bentonite before transportation in order to reduce its weight.

When closing mines, Clariant collaborates with local experts to restore the land for forestry or agriculture. In certain areas (such as southern Bavaria), animals from the Red List of Threatened Species have repopulated after reclaiming. With these efforts, Clariant ensures healthy relationships with local communities and protects ecosystems.

CLIMATE PROTECTION

Climate change has been widely recognized as one of the greatest challenges of our time. Shifting weather, increased risk of flooding, and global warming might seriously impair society at large and, thus, Clariant's business and its markets. Clariant strives to be part of the solution by reducing greenhouse gas emissions and increasing efficiency. The company is fully committed to operating sustainably and decreasing pollution from its business activities.

Decreasing pollution is not only a social mandate, but also part of global legislation. Currently, legislators around the world are implementing measures to mitigate the adverse impacts of climate change. The first binding global step took place at the United Nations (UN) Climate Change Conference near Paris, France, in 2015. Subsequently, 193 states signed the Paris Agreement, which sets out a global framework to limit global warming to below 2 °C and to pursue efforts to limit global warming to 1.5 °C.

The European Union (EU) is implementing its European Green Deal program launched in 2020, with the aim to become climate-neutral by 2050. The EU's »Fit for 55« climate and energy package is a key legislative effort, targeting an overall reduction of greenhouse gas (GHG) emissions by at least 55% by 2030, compared to 1990. Likewise, in 2020, China announced that it would scale up its NDCs by adopting more vigorous policies and measures, strive to peak CO₂ emissions before 2030, and achieve carbon neutrality before 2060. China is taking pragmatic actions toward these goals. Thus, Clariant continuously monitors and controls air emissions across all global sites to ensure regulatory compliance. In mid-August 2022, US President Joe Biden signed the Inflation Reduction Act (the »Act«) into law in what the White House terms the country's »most aggressive« attempt at tackling the climate crisis. The Act aims to reduce carbon emissions by at least 40% by 2030 and transform the US' climate- and environment-related policies, including by expanding clean and renewable energy production.

Customers demand low-carbon alternatives and renewable energy sources to help them meet their net-zero targets, while an increasing number of financial players are requesting investor-grade data for non-financial information. The US Inflation Reduction Act contains unprecedented measures and incentives in support of GHG emission reduction, clean energy, and clean mobility. Climate protection often goes hand in hand with energy savings that reduce costs, strengthen competitiveness, and trigger business opportunities. Pollution prevention also adds value to the company by minimizing the risk of harming human health and the environment, thus reducing potential liabilities and negative impacts on the company's brand image.

Clariant constantly optimizes its own operations with regard to carbon and greenhouse gas emissions and pays attention to climate issues along its entire value chain and the life cycle of its products. It offers numerous sustainable products, ranging from catalysts and low-carbon glucamides to second-generation bioethanol. By actively contributing to a carbon-neutral economy, the company also helps its customers to foster climate protection through innovative products and solutions.

Read more on Clariant's award-winning EARTH technology in the chapter → **Catalysts**

Read more in on our Sustainable leadership award for EnviCat® N₂O-S climate campaign in the chapter → **Resource Efficiency** and the Business Review chapter → **Catalysts**

Management approach

Climate change management is the responsibility of Group Innovation & Sustainability (GIS). Within GIS, the Sustainability Transformation team and the Corporate Environmental, Safety, and Health Affairs (ESHA) team manage the topic. GIS works closely together with the business units and with other departments such as Group Procurement Services to reduce Clariant's operations and supply chain impacts and to deliver low-carbon solutions. Climate is among the topics regularly reported to the Innovation & Sustainability Council and to the Innovation & Sustainability Committee. Success in achieving climate targets is also linked to incentives in the Management Bonus Plan. Read more on our bonus plan → [here](#) and → [here](#)

Group Operational Excellence (GOE) is responsible for ensuring that climate and environmental data is being managed in response to increasing demands from the investor community. → [Read more on TCFD](#)

Climate policies

Clariant prepares for a net-zero roadmap. It pursues ambitious environmental goals and uses its own standards and guidelines for sustainable operations. In 2021, the company introduced science-based climate targets approved by the Science-Based Targets initiative (SBTi). These targets mark a significant step forward in Clariant's sustainability transformation journey. → [Read more in the chapter Resource Efficiency](#)

In 2021, the company also started to implement a roadmap to achieve its defined climate targets by delivering emission reduction projects. It created strategy roadmaps for Scope 1, 2 and 3 emission reductions and defined milestones.

In 2022, the focus was on executing the roadmap. A core team continuously evaluates the pipeline of ideas and drives the emission reduction projects forward. It also analyzes quarterly the achievements in reducing Scope 3 emissions in view of the target.

Clariant coupled the roadmap with additional measures, for example, an internal carbon-pricing system to improve its carbon footprint.

Furthermore, Clariant's efforts at carbon emission reductions are strongly embedded in the company's long- and short-term incentive plans. Since 2022, Scope 1 & 2 emission reduction has been a Key Performance Indicator (KPI) in the long-term incentive plan for the top management population. The short-term incentive plan for the management population includes a target on the reduction of Scope 3 emissions as one of the top priorities. The Scope 3 reduction will be strengthened under the new short-term incentive plans applicable from 2023 by increasing the weighting for this KPI as well as rolling out this KPI to a broader population. From 2024, Scope 1 & 2 reduction targets will be embedded as a KPI in the short-term incentive plan for the majority of employees directly involved in the production processes.

Clariant continuously collects and analyzes data on energy consumption and greenhouse gas emissions in its business units. For example, it runs energy management initiatives like → eWATCH™ and the → Yield, Energy, Environment (YEE) initiative. The company also runs the Portfolio Value Program (PVP), which integrates sustainability into the product portfolio and innovation pipeline. To enable customers to make informed purchasing decisions on products supporting the protection of climate, the PVP identifies solutions with climate-related benefits, with the best-in-class ones receiving the EcoTain® label. → [Read more about Resource Efficiency](#)

Facing planet's challenges with EcoTain®-benchmarked products

EcoTain® is Clariant's sustainability label to highlight products with outstanding sustainability performance. Based on the PVP screening, EcoTain® products significantly exceed sustainability market standards, offer best-in-class performance, and overall contribute to sustainability efforts of Clariant and Clariant customers. → [Read more on the Portfolio Value Program](#)

EMISSIONS

	Continuing operations	Discontinued operations	Total 2022	Continuing operations 2021	2021 ¹	Continuing operations 2020	Total 2020
Total emissions (in m tCO₂e)	0.64	n.a.	0.64	0.71	0.82	0.69	0.83
in kg/t production	168	n.a.	168	164	185	178	205
Gross direct (Scope 1) GHG emissions (in m tCO ₂ e)	0.32	n.a.	0.32	0.37	0.40	0.36	0.39
Biogenic CO ₂ emissions	0.02	n.a.	0.02	n.a.	n.a.	n.a.	n.a.
Direct emissions (Scope 1) in kg/t production	84	n.a.	84	85	90	94	96
Gross market-based energy indirect (Scope 2) GHG emissions (in m tCO ₂ e)	0.30	n.a.	0.30	0.34	0.42	0.31	0.41
Gross location-based energy indirect (Scope 2) GHG emissions (in m tCO ₂ e)	0.21 ²	n.a.	0.21 ²	n.a.	n.a.	n.a.	n.a.
Indirect emissions (Scope 2) in kg/t production	79	n.a.	79	79	95	79	108

¹ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

² The value does not include 0.03 m tCO₂e relating to PPAs.

Reduction of Scope 1, 2, and 3 emissions

Clariant's ambitious climate targets provide for absolute reductions of its Scope 1, 2, and 3 emissions. With 2019 as the base year, the company aims to reduce Scope 1 & 2 emissions by 40 % and Scope 3 emissions from purchased goods and services by 14 % by 2030. Clariant's Scope 3, Category 1, emission target collectively covers more than two-thirds of the total mandatory Scope 3 emissions in conformance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

These targets are approved by the Science-Based Target initiative (SBTi). Clariant's Scope 1, 2, and 3 emissions are calculated following the GHG Protocol standard, the »Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain,« issued by the World Business Council for Sustainable Development (WBCSD), and follows the financial approach. → [See the bar chart with the current status of targets](#)

Scope 1 & 2 emissions

Clariant's direct greenhouse gas emissions (Scope 1) result mostly from combustion processes. They are proportional to the amount of carbon in the combusted fuels. To calculate them, the company uses the standard emission factors of the primary fuels defined by the Greenhouse Gas Protocol.

Clariant's indirect emissions (Scope 2) are due to external energy purchases in the form of electricity and steam. They correlate to the type of production and the quantity produced. Scope 2 emissions are calculated using either specific emissions factors of local suppliers or country grid factors published according to the standards of the Greenhouse Gas Protocol.

NITROGEN OXIDES (NO_x), SULFUR OXIDES (SO_x), AND OTHER SIGNIFICANT AIR EMISSIONS

Significant air emissions in tons, for each of the following:	Continuing operations	Discontinued operations	Total 2022	2021 ¹	2020	2019	2018
Total inorganic emissions	681	n.a.	681	995	915	839	847
NO _x	464	n.a.	464	566	540	613	618
SO _x	179	n.a.	179	323	248	172	180
Hydrogen chloride HCl	10	n.a.	10	35	45	33	33
Ammonia NH ₃	28	n.a.	28	71	82	21	16
Total organic emissions (VOCs)	305	n.a.	305	374	413	543	439
Particle emissions (fine particles) (in t)	311	n.a.	311	3 671	293	201	294
Particle emissions (fine particles) (in g/t production)	82	n.a.	82	834	71	47	68

¹ Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

New tool for tracking energy consumption and greenhouse gas emissions

Clariant created the Sustainable Operations Cockpit (SOC) to enable monthly tracking of energy consumption and greenhouse gas emissions. It also provides for more granular reporting using individual conversion factors at the site and plant level. All conversion factors are centrally managed to ensure data security and accuracy.

The new tool was introduced in two sessions attended by almost 200 employees, mainly from operations. They learned about the dos and don'ts to avoid data entry errors. The easy-to-use tool also enables data analysis and benchmarking as a basis for improvement. The tool was successfully audited.

AWARD

Clariant & Technip Energies' EARTH® technology for energy-efficient H₂ production wins first place – twice

EARTH® technology receives the ICIS Innovation Award 2022 for Best Process Innovation and the Hydrocarbon Processing Award 2022 for Best Refining Technology. The recuperative steam methane reforming technology combines high performance with cost-effective CO₂ reduction for large-scale hydrogen production. EARTH® is a pioneering drop-in solution, which was successfully installed at a world-scale H₂ plant in Europe with an expected capacity increase of up to 20 % at reduced CO₂ emissions and fuel consumption.

For internal and ISO 50001 reporting purposes, Clariant's eWATCH™ team works closely with site energy managers to calculate site-specific conversion factors. They help benchmark the carbon intensity of different energy sources and utilities and the efficiency of individual utility plants. Against this background, the company identifies opportunities for operational improvement toward the theoretical limit. To reduce Scope 1 & 2 emissions, it focuses on efficiency projects, purchases green electricity, and uses alternative, low-carbon fuels. → [Read more in Resource Efficiency](#)

Since 2019, Clariant's direct and indirect emissions decreased by 10 %. The Scope 1 & 2 emissions per ton of product decreased by 5 %. In 2022, Scope 1 & 2 emissions decreased by 13 % year-on-year and the Scope 1 & 2 emissions per ton of product decreased by 1 %. Energy efficiency measures, including heat integration and sun/natural drying, the transition from coal to renewable fuels, and the increase in the share of green electricity contributed to the strong decrease. Long-term power purchase agreements (PPAs) have been established in Indonesia and in the US and contributed significantly to the GHG reduction. In addition, solar panels were installed at various locations. The slowdown in the production volume of the second half-year in 2022 also had an impact on the reduction.

Emissions of ozone-depleting substances (ODS), nitrogen oxides (NO_x), sulfur oxides (SO_x), and significant others

At the Group level, air pollutants tracked include volatile organic compounds (VOCs), sulfur oxides (SO_x), particulates, and nitrogen oxides (NO_x). NO_x emissions from process and combustion sources are included as a KPI for the Clariant's sustainability 2030 targets. The company no longer uses ozone-depleting substances. If relevant, it reports cooling agents under the category »greenhouse gases.«

Scope 3 emissions

Most greenhouse gas emissions at Clariant are »Scope 3« emissions. In the context of the Group climate strategy, Clariant aims to reduce these emissions and has approved science-based targets for purchased goods and services (Category 1): Clariant has committed to reduce Scope 3 (Category 1) emissions from 2019 to 2030 by 14 %. As a baseline, 2019 was chosen, as it was identified as representative pre-pandemic business year that allowed to determine a first full year of Scope 3 emissions. In 2020 and 2021, Clariant analyzed the carbon footprint of purchased raw materials. In 2022, the company focused on priority suppliers, created supplier engagement resources, collected supplier-specific emission factors, and developed reduction plans. Together with other members of the Together for Sustainability (TfS) initiative, Clariant formed a workstream focused on increasing transparency and enabling emission reductions in the value chain. → [Read more about TfS](#)

Through its membership in the Together for Sustainability initiative, it contributed to the development of a chemical industry guideline on product carbon footprints and corporate accounting for Scope 3 emissions. The guideline, announced by Together for Sustainability in September, harmonizes PCF calculation approaches across the industry and is applicable to the vast majority of chemical products. In the future, this will allow consumers and the wider market to directly compare and assess the climate impact of products. Clariant is also part of the World Business Council for Sustainable Development's SOS 1.5 Pathfinder Framework on the methodological guidance for the calculation of avoided emissions. The overall aim is a harmonized and state-of-the-art methodology.

In 2021, Clariant undertook several steps to replace conventional raw materials with low-carbon alternatives. This includes the development of ethylene oxide derivatives from renewable sources in the joint venture with → **India Glycols**

Clariant uses standard emission factors based on data from verified sources, such as LCA databases GaBi (Sphere), Ecoinvent, and others to calculate its Scope 3, Category 1, emissions. If available from suppliers, it also considers supplier-specific emission factors after going through an internal validation process. For calculating the total CO₂ equivalent emissions, Clariant is using emission data from a data basis that considers characterization factor GWP from IPCC AR5 and expects its suppliers to provide emission factors following the same calculation method. CO₂ equivalent data therefore considers CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃. This monitoring allows the company to generate transparency, identify hotspots and reduction opportunities in its value chain, influence suppliers, and induce innovation.

Between 2021 and 2022, Clariant's Scope 3 emissions from continuing business decreased by 4%, reflecting the several initiatives implemented, especially on purchased goods and services. Compared to 2019, in 2022 Scope 3 emissions from continuing business decreased by 7%, while purchased goods and services emissions decreased by 5%. Clariant measures the emission intensity by total reported Scope 3 CO₂ equivalent emissions in relation to the group wide total sales in CHF. The emission intensity of

INDIRECT (SCOPE 3) GHG EMISSIONS ¹

	Continuing operations	Discontinued operations	Total 2022	2021 continuing operations	2021 ²	2020 continuing operations	Total 2020
Gross indirect (Scope 3) GHG emissions (in m t CO₂e)	3.47	n.a.	3.47	3.61	4.31 ³	3.34	4.20
Gross indirect (Scope 3) GHG emissions (in kg CO₂e/CHF sales)	0.67	n.a.	0.67	0.83	0.82	0.87	0.81
Purchased goods and services	2.58	n.a.	2.58	2.70	3.19 ³	2.46	3.12
Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	0.18	n.a.	0.18	0.16	0.32	0.13	0.27
Upstream transportation and distribution	0.14	n.a.	0.14	0.11	0.12	0.11	0.12
Downstream transportation and distribution	0.13	n.a.	0.13	0.14	0.15 ³	0.12	0.12
End-of-life treatment of sold products	0.44	n.a.	0.44	0.50	0.52	0.52	0.56

¹ Scope 3 emissions are calculated following the GHG Protocol standard

² The Scope 3 data does not include all related Süd-Chemie India Pvt. Ltd. emissions.

³ All figures are rounded, resulting in discrepancies between the total emissions and the breakdown figures.

Clariant 2022 continuing business decreased by 19% compared to 2021. Compared to 2019, the Scope 3 emission intensity decreased by 21%. This reflects the improvement projects executed during the year. These projects included the purchase of raw materials with lower product carbon footprint as well as increasing the quality and transparency of emission factors of Clariant's purchased goods and services. Projects are executed in all business segments, in alignment with the business strategies. In total, the activities summed up to a significant portion of the overall reduction in Scope 3, Category 1 emissions compared to the 2021 baseline. Simultaneously, there have been contrary effects, e.g., clarity on emission factors, resulting in higher values. Supplier engagement to support emission reduction remains a key priority for the next few years, as the chapter → **Working together for a better footprint** describes. Transparency and availability of validated and credible supplier specific emission factors of the raw materials purchased gain importance in order to make informed decisions and to execute the strategic roadmap. → **Read more about TfS**

Due to SBTi and GHG protocol requirements, biogenic CO₂ uptake emissions have been separately identified for purchased good and services and are therefore not included in this category. Clariant is in the process of collecting information on biogenic carbon to be able to disclose the biogenic carbon emissions in the future.

In 2022, the company has introduced its automated product carbon footprint calculator »CliMate.« »CliMate« allows to calculate the product carbon footprint (PCF) of the portfolio, based on standardized production recipes. »CliMate« has been developed together with Mibcon. The automated carbon footprint calculator »CliMate« enables Clariant to offer consistent cradle-to-gate greenhouse gas (GHG) emission data for hundreds of finished products and solutions from across its whole portfolio, in line with the ISO 14067 norm. The powerful new tool is based on leading standards for PCF calculations and is set to be in line with the Together4Sustainability guideline on calculating product carbon footprints. »CliMate« has also been validated by the independent organization TÜV Rheinland. Clariant's internal team of experts used existing GHG tracking system information and combined it with its product recipes to develop this bespoke solution with support from industry specialists. »CliMate« will enable Clariant to showcase, in a consistent way, PCF improvements over time as it

continues to achieve ongoing reductions in emissions within its own operations and from purchased goods and services. The information provided by the calculations will also be used by Clariant to uncover improvement opportunities within its supply chains. Clariant's current PCF portfolio coverage will expand to ever-wider application areas as supporting information becomes increasingly available from suppliers through the company's supplier engagement program. Clariant continues to engage with its raw material suppliers so that they might share their carbon footprint data and demonstrate the greenhouse gas emission reductions Clariant expects from its strategic suppliers.

Educational webinars introduce »CliMate« tool to internal audiences

The new automated product carbon footprint calculator »CliMate« enables Clariant to offer consistent cradle-to-gate greenhouse gas (GHG) emission data for hundreds of finished products and solutions from across its whole portfolio.

In two webinars, the company introduced the tool, e.g., to the sales and procurement teams, product development, or the support teams. In the 45-minutes sessions, addressing about 140 employees each, participants learned about climate change, its context to Clariant portfolio, as well as the capabilities of the tool and how it can be used.

In a second webinar, Clariant employees learned more about the complexity of performing product carbon footprints and the value the tool has for customers, including providing reliable carbon footprint data using state of the art calculation approach validated by → TÜV Rheinland, which can be used as basis calculating the specific carbon footprint of Clariant products. The webinar also highlighted how the PCF Clariant is providing its customers with, is influencing their Scope 3 emissions.

All training sessions were recorded for the internal learning platform and made available to employees for self-learning.

→ Read more on the Clariant website

To provide extensive reporting for the Dow Jones Sustainability Index (DJSI) and the Carbon Disclosure Project (CDP), Clariant voluntarily reports on its Scope 3 emissions. It focuses on the categories deemed most relevant for its business: the greenhouse gas emissions from purchased raw materials, fuel- and energy-related activities (not included in Scope 1 or 2), upstream and downstream transportation and distribution, and end-of-life treatment of sold products. These categories cover almost 70% of all Scope 3 emissions.

Task Force on Climate-Related Financial Disclosures

The framework developed by the Task Force on Climate-Related Financial Disclosures (TCFD) provides a systematic framework to manage and report on the risks, opportunities, mitigations, and governance resulting from the impacts of the climate crisis. The TCFD recommends four core elements: governance, strategy, risk management, and metrics and targets. Clariant recognizes that climate change has an impact on its operations and markets, and vice versa. Since the beginning of 2021, the company has been a supporter of TCFD and in 2022 deepened the analysis of its climate-related risks and opportunities, assisted by an external consultant. Using specific risk analysis software from the reinsurance provider MunichRe and IPCC World Atlas data, Clariant developed a comprehensive and detailed outlook of the exposure toward various physical risks and opportunities in the value chains it operates in.

Clariant's approach for its second TCFD reporting year was led by the Sustainability Transformation team, and developed together with the business units and departments such as Enterprise Risk Management, Communications, Operations, Environmental Safety and Health Affairs (ESHA), and Procurement. Risk and opportunity assessment workshops were complemented by a gap analysis and an alignment of governance and reporting.

In the coming years, Clariant envisions a deep dive even further into the risks and opportunities assessment, including their financial quantification, and a more detailed development of climate strategies.

1. Governance

1. a. Describe the Board's oversight of climate-related risks and opportunities

Within Clariant's purpose, sustainability and innovation are key pillars of the success of the company. Sustainability transformation of the company is, on the one hand, transforming its operations toward climate neutrality and overall sustainability, and on the other hand, developing sustainable products which in return support Clariant's customers in their sustainability transformation, helping them to achieve their sustainability targets. With sustainability, one of the key drivers to steer the company's strategy and portfolio, the Board of Directors ultimately monitors the company's opportunity and risk management performance – including environmental opportunities and risks. It advises the Clariant Executive Leadership Team (ELT) in quarterly Innovation and Sustainability Committees (ISC) as well as during the annual performance cycle. Subject of discussion are sustainability-related policies, reporting obligations, and strategies, with a focus on portfolio implications in Environmental, Social, and Governance (ESG) areas. The agenda of the ISC relates to Clariant's 1+5 sustainability focus areas, including climate-related topics. It also monitors the progress on sustainability KPIs, including Scope 1, 2, and 3 emission reductions and the corresponding roadmaps. It is chaired by a designated member of the Board and is composed of four members of the Board, including the Chairman of the Board as well as the CEO and Chief Technology & Sustainability Officer (CTSO) *ex officio*.

In addition, the Chief Sustainability & Technology Officer oversees and manages climate risks and opportunities across the company and is part of the Executive Leadership Team.

1. b. Describe Management's role in assessing and managing climate-related risks and opportunities

Clariant is committed to reducing its footprint and helping customers and downstream users improve their sustainability performance, as well as to procuring sustainably manufactured raw materials. The governance structure reflects Clariant's responsibility for a sustainable future: at the beginning of 2021, Clariant changed its organizational structure to improve the integration of sustainability and innovation. The Group Innovation & Sustainability (GIS) unit and the Innovation & Sustainability Committee and Council set sustainability and climate targets as well all strategies, while also ensuring their execution. The highest governance level for climate-related risks and opportunities is the Board of Directors' Innovation & Sustainability Committee (see previous paragraph). The Innovation & Sustainability Council ensures that climate-related aspects are considered in the company's strategy and operations. The Council meets quarterly and reports relevant climate-related outcomes, including risks and opportunities, to the Board of Directors' Innovation & Sustainability Committee. It is chaired by the Chief Technology & Sustainability Officer and includes the CEO, the Chair of the Innovation & Sustainability Committee, the Head of Sustainability Transformation, the innovation heads of the business units, and the head of the GIS Program Management Office as permanent members.

The Head of Sustainability Transformation reports directly to the CTSO, and his or her responsibility covers climate-related topics, sustainability-driven innovation excellence (iGarage), as well as sustainability reporting, including the engagement with ESG rating agencies. Clariant has committed itself to SBTi targets for Scope 1, 2 and 3 (Category 1) to achieve emission reductions (Scope 1 & 2: 40% and Scope 3, Category 1: 14%) by 2030. The implementation and execution of the defined roadmaps to achieve the targets and to manage risks and opportunities is within the responsibility of the different businesses and functions.

At an operational level, the Corporate Sustainability Transformation team manages and coordinates two core teams, which steer the Scope 1, 2, and 3 purchased goods and services emissions. These teams include business unit representatives and relevant functions. Their mission is to support the development of concrete roadmaps for progressing in Clariant's climate targets, and to identify investment needs, risks, and mitigation activities.

The teams periodically report progress as well as risks and proposed mitigations to the Innovation & Sustainability Council and Committee for guidance. Risk mitigation proposals are reported by the teams to the Executive Leadership Team for approval.

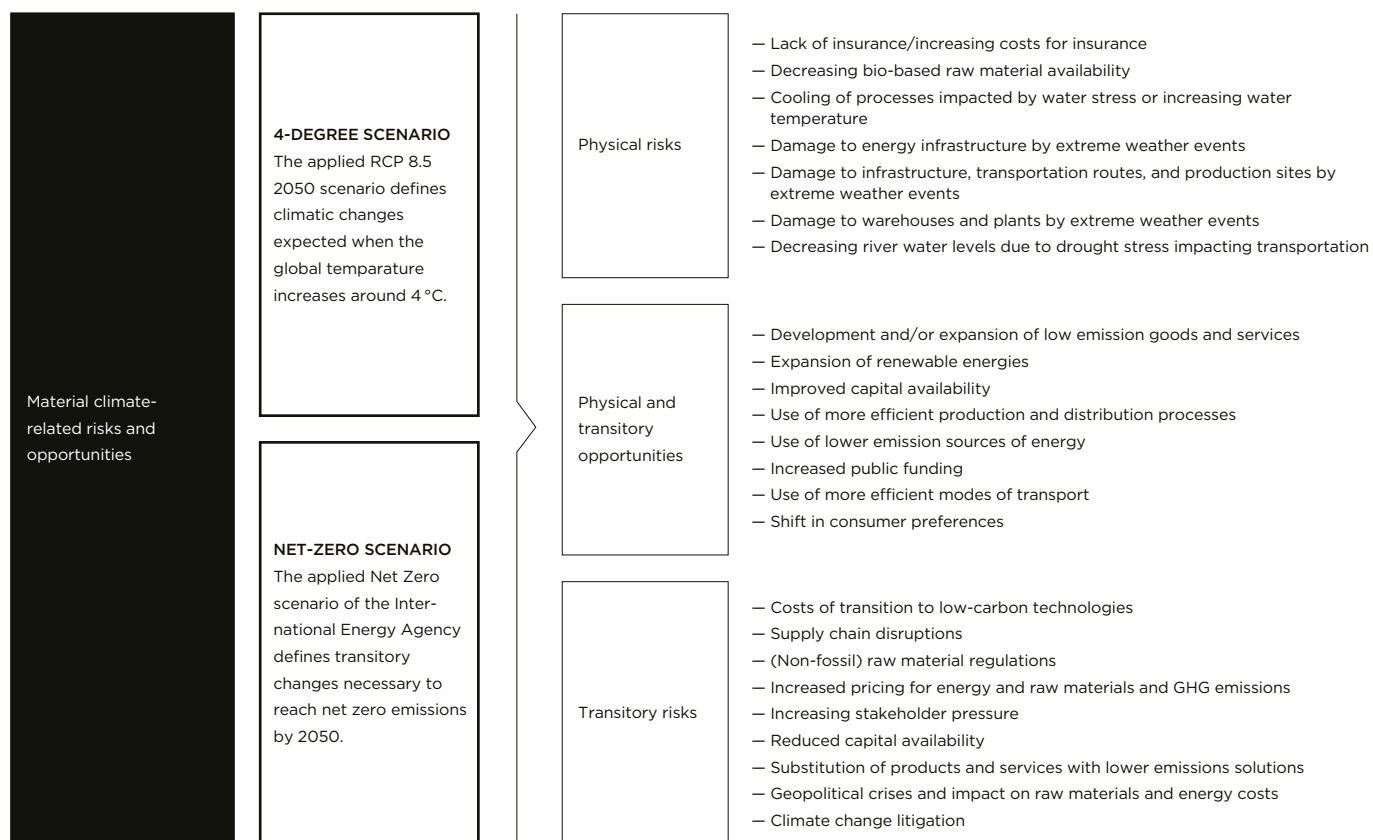
Climate target achievement on Scope 1, 2 and 3 is additionally incentivized by → **short- and long-term bonus schemes**

2. Strategy

2. a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term

Clariant categorizes climate-related, business-relevant risks and opportunities into physical risks, transitory risks, and physical and transitory opportunities. Physical risks comprise events such as extreme weather, storms, and heavy precipitation but also chronic changes in climatic conditions, such as temperature changes or sea level rise. Transition risks, which arise in connection with the transition to a lower carbon economy, emerge in policy and legal,

019 MATERIAL RISKS AND OPPORTUNITIES



technology, market, and reputational risks. Examples are changing political frameworks, technological developments, and changing market expectations. But both physical and transitory risks also bring along opportunities with climate mitigation solutions as a focus area for Clariant. They arise in the areas of resource efficiency, energy sources, products and services, markets, and resilience. More information on Clariant's risks and opportunities, including counter initiatives, can be found in → **Figure 019**

Most material risks and opportunities

a. Physical risks:

a. 1. Limited insurance capacity / increasing costs for insurance

- Major risk: The increasing frequency and severity of natural catastrophes combined with an accumulation of risks at certain location has led insurance companies to carry significant losses. The financial ability of insurance companies to cover such scenarios can be expected to come to a limit. As a consequence, steep increases in insurance premiums can be expected, as well as the inability to transfer such risks.
- Main initiatives: Risk mitigation measures such as flood defense improvement, business continuity planning, etc. will consequently need to be gradually enhanced where risk transfer mechanisms are no longer available.

a. 2. Process constraints associated with water stress or increasing water temperature

- Major risk: Many manufacturing processes require cooling with river water. Low water levels or river water temperature increase can lead to the interruption of production and loss of business.
- Main initiatives: Clariant has been conducting comprehensive water stress assessments since 2017. Risk mitigations include water efficiency improvements as well as enhanced cooling technologies and energy recovery projects.

b. Transitory risks:

b. 1. Increased prices for energy and raw materials

- Major risk: Geopolitical crises, carbon pricing, and energy shortages would lead to higher operational expenditures and high fossil fuel price dependency.
- Main initiatives: Clariant is actively diversifying its supplier landscape and increasing the share of renewable energies to become more independent of fossil fuels. In its strategies for raw materials, Procurement also relies on multi-sourcing to achieve optimum purchase prices through competition. Digital market analysis as well as regular strategy meetings to assess the raw materials situation are established. Additionally, replacing fossil-based raw materials through low-carbon alternatives reduces dependency of fossil-based price driver.

b. 2. Costs of transition to low-carbon technologies and products

- Main risk: High expenditures required for development of sustainable products, reliable energy supply, and sustainable raw materials, which can impact the company's overall profitability.
- Main initiative: Investments in sustainable long-term green electricity Power Purchase Agreements increase supply security and optimized expenditures. Another approach of Clariant is to increase efficiency by leveraging → **cross-industry** collaborations and thereby simultaneously increasing the scope and chances for success of innovative and sustainable solutions. Clariant is actively participating in industry forums like the Low-Carbon Emitting Technology Initiative of the World Economic Forum (WEF) to find further cross-industry collaborations.

c. Opportunities:

- c. 1. Development and expansion of products with low product carbon footprint (PCF). An increased need for products with low PCF by customers can be expected. Clariant has developed an automated product carbon footprint calculator (Climate) which allows to provide the relevant information to the customers. Combined with Clariant's commitment to achieve its Scope 1, 2 and 3 targets, it positions Clariant to offer products with improved PCF along with the required data transparency.
- c. 2. Use of more efficient production and processes: A significant share of Clariant's sales, particularly in the adsorbents and catalysts portfolio, is based on products that contribute to the reduction of carbon emissions. The demand in emission reduction and energy efficiency is expected to increase, strengthening the company's competitive position on the market.

2. b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Climate-related risks and opportunities have influenced Clariant's strategy and financial planning in several areas, among which:

- Products and services: Clariant's carbon footprint is mostly coming from its Scope 3 emissions (>84% in 2022), so the company's strategy is not only focused on its own operations, but also covers the value chain. Considering that more than 80% of the environmental impacts of a product is determined at the design stage. Clariant carries out a comprehensive life cycle-based sustainability assessment of its products during the development phase using Clariant's Portfolio Value Program (PVP), including an assessment of the impact of the product on climate change across the life cycle of the product. This allows to identify those products that have a particularly beneficial impact on GHG emissions compared to the industry standards or the most recent product generation;

- Supply chain: More than 62% of Clariant's 2022 carbon footprint is derived from purchased raw materials. In the future, an increasing share of renewable raw materials will replace fossil-based resources, potentially leading to a reduced product carbon footprint. Starting in 2019 a dedicated workstream was put in place to develop a roadmap to reduce Clariant's Scope 3 emissions. It started with a deep-dive analysis with a group of internal experts to evaluate the main emission sources, followed by the collection of potential ideas for emission reduction. These ideas were prioritized in terms of technical approval needs, influenceability by Clariant, and potential cost impacts. A systematic approach to engaging with value chain partners is ongoing, with several webinars and questionnaires being sent out for collection of emission factors and emission reduction plans;
- Investment in R&D: Clariant's climate strategy also aims to boost and incentivize low-carbon innovations, such as the sunliquid® technology and Carbon2Chem® (aimed at using emissions from steel production as raw material for chemicals);
- Operations: At an operational level, Clariant's Scope 1 & 2 together represent approximately 16% of the company's carbon footprint. Although they are lower than the Scope 3, the influence for emission reduction activities is higher. Clariant aims to reduce the absolute Scope 1 & 2 emissions by -40% until 2030 (base year: 2019). In addition, in 2021, Clariant has introduced an internal carbon price for major capital expenditures to factor into decision-making, ensuring resource allocation toward low-carbon technologies and product offerings, while mitigating the risk of increasingly costly regulations.

Clariant's corporate carbon intensity (as measured in tons CO₂e per mCHF sales) is relatively low compared to the company's peers. With the main initiatives mentioned above and further quantitative assessments, Clariant can react to both risks and opportunities in different scenarios and is well set up to overcome the climate challenges ahead.

020 CLIMATE PORTFOLIO ASSESSMENT¹

Tropical Cyclone

The tropical cyclones hazard has almost no changes in the different scenarios.

River Flood Undefined

The share of sites with a 100 year return period increases from currently 18% to 22% until 2050.

Sea Level Rise

89% of all locations are without a hazard for sea level rise until 2100. 11% face a medium-high to high hazard.

Fire Weather Stress Index

The share of low-hazard sites decreases from currently 43% to 11% until 2050. Until 2100, every fifth location faces a medium-high or high hazard for wildfires.

Drought Stress Index

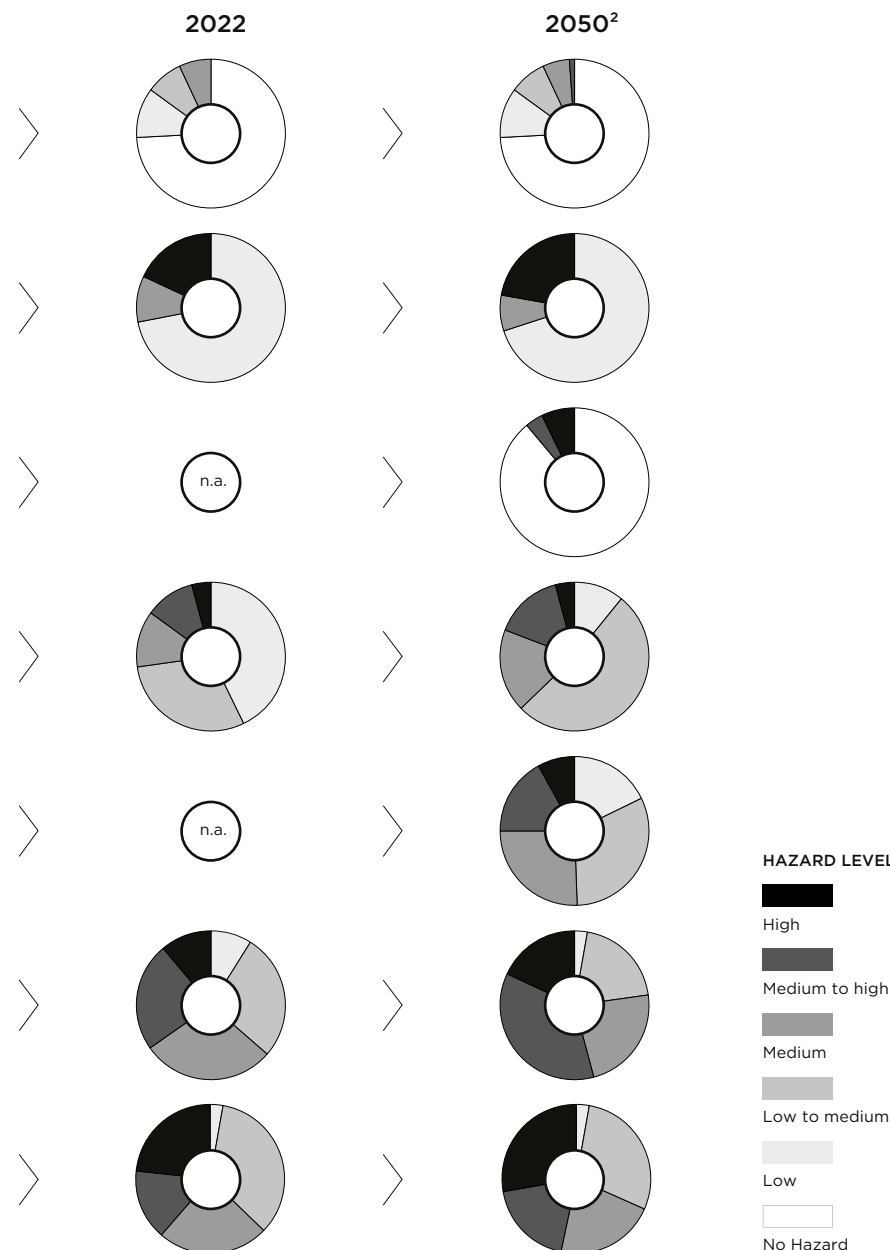
50% of the sites are in the low or low-medium hazard range in 2050. 24% face a medium-high or high hazard.

Heat Stress Index

In 2050, 54% of sites are facing a medium-high or high hazard, which increases to 70% until 2100.

Precipitation Stress Index (heavy rainfall)

Low-medium hazard sites decrease from 37% to 32% until 2050. At the same time, high hazard sites increase from 23% to 28%.



¹ Figures refer to the share of locations taken into account

² 4-Degree Scenario (IPCC, RCP 8.5)

2. c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2 °C or lower scenario

Clariant has conducted a qualitative assessment of its climate-related risks and opportunities using different climate-scenarios. For physical risks and opportunities, scenarios from the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report were used, called RCP scenarios. The Representative Concentration Pathways (RCP) apply different greenhouse gas concentration and radiation, which can be translated into various global temperature increases:

- RCP 2.6: Well-below-2-degree scenario
- RCP 4.5: 2.5-degree scenario
- RCP 8.5: 4-degree scenario

The scenarios take into consideration different short- to long-term time horizons between 2030 and 2100. For transitory risks and opportunities, the Net Zero Emission scenario (NZE) of the International Energy Agency (IEA) has been applied. It shows a pathway to achieve net zero CO₂ emissions by 2050, mainly driven by energy, innovation, and technological changes. It is therefore consistent with limiting global temperature increase in line with the Paris Agreement and allows Clariant to make scenario-based assumptions about the impacts and risks and opportunities associated with the transition to net zero CO₂ emissions by 2050.

In 2022, workshops were carried out to review all relevant TCFD recommended risks and opportunities, including specific impacts for Clariant, potential financial impacts, the likelihood and size of impact to determine materiality, and the identification of main initiatives that address the identified material risks and opportunities. For the workshop, Clariant focused on two climate scenarios to be prepared for, either transitory risks and opportunities (NZE scenario) or a more extreme scenario (RCP 8.5 as 4-degree-scenario) where physical risks materialize the strongest. The result of the analysis, i.e., Clariant's material risks and opportunities, is described in the climate-related risks and climate-related opportunities tables. In 2023, this analysis will be further developed to include quantitative assessments.

3. Risk management

3. a. Describe the organization's processes for identifying and assessing climate-related risks

Identifying and assessing climate-related risks and opportunities at Clariant is performed by a TCFD project team, led by the Sustainability Transformation team and complemented by experts from Enterprise Risk Management, Communications, Operations, Environmental Safety and Health Affairs (ESHA), and Procurement. In 2022, the TCFD-specific project team involved an external consultant to take the next step in risk and opportunity assessment and conducted a workshop to identify relevant climate-related risks and opportunities. This enhanced risk and opportunity (R&O) assessment comprises a physical risk analysis of the company's sites (see → Figure 020), sales, and sourcing regions. The risk analysis of Clariant sites was prepared using the »Climate Change Edition« of the »Location Risk Intelligence« software from reinsurer Munich Re. It is based on the RCP scenarios for atmospheric greenhouse gas concentrations from the latest IPCC Assessment Report (IPCC AR5, 2014). In up to three climate scenarios (RCP 2.6, RCP 4.5, and RCP 8.5) and time horizons (2030, 2050, 2100), the tool analyses site-specific hazard exposure for various acute and chronic hazards, such as sea level rise and wildfires.

For the risk analysis of Clariant's sales and sourcing regions, regional information from the IPCC's Interactive World Atlas was used to identify physical hazards. This allows to identify which sales and sourcing regions are in danger and could impact the company's supply chain reliability. For both sales and sourcing regions, the analysis identified mean temperature changes, maximum temperature increase, and heavy precipitation as the main risks.

3. b. Describe the organization's processes for managing climate-related risks

In Clariant's risk assessment process, the risk analysis was enhanced by an impact assessment where risk consequences were classified in terms of financial impact. Based on the estimated financial impact, Clariant qualitatively assessed the materiality of identified climate-related risks and opportunities. The TCFD analysis in 2023 will include financial exposure estimates in alignment with the company's risk assessment process.

3. c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management

The responsible entity for Clariant's ERM and risk assessment process has been continuously involved in the climate-risk and opportunity assessment to ensure that concepts and processes are aligned where possible. For example, a financial impact classification similar to the ERM process has been applied. Clariant will assess how to integrate the continuous management of climate change-related risks and opportunities in future.

4. Metrics and targets

4. a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process

Clariant's climate-related metrics and targets are available in the chapter »Environmental protection and resource efficiency« as well as in »Climate protection« in the → CDP Questionnaire, and on the → company's website.

4. b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Scope 1 & 2 emissions are calculated monthly with the »Sustainable Operations Cockpit« (SOC). Scope 3 emissions are monthly updated in the Scope 3 dashboard for purchased goods.

4. c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets

Since the 2021 financial year, Clariant's emission reductions have been part of short-term and long-term incentive remuneration. Scope 1 & 2 emission targets are part of the CLIP (Clariant Long-Term Incentive Plan) for members of the Executive Committee and Global Management. Scope 3 emission targets are part of the Management Level employees' incentive plan. To reduce climate-related risks in the future, Clariant introduced a carbon pricing scheme for all major capital expenditures that applies a monetary value on greenhouse gas emissions. → Read more in Sustainability Targets

CIRCULAR ECONOMY

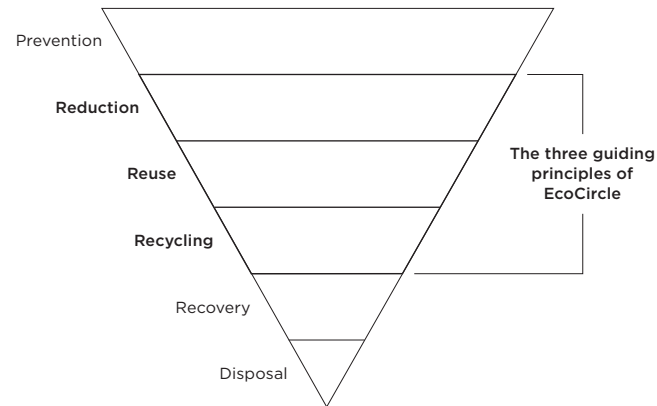
In a circular economy, reduced materials used for renewable, durable, and repairable products and solutions based on recycled input materials that are employed as long as possible are provided. At the end of their sustainable life, the input materials are fully recovered or recycled, which reduces their ecological impact. The circular economy is the necessary alternative to the current linear economic model and stems from increasing awareness of planetary resource limits. It is driven by sustainability ambitions and policy objectives linked to climate change, environmental protection, and the sustainable use of finite resources.

Management approach

Group Innovation & Sustainability (GIS) provides the framework and supports the business units in their circular economy efforts and has established resource efficiency and sustainable production targets for 2030. They are reported under the topic → **Environmental Protection and Resources**

All business units and several company functions, among them Sustainability Transformation, evaluate the opportunities offered by an increasingly circular economy.

021 WASTE HIERARCHY PRINCIPLES



Clariant reviews risks and opportunities associated with the circular economy as part of its corporate strategy management process. This structured approach further outlines, anchors, and advances the topic within Clariant's business units. The company has embedded circularity in its update of the Portfolio Value Program 2.0, incorporating circularity from raw material usage to production and finally to anticipating the impact to end of life. Thus, Clariant's product innovation supports recycling and products that do not hinder recycling. Additionally, Clariant uses raw materials which are based on recycling, such as waste materials from agricultural processes or recycled materials (e.g., ethylene derived from recycled plastic/rubber or metals).

With Clariant products mainly used in further production steps, the end of life of the final application is not always easy to assess.

Circularity is increasingly becoming a subject of upcoming regulation. One example, which will impact the complete value chain, is the Ecodesign for Sustainable Product Regulation (ESPR or Sustainable Product Initiative), which will reshape amongst others the requirements on circularity criteria. Additionally, the Revision of the Packaging and Packaging Waste Directive (PPWD) will have an impact on recyclability definitions and recycling rates. This offers opportunities for new products, but will also require an evaluation of the impact, for instance, on plastic packaging used for the transportation of chemicals. Clariant is also closely monitoring the evolution of waste management policies in major economies like the US and China, including important aspects such as recycling strategies, the role of chemical recycling, or product specific regulations.

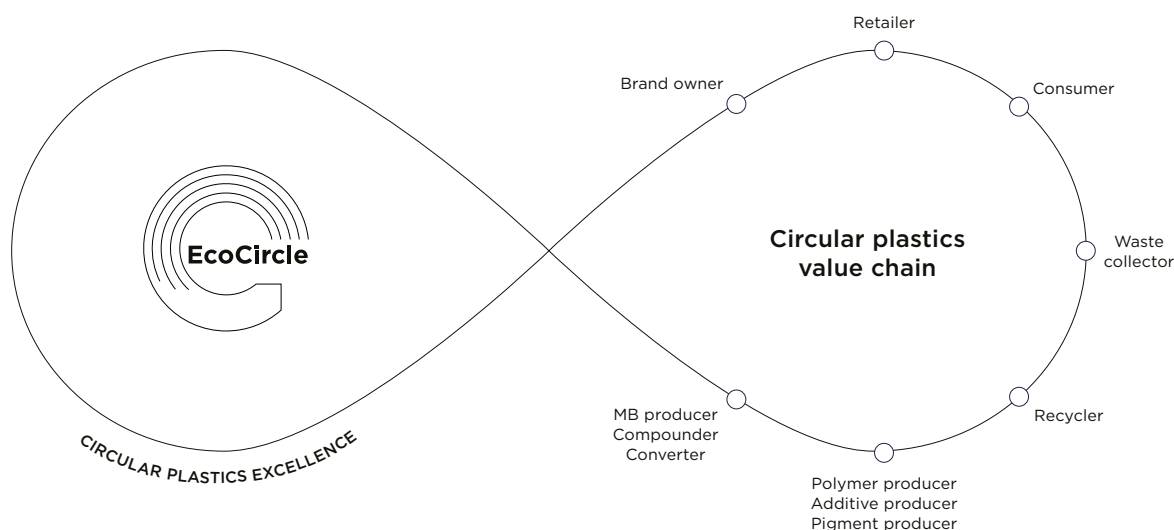
Circular Economy is increasingly in the focus of all the value chain players, especially of customers and end-users, as brand owners and OEMs strive for circularity. Clariant is actively collaborating in the EU Commission-driven Circular Plastics Alliance (CPA), in several industry collaborations such as the Alliance to End Plastic Waste (AEPW), and the Polyolefine Circular Economy Platform (PCEP) as well as in industry projects such as → **REVOLUTION** and → **STEP**

Clariant's contributions to a circular economy

Clariant contributes to a circular economy by:

- offering a continuously expanding product portfolio that enables a circular economy
- exploring promising options, partnerships, and areas for growth and innovation
- increasing the eco-efficiency of its production processes
- choosing waste and renewable resources instead of virgin or fossil resources, where suitable
- redesigning processes
- reducing water and energy use
- practicing closed-loop recycling at its sites

022 **ECOCIRCLE - BEYOND A PRODUCT FOCUS, COLLABORATING ALONG THE VALUE CHAIN**



In its 2021 Strategic Management Process, Clariant defined Circular Solutions as one of its four Innovation Areas. The circular economy goes beyond the company's own operations, affecting its complete value chain. This approach also includes analyzing the full life cycle of products and business models. Ongoing circulation of materials and products benefits business and the environment. A circular economy has the potential to create additional business opportunities and product or service developments. → Read more in Business Growth and Profitability

Since 2019, Clariant has focused on the circular plastics economy in its company-wide EcoCircle initiative. It is driven by the »Sustainability Transformation« organizational unit and extends to the company's entire value chain, individual projects being led by the business units. At dedicated sites, in 2022, Clariant further intensified its efforts to develop specialty products for a circular plastics economy.

Clariant is particularly committed to preventing the release of plastic waste in oceans, rivers, and other natural systems. The company offers solutions for mechanical recycling, dissolution and depolymerization processes, and chemical recycling. Its wide range of innovative stabilizers and compatibilizers supports obtaining higher-value plastics from recycling streams, while other products make materials more durable or improve existing and novel recycling processes.

Clariant is convinced that moving toward a more sustainable plastics sector is critical to the industry's success. However, a fully circular plastics chain requires reliable collection systems around the globe, improved sorting, increased rates of recycling, and enhanced quality of recyclates. Different stakeholder needs, consumer behaviors, and expectations must be aligned. Existing production processes and chemical compositions need to be adapted to circularity needs.

EcoCircle is well recognized and provides solutions along three guiding principles: reducing, reusing, and recycling plastic. The initiative is considered a best-practice example in the industry and includes presentations, customer workshops, and publications such as the Global Goals Yearbook. Clariant's commitment to plastics recycling along its value chain and advocacy for EcoCircle also resulted in outside recognition: The company earned the 2020 China GoldenBee Corporate Social Responsibility (CSR) award, presented by China Sustainability Tribune and GoldenBee, a pioneer network of CSR and sustainable development in China.

Clariant addresses customers' unmet needs

With more awareness of resource limitation, support for the circular economy as a necessary alternative to the current linear economic model is increasing. Clariant's Business Unit Industrial & Consumer Specialties (since January 2023: Care Chemicals) develops particular circular economy products. To foster the momentum of the circular economy, Clariant launched Safewing®, the deicing and anti-icing fluids that have a superior environmental profile thanks to their fully biodegradable additive packages and low surfactant content. In addition, Clariant developed a special on-site recycling program so that up to 70% of the glycol can be reused in the production of deicing fluids. Due to its global presence, Clariant has the logistic capability to provide regional airports with very short lead times.

In 2022, Clariant also launched an innovative portfolio of flexible, custom solutions for the emerging market of chemical plastics recycling. Not only does this help to reduce the environmental burden created by plastic waste that would otherwise be incinerated or landfilled, but it also provides for the sustainable production of valuable chemicals. The new products are designed for the purification of pyrolysis oil made from hard-to-recycle mixed plastic waste. Producers benefit from highly efficient impurity removal to achieve pyrolysis oil that is compatible with ethylene plants.

Read more on the → [innovative HDMax catalysts and Clarit™ adsorbents](#)

→ Read more about EcoCircle

→ Read more on the Design4Circularity project

AWARD

Clariant part of awarded cross-industry initiative for recyclable cosmetics packaging

Design4Circularity wins 2022 → SUSTAINABLE PACKAGING AWARD

With the award-winning project »Design4Circularity,« Clariant helped move circular plastic packaging forward. In a first and unique collaboration for the Personal Care industry, Clariant, Siegwirk, Borealis, and Beiersdorf combined expertise to tackle the challenge of creating recyclable consumer packaging, based on 100 % retrieved plastic packaging waste, for cosmetics applications. The pioneering initiative provided innovations and insights for the different design aspects to encourage others to also follow design-for-circularity principles. The cross-industry collaboration is targeting the achievement of truly circular packaging by incorporating full life cycle thinking in each development step, to create a new standard for the industry. Circular packaging supports reduced plastic waste, less use of new/virgin plastic material, and reduced climate impact. In November, »Design4Circularity« received the Sustainable Packaging Award.

Clariant brought expertise to the project by designing and developing a high-performing additives package, »Addworks,« additive solutions to protect polyolefin post-consumer recyclate (PCR) quality and prevent polymer chains from breakdown at each mechanical recycling step. This delivered high-value recycling material which repeatedly hit the high-end criteria of Personal Care-related consumer packaging. This innovation, in combination with the proper source of recyclate material, allowed the increase in PCR content in cosmetic bottles to 100 %.

Projects and initiatives with external partners

Clariant is engaged in various projects and activities that promote a more resource-efficient and sustainable circular society. The company supports policymakers' targets and customers' sustainability ambitions by collaborating with industry partners across the value chain. For example, → InReP – An Integrated approach towards Recycling of Plastics (ispt.eu), is a joint project of science and industry with 36 partners from the value chain, where Clariant is participating in the field of chemical recycling. Clariant is also involved in the EU project → REVOLUTION. In that context, the Business Unit Additives (since January 2023: Adsorbents & Additives) contributes to the value chain consortium to increase the efficiency and the range of electric vehicles by utilizing advanced materials and more efficient production processes (including artificial intelligence). The project targets the entire life cycle of products, including their design, and promotes circular economy processes, such as an increased content of recycled material, in various automotive use cases. Clariant is also engaged in the cluster Process4Sustainability and the Renewable Carbon Initiative.

→ Read more on the Renewable Carbon Initiative

Process4Sustainability – Joining forces for industries' transformation toward climate neutrality

One project Clariant is involved in is Process4Sustainability at Industriepark Hoechst, Germany. This cluster, of which Clariant is a founding member, fosters circularity to achieve carbon neutrality and is funded by the Hessian state government and the European Regional Development Fund. It is a network of companies in the process industry, of research institutions, and social innovation partnerships. The cluster's goal is to proactively shape the transformation process to carbon neutrality. It offers companies practical knowledge adapted to their individual needs about the levers of carbon neutrality, new markets, and innovative business models:

It measures the regional carbon footprint and identifies levers for climate neutrality for the long-term reduction of carbon emissions, designing paths to more resource-efficient production and to switching to alternative energy and raw material sources.

It identifies technical solutions through technology assessments and concrete demonstration projects in the fields of green steam, recycling, and wastewater technologies.

It addresses new business models for circular economy as well as possible public-private partnership models through international expert workshops.

It fosters networking activities and creates a platform that promotes cooperation between different actors (industry, research, NGOs, start-ups, politics, society) on the topic of sustainability and climate-neutral technologies; it establishes innovation partnerships and connects solution providers.

It increases innovative capacity and competitiveness through joint project development and public funding, e.g., by reviewing public tenders and giving support in the application process.

It assumes the public representation of interests and the external communication on climate-neutrality issues in the process industry.

→ Read more on Process4Sustainability

MATERIALS USED BY WEIGHT OR VOLUME

in m t	Continuing operations	Discontinued operations	Total 2022	2021 ²	2020 ¹	2019	2018
Total weight or volume of materials that are used to produce the organization's primary products and services during the reporting period	4.08 ³	n.a.	4.08 ³	4.90	4.10	4.50	4.60
Total production	3.80	n.a.	3.80	4.43	4.10	4.25	4.34

¹ Figure restated

² Every three years, Clariant validates environmental data from all production sites. The last full reporting campaign was in 2020, including estimated discontinued data for Business Unit Masterbatches for the first half-year. In interim years, including 2021, the reduced reporting scope comprises the larger sites responsible for at least 95 % of production.

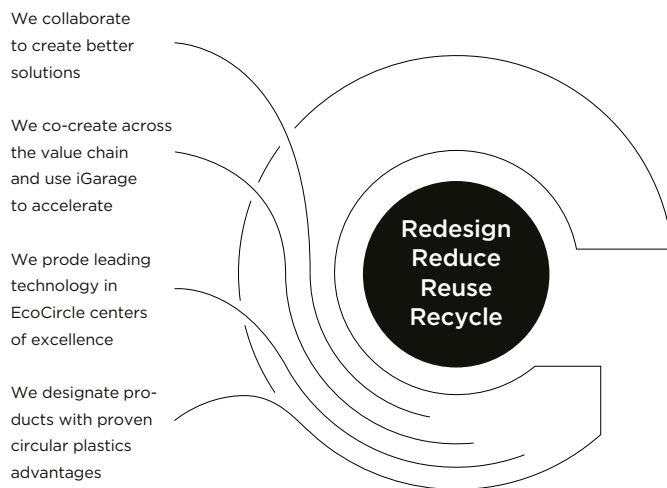
³ In 2022, less than 5 % of materials used were made of renewable raw materials.

Clariant helps promote the use of renewable raw materials

In 2022, Clariant joined the Renewable Carbon Initiative (RCI). RCI aims to speed up the transition from fossil carbon to renewable carbon for all organic chemicals and materials. Joining the RCI shows Clariant's commitment to driving forward innovative sustainability practices. The membership in the RCI allows Clariant to expand on its own solutions in the field of renewable carbon as well as collaborate more closely with partners, suppliers, and the industry at large in driving this matter forward. → Read more on the RCI

Organic chemistry will always depend on carbon since it is integral to the creation of chemicals and materials that are essential in almost all industries. The most promising solution is to reuse carbon already found in materials or in the atmosphere. For a range of its products, Clariant already uses viable alternative carbon sources, such as biomass, CO₂ and recycling streams.

023 ECOCIRCLE - THE APPROACH TO CIRCULAR SOLUTIONS



At a glance: sources of renewable carbon

Clariant is a founding member of the Alliance to End Plastic Waste (AEPW), together with some 70 other members along the plastics value chain. Its mission is to clear plastic waste from the environment by cleaning up bodies of water; building infrastructure to collect, manage, and recycle waste; promoting new technologies; and engaging with nongovernmental organizations, businesses, and communities. Clariant supports the Alliance's goals with innovation projects that enable design for recycling or the commercialization of chemical recycling, and by actively participating in its working structure. As an AEPW member, Clariant indirectly supports the collection, sorting, and recycling of plastic waste.

Securing fit-for-purpose mechanically recycled feedstock – both post-industrial and post-commercial – that can meet key plastic applications requirement is a key industry challenge, preventing broader use of recyclate in critical applications, such as cosmetic or detergent HDPE bottles. In fact, the industry tends to use customized quality of recyclates for an individual application – which is not conducive to developing high efficiency and economies of scale and both cost and quality optimization. Furthermore, variability of feedstock and the lower level of expertise in polymer design and control of quality means that the quality of recyclates produced from mechanical recycling falls short of the high-quality standards required for large-scale convertor operations and stringent performance targets.

In this forum, Clariant has been actively participating in shaping a program that starts from the value chain and aims to understand the critical performance requirements for the key applications while defining the benefits to the industry. It addresses how the Alliance can best support in establishing clarity of the required quality for recyclates suitable for use in high-volume applications. On this basis, the forum can drive a step change. As a follow-up, it can achieve continuously improved availability of recyclates and recycling rates.

In the Low-Carbon Emitting Technology Initiative of the World Economic Forum, Clariant particularly supported the workstreams Biomass Utilization and Waste Processing of Plastic Waste.

Furthermore, Clariant joined the EU Circular Plastics Alliance (CPA) in 2021, whose goal is to boost the EU market for recycled plastics to 10 million tons by 2025. Clariant's strategy in the CPA is to combine the design option for reduction, recycling, and reuse with solutions for mechanical or chemical recycling.

The company is chairing the Cefic Sustainable Product Issue Team and is represented in a number of other industry association's bodies such as Cefic's Bioeconomy Network of Experts or the Circular Economy Working Group.

Production materials

Recycled input materials used

Clariant tries to use recycled materials in production wherever possible. However, the percentage is low due to the nature of the production processes, as recycled raw materials often cannot be used because of purity or safety standard requirements. Clariant supports the expansion of chemical recycling technologies to increase the availability of recycled raw materials for its business units.

Reclaimed products and packaging materials

Clariant mostly provides reusable packaging, which customers can return to Clariant for cleaning and reuse. Other products are shipped as bulk goods in tank trucks and rail tank cars or silo trucks. To the extent possible, nonreusable packaging is recycled for material purposes or, especially in the case of hazardous materials, used to generate energy.

BIO-BASED ECONOMY

»Bio-based economy« refers to efforts that make the economy sustainable by using biological resources, for example, by replacing fossil materials with biomass.

Currently, around 95% of all industrially manufactured goods rely on fossil resources. However, governments worldwide have set targets for environmental and climate protection. With its »Policy framework on bio-based and bio-plastics,« the European Commission aims to develop a comprehensive policy framework on the sourcing, labeling, and use of bio-based plastics, as well as on the use of biodegradable and compostable plastics. Regarding the industrial production process, the Commission adopted the Communication »Sustainable Carbon Cycles.« Its aspirational goal is that by 2028, any ton of CO₂ captured, transported, used, and stored by industries should be reported and accounted for from its origin; by 2030, at least 20% of the carbon used in the chemical and plastic products should come from sustainable nonfossil sources; and by 2030, 5 million tons of CO₂ should be annually removed from the atmosphere and permanently stored through technological solutions.

The bio-based economy is increasingly recognized as a way to live within the limits of our planet. Tomorrow's economy depends on today's shift to the bio-economy, and this shift comes with a responsibility: to harvest and process biological resources efficiently in a way that preserves ecosystems and biodiversity and that respects human rights. Clariant has taken on this responsibility.

Through its Portfolio Value Program (PVP), Clariant assesses the sustainability profile of the product and project portfolio. More information can be found in the → **PVP chapter**. In 2022, the company conducted a methodology update, which raised the ambition on bio-economy relevant topics. From an early stage of the innovation project until commercialization, the use of renewable raw materials is assessed, also considering whether they are food-competing, genetically modified, or have an impact on biodiversity.

Clariant supports projects like SPIRAL (Small Producer Inclusivity and Resilience Alliance) to foster sustainability in bio-economy supply chains. SPIRAL connects global key players in the oil palm industry to support the inclusion of small farmers in the global supply chain and promote sustainable farming methods. The Clariant Foundation, an independently managed, purely philanthropic nonprofit organization, funds organizations and projects across the globe, e.g., two projects focused on sustainability in Indonesian palm oil plantations.

Need for action: Indonesian palm oil plantations

Clariant is a supporter of sustainability-related projects on Indonesian palm oil plantations and engages in activities as part of the collaborative initiative → **Action for Sustainable Derivatives**, where Clariant is a member. Exemplary projects are in relation to fostering women's rights in supply chains or aim at stopping deforestation. The projects are supported by the Clariant Foundation:

HERrespect: fostering women's rights in supply chains

Global supply chain companies are an important employer of women – they represent the majority of the workforce. Many of these female workers experience a low status in the workplace and in society, high levels of harassment, and violence. Violence, which can be economic, emotional, physical, or sexual, deprives women of their basic human rights and compromises their well-being. The issue requires increased attention and awareness, and Clariant and its customers are placing an increased emphasis on social aspects and human rights due diligence in the supply chain.

In 2022, the → ASD (Action for Sustainable Derivatives) in collaboration with → BSR (Business for Social Responsibility) launched HERrespect, a unique pilot that addresses gender-based violence, e.g., in Indonesian palm oil plantations. The project is part of the initiative HERprojects™ and strives to empower women and make sure that women are able to engage in decent and dignified work by bringing together global brands, suppliers, and NGOs. More than 1 000 workplace interventions have been initiated across 17 countries since 2007.

Read more on → HERrespect

The Mosaik Initiative: stopping deforestation

Forest destruction is a threat to the whole planet. Awareness of this issue is high among consumers and media. Most deforestation is linked to meat, soy products, and palm oil. In 2022, the Action for Sustainable Derivatives (ASD), in collaboration with Business for Social Responsibility (BSR) and Inobu, an Indonesian nonprofit research institute established in 2014, launched the next phase of its Mosaik initiative in Central Kalimantan, Indonesia. This five-year project aims to protect and restore landscapes while improving the welfare of farmers and indigenous people. The Mosaik initiative focuses not only on certifying palm oil but also on making the production of commodities more sustainable and inclusive.

In 2022, Clariant completed the integration of the Brazilian Personal Care Specialties company Beraca into its portfolio, offering a full range of active and natural origin ingredients. Beraca is a leading provider of natural ingredients ethically sourced from the Amazon rainforest and other Brazilian biomes. With the Socio-biodiversity Enhancement Program®, shared value is created for the company, customers, communities, and other stakeholders. Through this, Beraca can connect Brazilian local communities to its clients, offering transparency, full traceability, give-back projects, with true positive impact by keeping the forest standing, protecting the wildlife, and water resources.

Clariant encourages supplier communities to work with different native species so that many species have economic value and thus the vegetation is conserved. Besides, there are contracts with suppliers that have as a requirement the respect for environmental laws and that on-site monitoring is carried out according to necessity.

The communities are closely monitored by the Biodiversity team, and assessments of associations and cooperatives are carried out from the point of view of quality, sustainability, and compliance. Contracts are signed with supplier communities with labor and environmental clauses, and meetings are held with all members presenting the Supplier Code of Conduct, which mainly deals with good labor and social practices.

Clariant complies with the Brazilian Forest Code. It requires land-owners to maintain 35% to 80% of their land under native vegetation.

Management approach

Within Clariant, Group Biotechnology was integrated in 2022 into the Business Segment Biofuels & Derivatives. The Global Innovation and Sustainability Council (GISC) and the Board of Director's Innovation and Sustainability Committee oversee the topic.

The business units manage opportunities and engagements with stakeholders, create business opportunities, and initiate new product designs. The business unit contract R&D centers work on finding bio-based solutions and on developing products.

Clariant is going to enhance its corporate management approach to the bio-based economy in the near future. This will include a review of all policies and goals.

Bio-based economy policies

The company has recently defined the bio-based economy as one of its four Innovation Arenas based on three pillars: procuring raw materials, increasing the use of bio-based materials, and developing products that support a bio-economy (e.g., processing waste oil into fuels).

Clariant's focus on a bio-based economy is a distinguishing feature within the chemical industry. The company improves the sustainable profile or supports the improvement of Scope 3 at customers.

Clariant has set Scope 1, 2, and 3 emission reduction targets for 2030 in accordance with the → **Science-Based Targets initiative**. Bio-based products and materials play a central role in achieving these objectives, as they often have a favorable emission profile.

→ [Read more on our sustainability designator TERRA](#)

→ [Read more on VITA sustainable surfactants](#)

In December 2021, Clariant published its Global Policy on Sustainable Palm Oil, which sets forth commitments for the sourcing of sustainable palm oil, i.e., transitioning to source 100% certified palm-based materials according to the Roundtable on Sustainable Palm Oil (RSPO) certification or equivalent. The policy also focuses on supplier requirements such as compliance with the No Deforestation, No Peat, No Exploitation (NDPE) approach. Achieving the commitments by 2025 is facilitated largely by increased transparency in the value chain, which Clariant encourages actors along the value chain to pursue. Clariant sources RSPO certified palm oil and palm kernel oil derivatives according to the RSPO Mass Balance allocation concept/scheme. Its ultimate goal is to shift all palm-related purchases to sustainable alternatives.

Since 2013, Clariant has been a partner in the Bio-based Industries Consortium (BIC). BIC represents the private sector in two public-private partnerships with the European Commission: the Bio-based Industries Joint Undertaking (2014–2020) and its successor, the Circular Bio-based Europe Joint Undertaking (2021–2027). They set goals to establish and demonstrate new sustainable circular and bio-based value chains.

Clariant has participated in the initiative »Sustainable Palm Oil and Traceability in Sabah« (SPOTS). During its participation, Clariant implemented action plans regarding the sustainability of its palm oil supply chain. They include working on the transparency of supply chains and providing support services to independent smallholders to improve their income and quality of life.

As a member of the → **Action for Sustainable Derivatives (ASD)**, Clariant does a transparency exercise to assess how the company's portfolio is exposed to risky areas. In 2022, for the first time, the company engaged with its 20 most important suppliers within ASD by using the Sustainable Palm Index (SPI) Tool. The SPI is an evaluation scorecard for suppliers of palm-based derivatives and aims to assess the level of commitments, process, and achievements in terms of sustainable sourcing practices. It is a self-disclosure questionnaire with independent verification based on desk information. The evaluation is conducted by Transitions. Through this assessment, Clariant achieved an understanding about the level of compliance of their main suppliers. At the same time, Clariant was evaluated as a supplier itself and was evaluated as compliant. → [Read more about supplier evaluation in Supply Chain Resiliency](#)

Research for sustainable materials

Clariant has established contract R&D centers and biotechnology facilities to test a variety of different feedstocks and to turn them into high-performing, sustainable solutions. Within Clariant, Group Biotechnology was integrated into the Business Line Biofuels & Derivatives in 2022. It also partners with experts in its value chains to sustainably source and process plant ingredients. It also produces second-generation bioethanol under the sunliquid® brand. In October 2021, the construction of the first full-scale commercial cellulosic ethanol plant for sunliquid® in Podari, Romania, was completed.

In 2022, the Business Area Natural Resources continued its search for sustainable raw materials with an improved carbon footprint or toxicity profile. The Exolit® OP, Licowax®, and Licocene® Terra ranges, for example, are based on certified renewable ethylene and propylene from biomass feedstock, such as non-food-competing residue oils, helping to reduce the consumption of fossil resources.

One focus in 2022 was to scale up the sunliquid® process. The plant in Podari produced the first commercial amounts of second-generation bioethanol. The scale-up, however, also revealed some engineering challenges, which are being addressed but which are slowing the ramp-up to name plate capacity of the plant. This prompted taking an impairment to account for the revised plan in the fourth quarter.

Another focus was the scale-up of the rice bran wax-based coatings platform, which experienced rapid growth throughout the year, prompting a capacity expansion. This platform is replacing fossil-based waxes with wax derivatives based on a wax side stream from the production of rice bran oil. The resulting products have a lower carbon footprint, show excellent performance, and benefit from the inherent properties of the natural source being biodegradable or compostable and thus preventing the formation of microplastics.

In the Business Area Care Chemicals, Clariant unveiled new Vita bio-based surfactants, which are used for personal care products such as shampoo or detergents. More information can be found in the chapter → **Care Chemicals of the Business Report**.

In the Business Units Functional Minerals, Additives (since January 2023: Adsorbents & Additives), and Catalysts, Clariant continued to provide key ingredients and catalysts for the production of sustainable aviation fuels (SAF). For more sustainable products, see the chapter → **Catalysts**

The Business Unit Additives (since January 2023: Adsorbents & Additives) collaborates with the English biomaterials company Floreon, which develops and markets proprietary polylactic acid (PLA)-based compounds which are suitable also for durable and demanding applications such as flame-retarded home appliances, possibly replacing benchmark fossil-based materials with a significantly less positive carbon footprint. These polymers are mechanically tougher than traditional PLA, they deliver significant energy savings in processing, and are industrially compostable. Clariant's additives improve these biopolymers' performance and processing characteristics.

→ **Read more in the Business Report's chapter Natural Resources**

Certifications

Clariant considers bio-certifications when buying raw materials, especially the International Sustainability & Carbon Certification (ISCC) and the REDcert certifications. Palm-based materials are evaluated using the RSPO Mass Balance certification.

The plants of the Business Unit Additives in Knapsack and Frankfurt (both in Germany) received the ISCC Plus and REDcert certification for the mass-balance approach used in the production of product ranges containing biomass feedstocks. Both certifications are recognized schemes for validating the chain of custody and traceability of sustainable biomass, biofuels, and bioliquids in production processes.

Contribution to value creation

Clariant expects that regulations will increasingly stipulate the use of bio-based products. Moreover, there is also a high customer demand for sustainable bio-based products in Clariant's key markets, such as the personal or home care markets. Consumers are increasingly aware of climate change and related issues and are willing to pay a premium for sustainable products. This demand for bio-based chemicals will even grow in the coming years. Clariant is ready to meet this demand by protecting nature and maintaining high social standards.

To this end, Clariant considers the complete value chain – from the raw material feedstock to basic chemical manufacturers and the company's direct customers. For example, using waste streams from bio-based product processing is a promising way to connect industries and to avoid trade-offs.

Portfolio and procurement

Sustainability-driven innovation will support Clariant's average annual growth by approximately 1-2%, with a focus on bio-based products, on decarbonization, and on circularity. At the end of 2022, more than 20% of Clariant's portfolio was bio-based, enabled bio-based processes, or supported the transformation of bio-based raw materials. This spans most of Clariant's businesses, including care chemicals, bio-based additives, bioethanol production, and vegetable oil purification. With the → **Portfolio Value Program (PVP)**, Clariant continuously screens its portfolio based on 39 criteria, including bio-economy, to ensure that it aligns with sustainability principles.

Across all business areas, Clariant procured more than 4 800 different raw materials. In 2022, only 15.9% of purchased raw materials stemmed directly or indirectly from crude oil. About 26.6% were derived from natural raw materials such as bentonite, and 4.12% were made of renewable raw materials. The remaining materials were either base or specialty chemicals or nonchemicals. The most frequently purchased bio-based raw material was vegetable oil (e.g., palm oil and palm kernel oil), followed by wood pulp, starch, and bioethanol. In 2022, purchases of these products amounted to CHF 449 million, representing 20.9% of direct spend.

ESG Ratings and Rankings

Clariant fosters a culture of proactive and transparent communication to address the concerns and expectations of all stakeholders. This proactiveness and transparency is key to forming reliable trust-based relationships. All stakeholders are regularly consulted on the company's activities, targets, and sustainability performance, which is well reflected in its sustainability ratings and rankings.

CARBON DISCLOSURE PROJECT



In 2022, Clariant continues to consistently participate in the Carbon Disclosure Project (CDP) Climate Change and Water Security reporting programs since its initial 2007 participation. The CDP publishes the greenhouse gas emissions (GHG) of the world's largest corporations. In 2022, Clariant was rated higher than the Chemicals sector average for Climate Change and improved its score in Forests – Palm Oil with respect to 2021.

Since 2015, Clariant has consistently achieved a score of B– or higher in the categories Climate Change and Water Security.

DOW JONES SUSTAINABILITY INDICES



Clariant is a member of the Dow Jones Sustainability Index (DJSI) Europe and is assessed as one of the most sustainable companies in its sector.

The listing in the index comes as the result of Clariant's participation in the Global Corporate Sustainability Assessment (CSA) by S&P, an annual evaluation of corporate sustainability practices focusing on both industry-specific and financially material criteria. Clariant is also a member of the S&P Sustainability Yearbook 2023.

MSCI



The Morgan Stanley Capital International (MSCI) ESG Rating measures the company's resilience to industry-specific, material long-term environmental, social, and governance (ESG) risks. MSCI uses a rules-based methodology to identify industry leaders and laggards according to their exposure to ESG risks and how well they manage those risks relative to peers. In 2022, Clariant remains rated in the AA category, which is assessed as a leader among 66 companies in the specialty chemicals industry.

SUSTAINALYTICS



In 2022, Clariant's sustainability activities were evaluated by the leading and reputable rating agency Sustainalytics. The agency uses industry-specific criteria to examine the social, environmental, and corporate governance activities of companies. It assesses the extent to which a company is exposed to material ESG issues, and how the company manages the related manageable and idiosyncratic risks. For 2022, Clariant was rated with an ESG Risk Rating of 21.2, which ranks Clariant in a position of 31 out of 539 companies in the chemicals industry group.

ECOVADIS

Clariant's sustainability performance is evaluated regularly by EcoVadis. This widely recognized third-party online assessment focuses on four key areas: environment, labor practices, fair business practices, and sustainable procurement. EcoVadis is the partner for evaluation and improvement of supplier sustainability performance selected by → Together for Sustainability (TfS), the chemical industry initiative for sustainable supply chain management. Clariant ranks among the top 2% EcoVadis performers in its sector and across industries, with an outstanding performance in the sustainable procurement category.

FURTHER RATINGS AND RANKINGS

Euronext Vigeo Europe 120 Index

As one of 120 European companies, Clariant is included in the → **Euronext Vigeo Europe 120 Index**. This index consists of companies with an advanced environmental, social, and governance performance.

FTSE4Good Index

The Financial Times and the London Stock Exchange (FTSE) created the → **FTSE4GOOD INDEX** Series in 2001 in response to increasing focus on corporate social responsibility. FTSE rates companies for inclusion in the index on the basis of their performance in the environmental, social, and governance dimensions. In the reporting year, Clariant was listed in the FTSE4Good Index thanks to its leading ESG practices.

ISS ESG

→ **Institutional Shareholder Services (ISS)** is a global leading provider of corporate governance market intelligence for investors and corporations, and issues regular corporate ESG ratings on the basis of up to 100 rating criteria. In 2022, Clariant reached the »Prime« status as an industry leader.

SXI Swiss Sustainability 25

Clariant is listed in the → **SXI Swiss Sustainability 25 Index**, which consists of the best 25 companies from the Swiss index SMI expanded®. Ranking according to sustainability is outsourced to a third-party research provider.

Indices

Clariant reports in accordance with internationally recognized frameworks to create transparency and comparability. For 16 years, Clariant's reporting has been based on the Global Reporting Initiative (GRI). Since 2013, Clariant has committed to the United Nations Global Compacts and reports annually on its contribution to the 10 principles. Additionally, the company publishes information on climate risks in line with the Task Force on Climate-related Financial Disclosures (TCFD). Clariant also reports in accordance with the guidelines of the Sustainability Accounting Standards Board (SASB) for the first time.



GLOBAL REPORTING INITIATIVE CONTENT INDEX

Reporting according to the Global Reporting Initiative (GRI) is integral to Clariant's Reporting Hub 2022, providing comprehensive insights into sustainable value creation. For each material topic in the »Focus« and »Advance« categories — as presented in the → **materiality matrix** — Clariant outlines a management approach according to the GRI Standards as well as the corresponding topic-specific GRI disclosures.

Statement of use: Clariant has reported in accordance with the GRI standards for the period of 1 January to 31 December 2022.
GRI 1: Foundation 2021

Disclosures	Location	Requirement(s) Omitted	Reason	Omission	Explanation	External Assurance
General disclosures						
GRI 2: General Disclosures 2021						
2-1 Organizational details	→ Publication Details → Clariant Locations					
2-2 Entities included in the organization's sustainability reporting	→ Financial Report, 24. Segment Information → 36. Important Subsidiaries					
2-3 Reporting period, frequency, and contact point	Annual. 1 January-31 December 2022. Point of contact for the Integrated Report: Alessandro Canalis, alessandro.canalis@clariant.com					
2-4 Restatements of information	Any restatement of previously reported data is explained in a footnote under the respective disclosure.					
2-5 External assurance	→ Independent Limited Assurance Report					
2-6 Activities, value chain, and other business relationships	→ Business Report, Value Creation at the Group Level → Supply Chain Resiliency					
2-7 Employees	→ People Overview, New Employee Hires and Employee Turnover					
2-8 Workers who are not employees	→ Occupational Health and Safety					
2-9 Governance structure and composition	→ Corporate Governance Report, 1. Principles of Corporate Governance, → 8. Group Management, → Business Report, Introducing the Executive Leadership Team					
2-10 Nomination and selection of the highest governance body	→ Corporate Governance Report, 7. Internal Organizational Structure					
2-11 Chair of the highest governance body	→ Corporate Governance Report, 5.2.1. Günter von Au					
2-12 Role of the highest governance body in overseeing the management of impacts	→ Business Report, Operating an Integrated Business Model					
2-13 Delegation of responsibility for managing impacts	→ Corporate Governance Report, 7. Internal Organizational Structure					
2-14 Role of the highest governance body in sustainability reporting	→ Corporate Governance Report, 7. Internal Organizational Structure					
2-15 Conflicts of interest	→ Business Ethics and Compliance					
2-16 Communication of critical concerns	→ Business Ethics and Compliance					



Disclosures	Location	Requirement(s) Omitted	Reason	Omission	Explanation	External Assurance
2-17 Collective knowledge of the highest governance body	→ Corporate Governance Report, 5. Board of Directors					
2-18 Evaluation of the performance of the highest governance body	→ Corporate Governance Report, 7. Internal Organizational Structure					
2-19 Remuneration policies	→ Compensation Report, Compensation principles and structures → Ratio of basic salary and remuneration of women and men					
2-20 Process to determine remuneration	→ Compensation Report, Compensation principles and structures					
2-21 Annual total compensation ratio	→ Compensation Report, CEO Compensation Level vs Average Employee					
2-22 Statement on sustainable development strategy	→ Business Report, Letter to Stakeholders, Interview with the CEO					
2-23 Policy commitments	→ Business Ethics and Compliance					
2-24 Embedding policy commitments	→ Business Report, A Purpose-Led Strategy					
2-25 Processes to remediate negative impacts	→ Supply Chain Resiliency					
2-26 Mechanisms for seeking advice and raising concerns	→ Business Ethics and Compliance					
2-27 Compliance with laws and regulations	→ Business Ethics and Compliance → Product Stewardship					
2-28 Membership associations	→ Innovation and Technological Advances → Diversity, Equity, and Inclusion → Climate Protection → Circular Economy					
2-29 Approach to stakeholder engagement	→ Business Report, A Purpose-Led Strategy					
2-30 Collective bargaining agreements	→ Employee Engagement and Well-Being					
Material topics						
GRI 3: Material Topics 2021						
3-1 Process to determine material topics	→ Business Report, Business Model and Strategy					
3-2 List of material topics	→ Business Report, Business Model and Strategy					
Economic performance						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Business Growth and Profitability					
GRI 201: Economic Performance 2016						
201-1 Direct economic value generated and distributed	→ Business Growth and Profitability					
201-2 Financial implications and other risks and opportunities due to climate change	→ Risk and Crisis Management					
201-3 Defined-benefit plan obligations and other retirement plans	→ Employee Engagement and Well-Being					



Disclosures	Location	Requirement(s) Omitted	Reason	Explanation	External Assurance
Market presence					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 202: Market Presence 2016					
202-2 Proportion of senior management hired from the local community	→ Employee Engagement and Well-Being				→ KPMG CH
Procurement practices					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Supply Chain Resiliency				
GRI 204: Procurement Practices 2016					
204-1 Proportion of spending on local suppliers	→ Supply Chain Resiliency				→ KPMG CH
Anti-corruption					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 205: Anti-corruption 2016					
205-1 Operations assessed for risks related to corruption	→ Business Ethics and Compliance				
205-2 Communication and training about anti-corruption policies and procedures	→ Business Ethics and Compliance				→ KPMG CH
205-3 Confirmed incidents of corruption and actions taken	→ Business Ethics and Compliance				
Anti-competitive behavior					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 206: Anti-competitive Behavior 2016					
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	→ Business Ethics and Compliance				→ KPMG CH
Tax					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Financial Report, 4.3 – Income tax and other taxes				
GRI 207: Tax 2019					
207-1 Approach to tax	→ Financial Report, 4.3 – Income tax and other taxes				
207-2 Tax governance, control, and risk management	→ Financial Report, 10. Taxes				
207-3 Stakeholder engagement and management of concerns related to tax	→ Financial Report, 10. Taxes				
207-4 Country-by-country reporting		GRI 207-4	Information unavailable/incomplete	Data is not available at country level	



Disclosures	Location	Requirement(s) Omitted	Reason	Explanation	External Assurance
Materials					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 301: Materials 2016					
301-1 Materials used by weight or volume	→ Climate Protection				→ KPMG CH
301-2 Recycled input materials used	→ Climate Protection				
301-3 Reclaimed products, and their packaging materials	→ Climate Protection				
Energy					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 302: Energy 2016					
302-1 Energy consumption within the organization	→ Resource Efficiency and Environmental Protection				→ KPMG CH
302-2 Energy consumption outside of the organization	→ Resource Efficiency and Environmental Protection				→ KPMG CH
302-3 Energy intensity	→ Resource Efficiency and Environmental Protection				→ KPMG CH
302-4 Reduction of energy consumption	→ Resource Efficiency and Environmental Protection				
302-5 Reductions in energy requirements of products and services	→ Resource Efficiency and Environmental Protection				
Water and effluents					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 303: Water and Effluents 2018					
303-1 Interactions with water as a shared resource	→ Resource Efficiency and Environmental Protection				
303-2 Management of water discharge-related impacts	→ Resource Efficiency and Environmental Protection				
303-3 Water withdrawal	→ Resource Efficiency and Environmental Protection	303-3 b. breakdown of the total withdrawal from areas with water stress	Information unavailable/incomplete	Data not available	→ KPMG CH
303-4 Water discharge	→ Resource Efficiency and Environmental Protection	303-4 c. breakdown of the total water discharge to areas with water stress	Information unavailable/incomplete	Data not available	→ KPMG CH
303-5 Water consumption	→ Resource Efficiency and Environmental Protection				



Disclosures	Location	Requirement(s) Omitted	Reason	Omission	Explanation	External Assurance
Biodiversity						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 304: Biodiversity 2016						
304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	→ Resource Efficiency and Environmental Protection					
304-2 Significant impacts of activities, products and services on biodiversity	→ Resource Efficiency and Environmental Protection					
304-3 Habitats protected or restored	→ Resource Efficiency and Environmental Protection					
304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	→ Resource Efficiency and Environmental Protection					
Emissions						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 305: Emissions 2016						
305-1 Direct (Scope 1) GHG emissions	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
305-2 Energy indirect (Scope 2) GHG emissions	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
305-3 Other indirect (Scope 3) GHG emissions	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
305-4 GHG emissions intensity	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
305-5 Reduction of GHG emissions	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
305-6 Emissions of ozone-depleting substances (ODS)	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
305-7 Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
Waste						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 306: Waste 2020						
306-1 Waste generation and significant waste-related impacts	→ Resource Efficiency and Environmental Protection					
306-2 Management of significant waste-related impacts	→ Resource Efficiency and Environmental Protection					
306-3 Waste generated	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
306-4 Waste diverted from disposal	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH
306-5 Waste directed to disposal	→ Resource Efficiency and Environmental Protection					
						→ KPMG CH



Disclosures	Location	Requirement(s) Omitted	Reason	Omission	Explanation	External Assurance
Supplier environmental assessment						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 308: Supplier Environmental Assessment 2016						
308-1 New suppliers that were screened using environmental criteria	→ Supply Chain Resiliency					
308-2 Negative environmental impacts in the supply chain and actions taken	→ Supply Chain Resiliency					→ KPMG CH
Employment						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 401: Employment 2016						
401-1 New employee hires and employee turnover	→ Employee Engagement and Well-Being					→ KPMG CH
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	→ Employee Engagement and Well-Being					
401-3 Parental leave	→ Employee Engagement and Well-Being					→ KPMG CH
Labor/management relations						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 402: Labor/Management Relations 2016						
402-1 Minimum notice periods regarding operational changes	→ Employee Engagement and Well-Being	b. No mention in the collective bargaining agreements	Information unavailable/incomplete	Data not available		
Occupational health and safety						
GRI 3: Material Topics 2021						
3-3 Management of material topics	→ Management approach					
GRI 403: Occupational Health and Safety 2018						
403-1 Occupational health and safety management system	→ Occupational Health and Safety					
403-2 Hazard identification, risk assessment, and incident investigation	→ Occupational Health and Safety					
403-3 Occupational health services	→ Occupational Health and Safety					
403-4 Worker participation, consultation, and communication on occupational health and safety	→ Occupational Health and Safety					
403-5 Worker training on occupational health and safety	→ Occupational Health and Safety					
403-6 Promotion of worker health	→ Occupational Health and Safety					



Disclosures	Location	Omission			External Assurance
		Requirement(s) Omitted	Reason	Explanation	
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	→ Occupational Health and Safety				
403-8 Workers covered by an occupational health and safety management system	→ Occupational Health and Safety				→ KPMG CH
403-9 Work-related injuries	→ Occupational Health and Safety				→ KPMG CH
403-10 Work-related ill health	→ Occupational Health and Safety				→ KPMG CH
Training and education					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 404: Training and Education 2016					
404-1 Average hours of training per year per employee	→ Employee Engagement and Well-Being				→ KPMG CH
404-2 Programs for upgrading employee skills and transition assistance programs	→ Employee Engagement and Well-Being				
404-3 Percentage of employees receiving regular performance and career development reviews	→ Employee Engagement and Well-Being				→ KPMG CH
Diversity and equal opportunity					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 405: Diversity and Equal Opportunity 2016					
405-1 Diversity of governance bodies and employees	→ Diversity, Equity, and Inclusion				→ KPMG CH
405-2 Ratio of basic salary and remuneration of women to men	→ Diversity, Equity, and Inclusion				
Non-discrimination					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 406: Non-discrimination 2016					
406-1 Incidents of discrimination and corrective actions taken	→ Diversity, Equity, and Inclusion				→ KPMG CH



Disclosures	Location	Omission			
		Requirement(s) Omitted	Reason	Explanation	External Assurance
Freedom of association and collective bargaining					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 407: Freedom of Association and Collective Bargaining 2016					
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	→ Human and Labor Rights				
Child labor					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 408: Child Labor 2016					
408-1 Operations and suppliers at significant risk for incidents of child labor	→ Human and Labor Rights				
Forced or compulsory labor					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 409: Forced or Compulsory Labor 2016					
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	→ Human and Labor Rights				
Supplier social assessment					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 414: Supplier Social Assessment 2016					
414-1 New suppliers that were screened using social criteria	→ Supply Chain Resiliency				
414-2 Negative social impacts in the supply chain and actions taken	→ Supply Chain Resiliency				
→ KPMG CH					
Customer health and safety					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 416: Customer Health and Safety 2016					
416-1 Assessment of the health and safety impacts of product and service categories	→ Product Stewardship				
416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	→ Product Stewardship				
→ KPMG CH					



Disclosures	Location	Omission			External Assurance
		Requirement(s) Omitted	Reason	Explanation	
Marketing and labeling					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 417: Marketing and Labeling 2016					
417-1 Requirements for product and service information and labeling	→ Product Stewardship				
417-2 Incidents of non-compliance concerning product and service information and labeling	→ Product Stewardship				→ KPMG CH
417-3 Incidents of non-compliance concerning marketing communications	→ Product Stewardship				→ KPMG CH
Customer privacy					
GRI 3: Material Topics 2021					
3-3 Management of material topics	→ Management approach				
GRI 418: Customer Privacy 2016					
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	→ Customer Relationships				→ KPMG CH

SUSTAINABILITY ACCOUNTING STANDARDS BOARD INDEX

The Sustainability Accounting Standards Board (SASB) provides 77 Industry Standards to guide the disclosure of financially material sustainability information. By publishing a SASB Index in alignment with the Chemicals Standard, Clariant reports for the second time on the predefined material topics and their associated metrics for the typical company in an industry.

Topic	Accounting Metric	Code	References to chapters and sections of Clariant's Integrated Reporting 2022	Comments or references to further publicly available information
Greenhouse Gas Emission	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	RT-CH-110a.1	→ Scope 1 & 2 emissions	0.65% of gross global Scope 1 emissions are covered under emissions-limiting regulations.
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	RT-CH-110a.2	→ Strategy	
Air Quality	Air emissions of the following pollutants: (1) NO _x (excluding N ₂ O), (2) SO _x , (3) volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)	RT-CH-120a.1	→ Table Nitrogen Oxides (NO _x), Sulfur Oxides (SO _x), and other Significant Air Emissions, → Reduction of Scope 1, 2, and 3 emissions, → Sustainability targets	No reporting of HAPs.
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable, (4) total self-generated energy	RT-CH-130a.1	→ Energy consumption	No reporting of total self-generated energy.
Water Management	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	RT-CH-140a.1	→ Water withdrawal and intake	
	Number of incidents of noncompliance associated with water quality permits, standards, and regulations	RT-CH-140a.2	→ Water risk management	
	Description of water management risks and discussion of strategies and practices to mitigate those risks	RT-CH-140a.3	→ Water risk management, → Wastewater management	
Hazardous Waste Management	Amount of hazardous waste generated, percentage recycled	RT-CH-150a.1	→ Table Waste by Type and Disposal Method	
Community Relations	Discussion of engagement processes to manage risks and opportunities associated with community interests	RT-CH-210a.1	→ Regulatory compliance → Supplier evaluation	
Workforce Health & Safety	(1) Total recordable incident rate (TRIR) and (2) fatality rate for (a) direct employees and (b) contract employees	RT-CH-320a.1	→ Table Occupational Accidents	
	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks	RT-CH-320a.2	→ Occupational Health and Safety programs and training → Hazard identification, risk assessment, and incident investigation	
Product Design for Use-phase Efficiency	Revenue from products designed for use-phase resource efficiency	RT-CH-410a.1		Revenue not reported.
Safety & Environmental Stewardship of Chemicals	(1) Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, (2) percentage of such products that have undergone a hazard assessment	RT-CH-410b.1		(1) Not reported (2) 100 %
	Discussion of strategy to (1) manage chemicals of concern and (2) develop alternatives with reduced human and/or environmental impact	RT-CH-410b.2	→ Portfolio Value Program	



Topic	Accounting Metric	Code	References to chapters and sections of Clariant's Integrated Reporting 2022	Comments or references to further publicly available information
Genetically Modified Organisms	Percentage of products by revenue that contain genetically modified organisms (GMOs)	RT-CH-410c.1	→ Genetically modified organisms	
Management of the Legal & Regulatory Environment	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	RT-CH-530a.1	→ Business Ethics and Compliance → Priorities 2022 → TCFD → 3. Financial risk management	
Operational Safety, Emergency Preparedness & Response	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	RT-CH-540a.1	→ Safety management system	
	Number of transport incidents	RT-CH-540a.2		In 2022, Clariant had 6 transport incidents.
Activity Metric	Production by reportable segment	RT-CH-000.A	→ Table Business Model → Business Area Care Chemicals → Business Area Catalysis → Business Area Natural Resources	

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES INDEX

Since January 2021, Clariant has been an official supporter of the Task Force on Climate-related Financial Disclosures (TCFD). The Reporting Hub 2022 features TCFD-related disclosures for the

second time. The TCFD framework makes it possible to systematically manage and report on the risks, mitigations, and governance resulting from the threats of a changing climate. The Task Force recommends four core elements: governance, strategy, risk management, and metrics and targets.

Recommendations	Recommended Disclosures	References to chapters and sections of Clariant's Integrated Reporting 2022	Comments or references to further publicly available information
Governance Disclose the organization's governance around climate-related risks and opportunities.	Describe the board's oversight of climate-related risks and opportunities.	→ Governance	→ CDP Climate Change – C1.1b
	Describe management's role in assessing and managing climate-related risks and opportunities.	→ Governance	→ CDP Climate Change – C1.2
Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	→ Strategy	→ CDP Climate Change – C2.1a → CDP Climate Change – C2.3 → CDP Climate Change – C2.3a → CDP Climate Change – C2.4 → CDP Climate Change – C2.4a
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	→ Strategy	→ CDP Climate Change – C2.3a → CDP Climate Change – C2.4a → CDP Climate Change – C3.1 → CDP Climate Change – C3.2b → CDP Climate Change – C3.3 → CDP Climate Change – C3.4
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2 °C or lower scenario.	→ Strategy	→ CDP Climate Change – C3.2 → CDP Climate Change – C3.2a → CDP Climate Change – C3.2b
	Describe the organization's processes for identifying and assessing climate-related risks.	→ Risk management	→ CDP Climate Change – C2.1 → CDP Climate Change – C2.2 → CDP Climate Change – C2.2a
Risk Management Disclose how the organization identifies, assesses, and manages climate-related risks.	Describe the organization's processes for managing climate-related risks.	→ Risk management → Table Climate-related Opportunities → Table Climate-related Risks	→ CDP Climate Change – C2.1 → CDP Climate Change – C2.2
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	→ Risk management	→ CDP Climate Change – C2.1 → CDP Climate Change – C2.2
	Describe the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	→ Metrics and targets → New sustainability targets	→ CDP Climate Change – C4.2 → CDP Climate Change – C4.2a → CDP Climate Change – C4.2b → CDP Climate Change – C9.1
Metrics and Targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	→ Metrics and targets → Reduction of Scope 1, 2, and 3 emissions	→ CDP Climate Change – C6.1 → CDP Climate Change – C6.3 → CDP Climate Change – C6.5 → CDP Climate Change – C6.5a
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	→ Metrics and targets → New sustainability targets → Reduction of Scope 1, 2, and 3 emissions	→ CDP Climate Change – C4.1 → CDP Climate Change – C4.1a → CDP Climate Change – C4.1b → CDP Climate Change – C4.2 → CDP Climate Change – C4.2a → CDP Climate Change – C4.2b

UNITED NATIONS GLOBAL COMPACT INDEX

Clariant has been a member of the United Nations Global Compact (UNGC) since 2013 and reports on its contribution to the ten principles of the Global Compact in this Communication on Progress (COP).

Topic	Principles	References to chapters and sections of Clariant's Integrated Reporting 2022
Human Rights	1: Businesses should support and respect the protection of internationally proclaimed human rights; and	→ Human and Labor Rights → Supply chain policy → Bio-Based Economy
	2: make sure that they are not complicit in human rights abuses.	→ Policies and guidelines
Labor	3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	→ Contract labor
	4: the elimination of all forms of forced and compulsory labor;	→ Child, forced, or compulsory labor
	5: the effective abolition of child labor; and	→ Child, forced, or compulsory labor
	6: the elimination of discrimination in respect of employment and occupation.	→ Diversity, Equity, and Inclusion → Management approach
Environment	7: Businesses should support a precautionary approach to environmental challenges;	→ Management approach → Sustainability targets
	8: undertake initiatives to promote greater environmental responsibility; and	→ Corporate programs of resource efficiency and environmental protection
	9: encourage the development and diffusion of environmentally friendly technologies.	→ Bio-Based Economy → Circular Economy → Product Stewardship
Anti-Corruption	10: Businesses should work against corruption in all its forms, including extortion and bribery.	→ Business Ethics and Compliance



Independent limited assurance report on selected quantitative and qualitative Sustainability Information of Clariant AG

To the Board of Directors of Clariant AG

We have undertaken a limited assurance engagement on Clariant AG's (hereinafter "Clariant") following selected quantitative and qualitative Sustainability Information published in the "Review on Performance, People and Planet" section of Clariant's Integrated Report 2022 for the financial year from the 1st of January 2022 to the 31st of December 2022 (hereinafter "Sustainability Information"):

- Classification of 2022 sales indicators on page 10
- Integrity line indicators on page 18
- Communication and training on anti-corruption policies and procedures indicators on page 19
- Production sites and facilities indicators on page 20
- Raw material procurement indicators on page 20
- Percentage of suppliers assessed via Ecovadis indicator on page 21
- Negative environmental and social impacts in the supply chain indicators on page 22
- Innovation and technological advances indicators on page 25
- Sustainability portfolio classification on page 13
- People overview indicators on page 35
- Average hours of training per year per employee indicators on page 37
- Percentage of employees receiving regular performance and career development indicators on page 38
- New employee hires and employee turnover indicators on page 41
- Proportion of senior management hired from the local community indicator on page 42
- Parental leave indicators on page 42
- Diversity of governance bodies and employees indicators on page 45
- Number of incidents of discrimination indicator on page 45
- Number of employees by age group indicators on page 45
- Management functions indicators on page 46
- Breakdown of employees per nationality indicators on page 46
- FTEs by region indicators on page 47
- Work-related injuries indicators on page 49
- Occupational accidents indicators on page 49
- Employees covered by an occupational health and safety management system indicators on page 51
- Occupational accidents by region indicators on page 51
- Occupational accidents of contractors indicators on page 51
- Planet overview indicators on page 58
- Energy consumption indicators on page 62
- Water withdrawal and intake indicators on page 62
- Water discharge indicators on page 63
- Waste by type and disposal method indicators on page 64
- Safety management indicators on page 65
- Emissions indicators on page 67
- Nitrogen Oxides (NOx), Sulfur Oxides (SOx) and other significant air emissions indicators on page 68
- Indirect (Scope 3) GHG emissions indicators on page 69
- Materials used by weight or volume indicators on page 77

Our assurance engagement does not extend to information in respect of earlier periods or to any other information included in Clariant's Integrated Report 2022 or any other Report, including any images, audio files or embedded videos.

Our Limited Assurance Conclusion

Based on the procedures we have performed as described under the '*Summary of the work we performed as the basis for our assurance conclusion*' and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Sustainability Information in Clariant's Integrated Report 2022 for the financial year from the 1st of January 2022 to the 31st of December 2022 is not prepared, in all material respects, in accordance with the Global Reporting Initiative (GRI) Standards and Clariant's own reporting criteria as described in the "Review on Performance, People and Planet" section of Clariant's Integrated Report 2022.

We do not express an assurance conclusion on information in respect of earlier periods or to any other information included in Clariant's Integrated Report 2022 or any other Report, including any images, audio files or embedded videos.



Understanding how Clariant AG has Prepared the Sustainability Information

The GRI Standards and the criteria described and summarized in the “Review on Performance, People and Planet” section of Clariant’s Integrated Report 2022 have been used as criteria references for the Sustainability Information. Consequently, the Sustainability Information needs to be read and understood together with these standards and criteria.

Inherent Limitations in Preparing the Sustainability Information

Due to the inherent limitations of any internal control structure, it is possible that errors or irregularities may occur in disclosures of the Sustainability Information and not be detected. Our engagement is not designed to detect all internal control weaknesses in the preparation of the Sustainability Information because the engagement was not performed on a continuous basis throughout the period and the audit procedures performed were on a test basis.

Clariant’s Responsibilities

The Board of Directors of Clariant is responsible for:

- Selecting or establishing suitable criteria for preparing the Sustainability Information, taking into account applicable law and regulations related to reporting the Sustainability Information;
- The preparation of the Sustainability Information in accordance with the criteria (GRI and the criteria described and summarized in the “Review on Performance, People and Planet” section of Clariant’s Integrated Report 2022); and

- Designing, implementing and maintaining internal control over information relevant to the preparation of the Sustainability Information that is free from material misstatement, whether due to fraud or error.

Our Responsibilities

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the Sustainability Information is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our independent conclusion to the Board of Directors of Clariant.

As we are engaged to form an independent conclusion on the Sustainability Information as prepared by the Board of Directors we are not permitted to be involved in the preparation of the Sustainability Information as doing so may compromise our independence.

Professional Standards Applied

We performed a limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) *Assurance Engagements other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the *International Code of Ethics for Professional Accountants (including International Independence Standards)* issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior.

Our firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Our work was carried out by an independent and multidisciplinary team including assurance practitioners and sustainability experts. We remain solely responsible for our assurance conclusion.

Summary of the Work we Performed as the Basis for our Assurance Conclusion

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Sustainability Information is likely to arise. The procedures we performed were based on our professional judgment. Carrying out our limited assurance engagement on the Sustainability Information included, among others:

- Assessment of the design and implementation of systems, processes and internal controls for determining, processing and monitoring sustainability performance data, including the consolidation of data;



- Inquiries of employees responsible for the determination and consolidation as well as the implementation of internal control procedures regarding the selected disclosures;
- Inspection of selected internal and external documents to determine whether quantitative and qualitative information is supported by sufficient evidence and presented in an accurate and balanced manner;
- Assessment of the data collection, validation and reporting processes as well as the reliability of the

reported data on a test basis and through testing of selected calculations;

- Analytical assessment of the data and trends of the quantitative disclosures included in the scope of the limited assurance engagement;
- Assessment of the consistency of the disclosures applicable to Clariant with the other disclosures and key figures and of the overall presentation of the disclosures through critical reading of Clariant's Integrated Report 2022.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

KPMG AG

Silvan Jurt
Licensed audit expert

Cyrill Kaufmann
Licensed audit expert

Zurich, 01 March 2023



Publication Details

Publisher

Clariant International Ltd, MuttENZ

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© 2023 Clariant International Ltd, Rothausstrasse 61,
4132 MuttENZ, Switzerland

Integrated Reporting Concept and Editor

Kirchhoff Consult AG, Hamburg

Visual Concept and Online Design

Kirchhoff Consult AG, Hamburg

Technical Realization

Kirchhoff Consult AG, Hamburg

MDD Management Digital Data AG, Zurich

Note about forward-looking statements

This report contains forward-looking statements based on current assumptions and projections made by management. Such statements are subject to known and unknown risks, uncertainties, and other factors which may cause the actual results and performance of Clariant International Ltd to differ from those expressed in, implied, or projected by the forward-looking information and statements. The information published in this report is provided by Clariant International Ltd and corresponds to the status as of the date of publication of this report.

→ [Glossary](#)