BACKGROUND PAPER

VALUE CHAIN RESPONSIBILITY

LAST UPDATE: SEPTEMBER 2024

LANXESS
Energizing Chemistry

INTRODUCTION

Responsible, value-based and reliable action is our “license to operate”. In an increasingly volatile political and economic environment where the objectives and ambitions of different stakeholder groups occasionally stand at odds with each other, these principles are more important than ever. As a global specialty chemicals company, we embrace our corporate responsibility and act reliably. We have developed a clear strategy, implemented guidelines and set ourselves ambitious targets to achieve long-term success and added value for the company. This includes complying with safety, environmental and social standards both at our own locations around the world and beyond our company boundaries – throughout the entire value chain. We expect all of our employees and our partner companies to act safely, sustainably and responsibly at all times.

In this paper, we describe our expectations of responsible action throughout our value chains and the management approaches associated with this. We also explain our expectations and goals in detail as well as the progress we have made in individual key areas in the following publications:

- LANXESS Corporate Policy
- LANXESS Background Paper Climate
- LANXESS Background Paper Water
- LANXESS Background Paper Working at LANXESS

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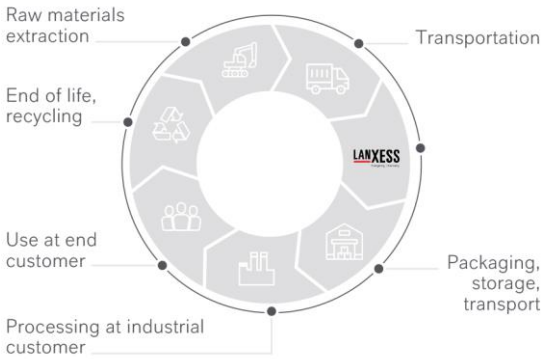
VALUE CHAIN RESPONSIBILITY

We are committed to running our business responsibly and sustainably. This holistic commitment extends to all levels of our value chains and covers everything from raw material extraction to the use of the product by the industrial customer or consumer. Our global procurement is structured with a focus on sustainability and places social, environmental and economic demands on our suppliers and partners. We produce chemical intermediates, additives, specialty chemicals and plastics at safe and sustainable sites. Production, packaging, storage and transport all take sustainability aspects into account. We sell our products almost exclusively to industrial customers on a business-to-business (B2B) basis. Our customers – or our customers' customers – make products for the consumer using our precursors.

Value Creation Cycle



We are committed to the United Nations' Sustainable Development Goals and observe various internationally recognized principles and guidelines such as the UN Global Compact and the Responsible Care® Charter and integrate these into our business operations.

Accordingly, we are committed to avoid risks for humans and the environment across all phases of the product lifecycle through safe procurement, manufacturing, storage, logistics, use and disposal and to ensure that our products and their production are sustainable. These are safeguarded by our values and governance structures.

Info box: Where we are involved

- Since 2006: Member of the Responsible Care® initiative by the German Chemicals Industry Association
- Since 2011: Member of the UN Global Compact
- Since 2011: Member of the Together for Sustainability (TfS) initiative (part of the founding team)
- Since 2020: Member of the World Business Council for Sustainable Development

Further information on our commitment

Our centrally organized management system provides the required global structures in all business processes and sets out principles of action. Through regular internal and external audits, we ensure that we are acting in accordance with uniform standards in terms of quality, environmental protection and safety globally. Our principles for responsible action and sustainable development are embedded in our Corporate Policy. A LANXESS Code of Conduct, which is applicable throughout the Group, requires all employees to behave lawfully and with integrity. To implement our voluntary commitments and legal regulations in our business operations, we employ Group and country directives, standards, instructions and process descriptions that set out specific rules and regulations and that are binding for all employees.

LANXESS Corporate Policy

LANXESS Code of Conduct

1. CIRCULAR AND SUSTAINABLE SOURCING

We strive to promote sustainability, increase transparency throughout our supply chains, and thereby minimize procurement risks. We act sustainably and responsibly when procuring our goods and services. We expect our suppliers to maintain socially, environmentally and economically sustainable business practices. To continually improve the sustainability performance of our suppliers and, in turn, conditions in global supply chains, we draw on extensive analyses and valuation methods and work together with our suppliers and relevant stakeholders (for example using cloud solutions such as SAP Ariba).

Responsibility throughout supply chains

Our procurement activities cover materials, services and technical goods that we need for production. These include raw materials, energy, commercial goods, packaging, assets and freight as well as site services. Our Global Procurement & Logistics Group function, the head of which reports directly to the Board of Management, is responsible for procurement. The Group function issues corresponding guidelines and initiates measures that ensure sustainable business – also in collaboration with our suppliers.

LANXESS strives to ensure that all purchased goods and services and their procurement process meet statutory requirements and relevant regulations. The global procurement guideline "Procurement of Goods and Services in the LANXESS Group," which applies to the entire Group, defines our employees' conduct when dealing with supply companies and their employees.

We have specified standardized workflows in process descriptions. Group-wide procurement management ensures not only that we remain competitive in the long term but also that we take corporate responsibility throughout global supply chains. The main priorities here are to protect the environment, conserve resources, prevent compliance breaches and comply with labor standards and human rights.

For example, our procurement team is also responsible for assessing whether certain materials could be replaced by more environmentally friendly alternatives. We also underscore our commitment to respecting human rights in our supply chains by signing up to the principles of the Universal Declaration of Human Rights and the UK Modern Slavery Act, which requires detailed information on human rights risks in global supply chains.

LANXESS Position on Human Rights

We select our suppliers based on whether they meet high environmental and social responsibility standards, and obtain information from our business partners about the safety and sustainability of the raw materials purchased. Our "Business Partner Code of Conduct" requires our suppliers to comply with all national and other applicable laws and regulations for environmental protection, health and safety at work and with regard to labor and recruitment practices. They should also use (or introduce in the near future) corresponding management systems to ensure that they comply with our requirements and identify and monitor risks. In order to work with us, they must accept our Business Partner Code of Conduct or equivalent rules and use a management system within the meaning of the UN Global Compact.

The "ProTrain" training program informs our strategic buyers, among other things, about our Business Partner Code of Conduct.

Global Procurement & Logistics monitors sustainability risks at our suppliers and ensures compliance with the LANXESS Business Partner Code of Conduct. As well as the supplier information questionnaire, we also currently use a detailed sustainability risk analysis as an additional check. For this purpose, we are introducing a Group-wide IT system that includes a strategic assessment of our suppliers' economic, regulatory, environmental and social performance in order to identify potential risks at an early stage. Based on more than 600,000 data sources, the tool prepares individual supplier risk profiles. By the end of 2021, we had integrated over 7,000 suppliers into the risk system and are continuing to work on adding additional suppliers.

Our supplier screening is beside the data just mentioned also direct based on detailed TfS-reports. So the TfS sustainability assessment is incorporated into our strategy process, which must be applied to every contract negotiation or renewal with a purchasing volume of more than €5 million. This is known as XCORE. The TfS assessments include environmental, scoial, governance as well as business relevant aspects. The methodology for supplier screening includes country-specific, sector-specific as well as commodity specific risks.

We expect our suppliers to inform us immediately of any violations of the law or the Code of Conduct. Through our "speak up" system, there are various ways employees and external parties can report potential violations to the compliance organization. LANXESS reserves the right to monitor compliance with the Code of Conduct or verify this using independent third parties at any time and, in the event of a violation, to terminate the business relationship. We last terminated collaboration with suppliers because of sustainability shortcomings in 2018.

Code of Conduct for Business Partners

Together for Sustainability

The global Together for Sustainability (TfS) initiative, which we co-founded, has established itself in the global chemicals industry as the sector standard for sustainable supply chains and plays a major role for us when it comes to designing and refining responsible procurement processes. The TfS initiative reviews and promotes suppliers' sustainability performance through TfS assessments, corporate social responsibility (CSR) ratings, which are carried out by EcoVadis, and TfS audits, which are performed by independent 3rd party audit firms.

EcoVadis issues sustainability ratings and supplier scorecards that are shared with all TfS members. The central supplier CSR rating includes criteria relating to the environment, labor and human rights, ethics and sustainable procurement. The rating significantly reduces the workload and increases efficiency for all member companies. Our suppliers' average EcoVadis sustainability assessment of 54.4/100 points is above the EcoVadis average of 45.7/100 points. As a TfS member, LANXESS itself was evaluated by EcoVadis in 2023 and received a performance score of 78/100, putting it in the "Platinum level" category, i. e. among the top in the industry.

The TfS audits review criteria in the areas of management, environment, health, safety, labor and human rights and corporate governance. If the TfS audits detect anomalies, the suppliers develop corrective measures and implementation of these is re-reviewed by the auditor within 12 months in the case of important or critical findings. In addition, training for company's buyers and/or internal stakeholders are supported via TfS academy (https://www.tfs-initiative.com/tfs-academy). The TfS Academy provides hundreds of multilingual training modules to Together for sustainability (TfS) members and their suppliers across all aspects of sustainability, procurement, Assessment, Audit and Corrective Action Plan. Via this was information and trainings on company's supplier ESG program, process and requirements are delivered and suppliers are supportet on implementation of Corrective Action Plans. Further these trainings deliver in-depth technical support programs to build capacity and ESG performance.

Suppliers are excluded from contracting if they cannot achieve minimum ESG requirements. In the ESG factsheet you can find the "Number of suppliers with whom the business relationship was terminated as a results of the findings". For 2023, zero supplier were excluded due to ESG requirements.We last terminated collaboration with suppliers because of sustainability shortcomings in 2018.

Further information on Together for Sustainability

Conflict minerals

As of today, our products and raw materials do not contain any 3TG (tin, tantalum, tungsten and gold) from conflict regions. We undertake to obtain and use raw materials only from certified, conflict-free sources (see position on human rights). LANXESS recognizes the potential risk that conflict minerals could be used along our value chains. In light of this, we regularly check our value chains for conflict minerals and purchase minerals such as mica only from conflict-free, certified sources.

Detailed Scores of Our Suppliers at EcoVadis
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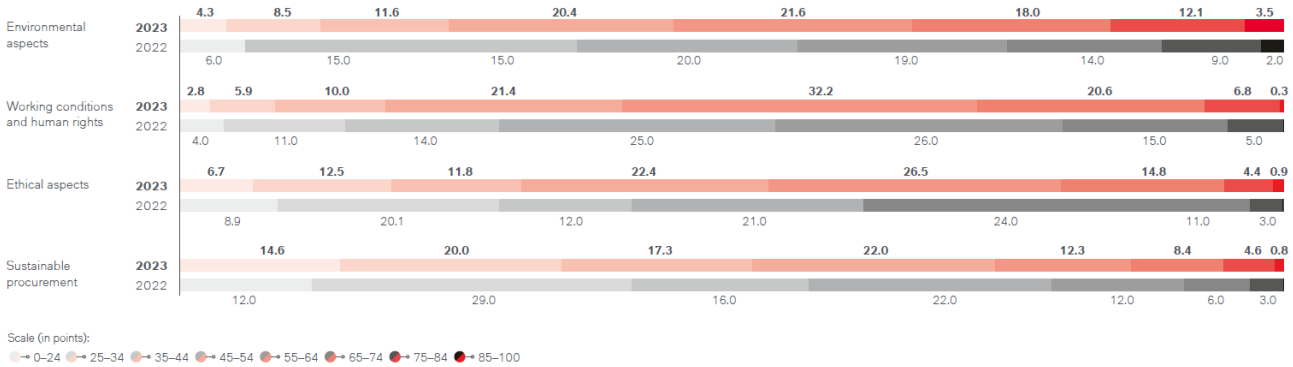


2. SAFE AND SUSTAINABLE SITES

LANXESS aims to produce only at safe, sustainable and competitive chemical sites. Our success here is based on ongoing process improvements, investment and a corporate culture that places the highest priority on people's health and safety.

High-performance management system

As part of our sustainability committee structure, the Health, Safety & Environment (HSE) sub-committee sets high health, safety and environmental standards and ensures a shared global understanding of management principles in these areas. With our HSE committee, the topic of occupational safety is anchored at the Board of Management level and at all management levels. Further responsibility for developing and verifying compliance with global guidelines for HSE lies with our Production, Technology, Safety & Environment (PTSE) Group function.

Further information on our committees and functions

Identifying safety risks at our locations and analyzing and evaluating these is part of our Group-wide risk management system. Globally, we base our actions on the international standards ISO 9001 and ISO 14001 for quality and environmental management and, in Germany and Belgium on ISO 50001 for energy management. We meet the requirements for occupational health and safety management in standard ISO 45001 through German legislation and the requirements of our integrated management system. As of December 31, 2023 our matrix certificate covers 36 certifiable companies with a total of 74 sites in 21 countries.
Based on the number of employees, this corresponds to a coverage rate of 90% for our matrix certificate (excluding the new sites acquired in 2021 and 2022: over 90%). Due to the changes in our site portfolio in recent years, there currently still are a few additional individual site certificates and one regional certificate, which will also be transferred to our matrix certificate in the future. Overall, 97% (over 98% excluding the sites acquired in 2022) of our sites held an ISO 14001 certificate as of the balance sheet date.

2025 target: Integration of all current sites into the global matrix certificate (ISO 9001 and ISO 14001)

Experts review and monitor the implementation of LANXESS guidelines and local regulations and compliance with our global standards for occupational health and safety on-site. For this, we regularly carry out HSE compliance checks. The frequency of the audit depends on the risk potential of the facility and the result of the previous HSE compliance check. A higher-risk facility is reviewed at least every three years. In 2021, a total of 35 production facilities were examined in the context of HSE compliance checks.

To record key data on safety and environmental protection systematically worldwide, we use an electronic data-entry system that is continuously optimized. This enables us to calculate a wide range of sustainability data for each business unit and site worldwide. For example, all waste and emissions generated by our production are measured and monitored. All relevant sustainability key figures in these areas are published in the non-financial Group report and our ESG Data Factsheet. This data provides a basis for strategic decisions and internal and external reporting.

Non-financial Group report

ESG Data Factsheet

We use an externally certified electronic reporting system to record accidents and events worldwide in line with uniform regulations. Accidents are classified on the basis of Occupational Health and Safety Assessment Series (OHSAS) criteria. Near-accidents, injuries, transportation accidents, environmental incidents, instances of damage and security incidents such as theft are documented. After any damage, we conduct a systematic investigation and establish measures to prevent a similar incident in the future.

Occupational health and safety

As a company in the chemicals industry, occupational health and safety is our top priority. Our internal "Occupational Health and Safety Management" Group guideline lays out global rules and processes and defines general conditions and responsibilities for safe working. Detailed work instructions provide additional detail for the guideline and, where necessary, provide country-specific information. They include both basic occupational health and safety requirements and particular specifications for organizing technical work at chemical production facilities. We expect our employees around the world to comply with health and safety guidelines at our locations. We focus on the following, equally important objectives:

1. Prevention of accidents
2. Prevention of impairment to health and work-related illness
3. Compliance with local legal requirements and global LANXESS standards

Our comprehensive occupational health and safety management is an integral part of our global management system. Risk assessments are carried out to identify and evaluate risks and derive suitable countermeasures.

Established practice: Risk assessment

Our risk assessment is the basis for all measures intended to ensure occupational health and safety and emergency management.

In the risk assessment, we list hazards that could occur at a company during operating activities and assess the negative impact on occupational health and safety. Based on this, targeted, effective protective measures are established to minimize risks. In line with the risk assessment, all employees receive sufficient and appropriate instruction. The effectiveness of the measures is regularly reviewed.

We are continuously working to further develop our safety culture. Accordingly, staff at our plants and locations receive regular health and safety training. This includes training in line with the hazard potential of the substance being handled. Employees responsible for HSEQ monitoring receive regular training and pass on their knowledge of product safety within the business units (train-the-trainer concept). In addition, we use standard operating procedures for all workplaces.

The lost time injury frequency rate (LTIFR) in 2023 was 0.6 and thus equal to the already low level of the previous year and thus within our medium-term target of < 1.0.

You can find further information about occupational health and safety in our Background Paper “Working at LANXESS”

Occupational health and safety in collaboration with partner companies

Safety also takes top priority when collaborating with contractors, suppliers and service providers. To ensure a shared understanding of occupational health and safety with our partner companies, we actively involve them in the company’s own safety culture. Our global guideline “Contractor Safety Management” outlines minimum safety management requirements for all contractors working at LANXESS locations.

For example, our contractual partners must demonstrate that they have a suitable safety management system in place. This includes disclosing their safety performance. Meeting our safety requirements, which we assess before working together, is a prerequisite for signing a framework agreement. Before starting work, the qualified partners each carry out an activity-related risk assessment to identify hazard potential and countermeasures. In addition, compliance with our health and safety regulations is an essential component of the work contracts.

Throughout the term of the contract, we monitor and document how our contractual partners meet the safety requirements. We conduct spot checks as to whether employees at our partner companies attended our compulsory safety training sessions. In addition, employees at third-party companies also receive company-specific safety briefings. On-site, sign-in procedures and access checks ensure that only authorized personnel from the partner companies can enter our premises.

Once a year, we assess the safety performance of the partner companies with which we have entered into framework agreements. Based on the results, they may be asked to make improvements. Workplace accidents at our contractors are documented in our Group-wide reporting system. We have not had any fatal accidents at our contractors since 2007.

Facility and process safety

To protect employees and the environment, it is important to us to ensure maximum safety, both when operating our production facilities and in our workflows, which we improve on an ongoing basis. Accordingly, we set ourselves the goal of steadily reducing incidents.

Ongoing target: Continuous reduction in incidents relating to facility and process safety

In line with the LANXESS guidelines for responsible action, environmental protection and safety, the global Group directive “Process and Plant Safety” establishes clear responsibilities and consistent practices for our employees to ensure that hazards are reduced to a minimum.
Assessments of all potential risks are carried out for each system and process. The risk is quantified and measures are defined for higher risks in order to reduce the risk or mitigate the effects. This includes process control technology, mechanical (e.g. safety valves) or operational (safety-critical operating instructions (standard operating procedures, SOPs)) measures. This risk assessment is carried out in a systematic process at least every 10 years.
Training courses for all SOPs are held at least every three years for company employees, while safety-critical SOPs are trained at least once a year. A special onboarding training program is required for new employees.
In addition, our Group directive “LANXESS Maintenance-, Plant Integrity- and Turnaround Management System” en-

sures that facility safety, integrity and availability is maintained at all production and logistics locations. All safety-relevant systems are inspected regularly. In addition, other equipment such as (pressure) vessels or pipe systems are also regularly inspected. The inspection can be carried out by the internal organization or by a certified third party (e.g. TÜV SÜD). At our plants, subject-matter experts discuss detailed measures for avoiding accidents and securing the facilities with on-site teams.

Our buildings and facilities have an inherently safe construction and safety infrastructure to contain and prevent incidents. At a minimum, they meet statutory requirements and are also individually expanded depending on the results of our hazard assessment. Safety equipment includes fire doors, warning systems, safety valves, emergency shut-off systems and containment systems. Hazard prevention plans for all employees can also be found in our buildings. Before beginning new or modified process steps, plant sections or apparatus, our employees are trained on how to operate them safely, how to maintain them and how to behave safely in a hazardous situation.

Internally, we assess the safety of our facilities and processes using the key performance indicator (KPI) Process Safety Incidents (PSI). This figure covers all incidents with either a minor or larger impact on people and the environment caused by a release of substances. Process safety incidents are weighted differently depending on their severity, as defined by the CEFIC (Conseil Européen des Fédérations de l'Industrie Chimique). All incidents are managed internally in our Group-wide incident management system "Intelex". To prevent these, every relevant event is analyzed and incident investigation carried out and also communicated internally. The analysis must be documented and the defined measures and action points must be tracked until completion. For transparency purposes, we report not only reportable incidents but also all relevant events. Overall, there were no process safety relevant incidents in 2023. We also want to continuing reducing the number of environmental incidents. In 2023, there were no cases with relevant environmental impact.

Ongoing target: Continuous reduction in environmental incidents

Emergency management at our locations

We are prepared for emergencies and can respond quickly thanks to our global standards for emergency response programs. These include a global emergency support process that covers all LANXESS customers, products, external stakeholders and locations and is available 24 hours a day, seven days a week.

The Group directive “Internal Reporting of Incident and Guideline for Incident Management at LANXESS” sets out safety-related emergency processes such as reporting channels, processes and responsibilities. In the case of incidents in the highest category, the Emergency Response Officer coordinates internal communication. This role is exercised by LANXESS employees in different capacities, and the employees in question receive appropriate training. The Corporate Communications Group function provides support in the form of a crisis communication team and coordinates external communication.

In the event of an incident, requirements for our emergency plans are set out in our “Emergency Preparedness and Response in LANXESS sites and facilities” standard. The emergency plans are part of the health and safety management system at LANXESS. These include guidelines on local legal requirements, mitigation measures, responsibilities and communication with employees and local stakeholders such as residents and authorities.

Established practice: Roles and responsibilities of the Emergency Response Officer

Emergency Response Officers are LANXESS employees who perform this role alongside their main job and are appropriately trained.

The Emergency Response Officer is notified of category 1 incidents. These are incidents that are expected to impact the general public or the surrounding area or that could result in significant injuries or damage to the environment. The Emergency Response Officer informs the body responsible at LANXESS Group headquarters and compiles all material information on the incident that is necessary to make decisions and take measures.

Depending on the size of the location, internal or external emergency teams are on call at our plants. In addition, each of our locations has at least one safety officer as required by law. This officer assists management with occupational health and safety, accident prevention and all aspects of health and safety. Our responsibility as the operator and, in turn, all related tasks, lie with the respective plant managers and are described in our internal Group directive “Plant Management at LANXESS”. Systematic safety appraisals, which involve trained production and maintenance personnel, are overseen by technical safety experts. We regularly review our emergency plans and train our employees in recurring practices for emergencies (e.g., safety day). We also coordinate our emergency plans with the local emergency organizations. At our three largest “Verbund” sites in Leverkusen, Dormagen and Krefeld-Uerdingen, we are supported by Currenta, the operator of the chemical park, which provides among other services the fire brigage and occupational health services.

Together with other companies in the chemicals industry, we also operate the Transport Accident Information and Emergency Response System which provides round-the-clock information about the handling of chemicals in a transport accident.

Sustainable production

We regard preservation of natural resources, by using raw materials as efficiently as possible and reducing or preventing emissions and waste, as an ongoing task in the context of our environmental responsibility and expertise.

We ensure that all of our locations are state of the art. In the case of company acquisitions, we analyze our new locations in detail and provide them with equipment that meets technological and environmental standards. A gap analysis prioritizes the order in which these measures are carried out. At our production sites, we constantly work to improve our production processes to ensure high standards. Our goal is to refine our production processes on an ongoing basis to remain competitive and achieve our climate and energy efficiency targets.

One way we measure our progress is by the number of innovation projects. In 2023, 84 projects (previous year: 83) were process related with the objective of reducing costs or increasing efficiency or capacity. Our total research and development costs in 2023 came to EUR 99 million (previous year: EUR 102 million). Increasing digitalization of our facilities and processes also supports our goal of constantly optimizing our production processes. More than two thirds of all plants now have digital tools to analyze process data. Our experts use the data collected to identify deviations and thus detect production irregularities at an early stage.

Climate protection is a core issue for us. We have set ourselves the ambitious goal of making direct emissions and purchased energy (Scope 1 and 2 emissions) climate neutral by 2040 and upstream and downstream supply chains (Scope 3 emissions) by 2050.

In addition, we developed a global water management and water stewardship program for sites where there is a risk to the water supply.

Background Paper Climate

Background Paper Water

Non-greenhouse gas emissions and air pollutants

Besides the greenhouse gas emissions, there are also other, non-greenhouse gas-related emissions known as air pollutants. These include particulate matter, nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOCs). These substances can harm human health and the biosphere, directly or indirectly. As a global chemicals company, we also take responsibility for air pollutants: We identify them at our locations, measure them regularly, have them audited externally and publish the figures.

Our Group-wide “Environmental Protection Management” guideline describes how we deal with these emissions. We have set clear goals to reduce emissions of volatile organic compounds.

2025 target: Reduction of emissions of non-methane volatile organic compounds (NMVOCs) by 25 % compared to base year 2015

We have already met our target of reducing these by more than 85 % and are continuing to work on decreasing the figure further. Another way of reducing air pollutants targets nitrogen oxides, which are removed by thermal air purification.

In addition, our climate protection projects such as the nitrous oxide reduction facility in Antwerp (Belgium) play a part in significant reducing emissions of both nitrous oxide (N_2O) and nitrogen oxides (NO_x).

Established practice: Thermal air purification

Where necessary, we use thermal air purification systems to safely remove exhaust air from chemical processes. In a furnace, all organic components of the exhaust air are converted into carbon dioxide and water at temperatures of 830 °C. Inorganic components such as chlorine, sulfur and bromine are then washed out in flue gas purification.

At present, we are preparing to record hazardous air pollutants in our HSE data entry system.

Waste management

Our waste management includes systematic management of material flows. We strive to avoid hazardous and non-hazardous waste as far as possible and to break the link between growth and waste production. Accordingly, increases in efficiency and yields to reduce waste, as well as measures to reduce and recycle waste materials and climate and energy efficiency measures, are other central aspects in further refining our production processes.

Our "Verbund" sites enable us to re-use many residues and by-products as a raw material directly in neighboring plants – both at our own and at other chemicals companies. This creates closed-loop materials cycles and avoids waste.

Established practice: Optimizing material flows

Ammonia water: The Liquid Purification Technologies business unit produces weak acidic cation exchange resins from acrylonitrile at the Leverkusen site. This process creates ammonia water. This is used as a raw material by the neighboring hydrate plant run by Advanced Industrial Intermediates instead of fresh ammonia.

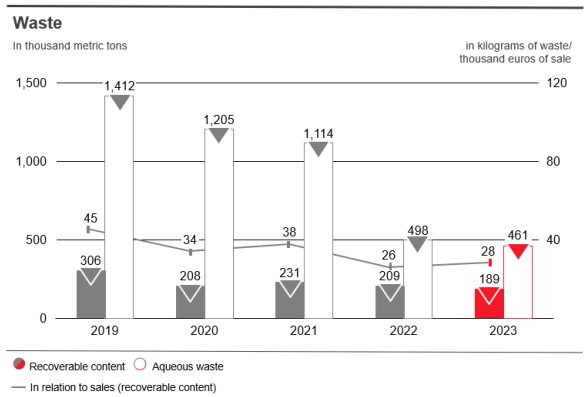
Hydrogen sulfide: In Antwerp, the Rhein Chemie business unit's 2-mercaptobenzothiazole plant creates hydrogen sulfide as a residual product. The Lubricant Additives business unit uses this for sulfur carrier production of extreme pressure additives. This does not only prevents residues, the business unit also reduces raw materials through this backward integration.

Glutaric acid: In Uerdingen, Advanced Industrial Intermediates passes on glutaric acid – a by-product of adipic acid production – to a partner for their production.

We regularly measure and review waste figures, have these verified by third parties and communicate them transparently (see ESG Data Factsheet).

The significant increase in the total amount of waste generated in year 2017 and 2018 is primarily attributable to the acquisition the Chemtura production sites in April 2017.

The acquisition driven increase in waste is predominantly driven by contaminated process water that is categorized as waste under local regulations. Since taking over the locations, we have been working on steadily reducing the quantity. Between 2018 and 2021, we reduced the volume by around 25 %.



Our waste management focuses on our non-aqueous waste.

2030 target: Reduce the total amount of waste[1] by 10% compared to the base year 2021

[1] Total LXS waste that is reported under incineration, landfilling, recycled or other forms of disposal

In addition to reducing the total amount of waste, we are also looking at our landfilled waste in particular. Landfilling waste stands in contrast to the transformation to a circular economy, which we actively support. We have therefore set ourselves the following goal.

2030 target: Reduce the total amount of landfilled waste by 50% compared to the base year 2021

Circular Economy

Our goal is to continually increase the external recycling rate for all waste flows in the sense of a circular economy. To achieve this, waste at LANXESS is collected separately and assigned to be either recycled or disposed of. As not all materials can be conventionally recycled (e. g. mechanical recycling or solvent reprocessing by way of distillation), we also consider ways to recycle our waste flows chemically. If this is not possible, we sell our waste flows as energy sources. In this way, we are continuously reducing the amount of waste that cannot be prevented, reclaimed or used as energy.

To verify correct disposal, as well as standard verification documentation we also carry out regular checks at our disposal partners.

In 2023, we reported approximately 189 kt of non-aqueous l waste for disposal worldwide, i. e. about 28 kg per EUR 1,000 in sales. This is liquid and solid, mostly chemical waste of which 28 % was recycled externally in 2023. By-product streams - that are used directly at the chemical park organization or are reused or recycled within our Group - are not accounted as waste (see “Established practice: Optimizing material flows”).

Our waste reporting has been more differentiated since 2021. We no longer present only the disposal methods for the total amount of our waste; we also report the share of hazardous and non-hazardous waste separately.

Recoverable content

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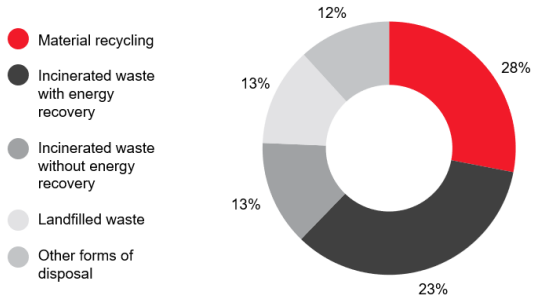

3. TRANSPORT, STORAGE AND PACKAGING

Transportation safety

Safety is our top priority when transporting our products, especially chemicals. When it comes to selecting our transportation solutions, safety is an important consideration, besides economic and environmental aspects. Our target is to avoid any incidents in the transport chain, and we have set a Group-wide goal to this end. There was no reportable transportation incident in fiscal year 2023.

Ongoing target: Continuous reduction in transportation incidents

Our Global Procurement & Logistics Group function monitors and reviews compliance with international, regional and local transport safety regulations.

Our “Dangerous Goods Management at LANXESS” and “Transport Safety Management at LANXESS" global guidelines set out our requirements for transportation safety. To put these regulations into practice, all LANXESS companies with production sites and/or logistics activities appointed a dangerous goods safety adviser and a transportation safety adviser, who also provide the management with expert advice.

The dangerous goods safety adviser and the transportation safety adviser receive regular further training and review all logistics improvement measures within the company, with the frequency of these checks depending on the risk potential. Own transport equipment, such as tank containers, is regularly checked at the intervals required by law. Responsible employees and employees involved in hazardous materials and transformation safety processes undergo frequent training. The dangerous goods safety adviser and the transportation safety adviser receive regular training and check all logistical improvement measures in-house, with the frequency of inspections depending on the risk potential. The company's own transport equipment, such as tank containers, is regularly inspected at the intervals prescribed by law. The responsible employees and employees involved in processes relevant to dangerous goods and transport safety also receive regular training.

The sustainability, safety and quality criteria of our transportation service providers are regularly reviewed, e. g. every three years. These assessments are carried out using the established Safety and Quality Assessment for Sustainability. Depending on the country, reviews can also be carried out by external organizations, including as part of TfS audits.

Safe transportation also includes load securing. To counter the deficiencies in securing general cargo in freight containers, the Production, Technology, Safety & Environment Group function has developed a load securing standard for LANXESS. After numerous field tests, it has proven successful. After the Corona-related interruption, this standard will be introduced at other sites and external service providers. In 2023, implementation continued at the Chardon, El Dorado and Kalama sites (all in the US) and at the external service providers Broekman (NL) and Nolden (D). In addition, the storage security system for temperature-controlled transportation of the product Velcorin in refrigerated containers was introduced.

Storage and packaging

Based on our global guideline “Storage at LANXESS,” we regularly assess the safety and environmental risks for storing raw materials and products with high hazard potential. We ensure that the warehouses we use are equipped in a way that ensures compliance with health, safety, environmental protection and quality requirements.

Our packaging is selected on the basis of legal regulations and taking account of sustainability and safety aspects. Across the Group, we are consistently working on optimizing our packaging’s thickness in order to conserve resources. We also make our packaging sustainable by switching from disposable to reusable packaging or using sustainable, recycled raw materials.

4. PRODUCT RESPONSIBILITY

The constant improvement of product safety is embedded as a core aspect of our Corporate Policy. We have pledged to minimize risks for humans and the environment across all phases of the product lifecycle through safe research, manufacturing, storage, logistics, use and disposal.

Global regulatory framework

Complying with global chemicals control regulations is an essential prerequisite for selling chemicals and chemical products throughout the entire value chain. We go to great effort to comprehensively ensure this, both for our own products and together with our partners – for example for our raw materials. Particularly in the case of consumer applications, we ensure that our products meet high national and international standards, certificates, and quality seals.

Our products are subject to strict local regulations with specific registration processes. The European Union, the United States of America, South Korea, Japan, Turkey, Taiwan and the United Kingdom have particularly high requirements for chemicals registration. We bring products to market only when their safety can be guaranteed in line with scientific and technological information.

Materials of which we produce more than one metric ton a year and import to the EU are registered, listed and evaluated in accordance with the REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulation.

In the course of REACH registration, we carry out a risk assessment. This consists of the following three steps:

1. Hazard assessment: intrinsic hazards are identified and communicated for all products worldwide for the preparation of safety data sheets
2. Exposure assessment
3. Risk characterization

For this, we provide information on substance identity and physical-chemical, ecological and toxicological information and assess the risks associated with manufacturing and using of the substances. At least twice a year, we hold workshops to inform our REACH officers of new legal requirements and raise awareness of the importance of product responsibility. The REACH requirements have been continuously updated since 2007 and research and studies have produced new findings, meaning that we regularly revise our registration dossiers.

In this context, we support the voluntary Action Plan of the European Chemical Industry Council CEFIC and have signed a corresponding declaration of intent. In this, we commit to review and – if necessary – update our REACH registration dossiers by 2026 at the latest.

2026 target: Inspection and, if necessary, optimization of the quality of all registration dossiers that were prepared in accordance with the REACH Regulation under the guidance of LANXESS

Further information on REACH at LANXESS

Product safety

With regard to the safety of our products, our internal standards exceed the legal requirements in many areas. For example, we prepare safety data sheets for non-hazardous substances and have a clear roadmap to making our product portfolio sustainable. We have described how we meet legal and voluntary product safety requirements and the safe use of our products in global guidelines and in our Group-wide management system.

Our PTSE Group function manages and reviews these on a regular basis. It ensures that laws and regulations are upheld and that preventative measures are prepared, put into practice and monitored. Our business units, together with our HSEQ organization, are responsible for ensuring product safety in their organizational units.

Scientific data and hazard labeling

Our "Product Safety Management at LANXESS" guideline stipulates how product responsibility is to be exercised throughout the Group and outlines collaboration between all of the parties involved. Our global product safety management ensures that all scientific, national, regional and international provisions are recognized, properly interpreted, implemented in full and within statutory deadlines and reviewed. To record new and modified products, we established a process that ensures that the relevant product safety data is documented in our central database. We pass this information as instructions for use and safety data sheets on to our customers.

Before we manufacture, import or sell a product, we ensure that applicable chemicals laws are observed. We ensure product safety by considering all scientific and technological information. Scientific information is based chiefly on physical-chemical, toxicological and environmental studies of individual materials included in the products, including findings from animal experiments. LANXESS is committed to avoid animal testing unless where legally required or where alternatives are not available to ensure adequate reliability and quality of data necessary for the safe use of our products. We follow the well accepted 3R concept to reduce, replace or refine animal testing wherever possible and also encourage commissioned contract laboratories or testing facilities to act in accordance. Our systematic approach to reduce or refine animal testing includes the evaluation and use of existing information on the substance or similar substances, the exchange of relevant data with other stakeholders and the application of alternative methods, like in silico (computational) or in vitro (cell based) methods. We invest in qualitative/quantitative structure-activity relationship (QSAR) models application and we support the work of Cefic on New Approach Methods (NAMs).

We classify and label hazardous products before they are used or brought to market. They are classified under hazardous substances legislation and labeled in line with applicable national and local legislation. Accordingly, we regularly adapt our electronic safety data system to take account of new features in GHS (Globally Harmonized System of Classification and Labeling of Chemicals) legislation in the different countries. We thus ensure that risks for humans and the environment are avoided in transport, storage, use and disposal.

Product safety in manufacturing

We develop substance-specific regulations to protect our employees, especially in production. These include systematic risk assessments. We regularly train our staff on the safety and hazard potential of the materials used and provide appropriate training documents. The training content comprises of for example new regulatory requirements and communicate information on GHS, safety data sheets, (eco) toxicology and the transportation of hazardous goods.

In order to review legal requirements and internal regulations, we conduct regular internal compliance checks. In addition, regular inspections and audits by regulatory authorities check whether requirements under chemicals legislation are met.

Safe use

The safe use of our products along both our own and the downstream value chains is an essential part of product responsibility at LANXESS. Together with our customers, we check the use and operating conditions of our products. Our business units help our direct customers – especially those who manufacture products for end consumers – to handle our materials safely and sustainably. For example, we offer training and advice to our customers and talk about the risks of handling our products.

We also provide safety information to our customers and partner companies throughout our supply chain. For example, we have more than 277,000 safety data sheets and expanded safety data sheets for all of our materials, including intermediates, which we document in 43 languages in our electronic safety data system. All safety data sheets are available to our customers and employees at all times. Most can also be accessed by the general public using the online product finder.

Our global hotline for product-related questions and complaints can be found on the safety data sheets and on our website. Customers can contact our sales representatives as a direct point of contact if they have any problems. These employees receive regular training. For the event that a product is recalled, we have described our return program processes in our Group-wide guideline "Control of Nonconforming Products".

Product surveillance

One way we evaluate and monitor the health, social and environmental impact of our products is through regular literature research. As part of this, we assess all relevant scientific, toxicological and environmental information on our materials on an ongoing basis. We also continually monitor our products and their use on the market and follow up on information about hazards so that these can be prevented. All information about any potential risk to human health or the environment of LANXESS products is recorded and evaluated by the PTSE HSEQ department. Our global risk management and product monitoring ensure that health and safety risks of our products and the causes of these are identified and evaluated at an early stage and adequately taken into consideration in strategic and operating decisions. We have implemented a comprehensive incident management system for incidents at our customers that establishes individual procedures to be followed and the relevant reporting channels. Reports that are relevant to our product monitoring are documented in the Group-wide incident management system "Intelex". Our global 24/7 emergency support also covers all customers, stakeholders, locations and products (see "Emergency management at our locations"). An on-duty emergency response officer monitors our emergency systems around the clock. To avoid a recurrence of incidents, they are analyzed and corrective measures are taken.

GLOSSARY

Business Units (BUs): The business units are responsible for our operating business and are grouped to the three segments Advanced Intermediates, Consumer Protection and Specialty Additives.

Conflict minerals: The four most frequently mined conflict minerals are cassiterite (for tin), wolframite (for tungsten), coltan (for tantalum) and gold ore or its derivatives. The term also covers other minerals that have been identified as helping finance a conflict in the Democratic Republic of Congo or a neighboring country.[1]

Dangerous Goods Safety Adviser: Specialist appointed in writing by the management who monitors and verifies compliance with hazardous goods rules and internal regulations and advises the management on issues related to hazardous materials.

EcoVadis: Issues sustainability ratings for companies. The rating helps track and improve a company's global environmental, social and ethical performance.[2]

Contractual Partner: Contractual partners of the company with which there is a permanent business relationship on the basis of a framework agreement.

German Chemical Industry Association (ger.: Verband der chemischen Industrie / VCI): The German Chemical Industry Association represents the economic and policy interests of chemicals and pharmaceuticals companies in Germany. As the voice of the sector's economic policy, the association discusses the best general conditions for Germany as an industrial location with other interest groups, governments, public authorities, the scientific community and non-governmental organizations.[3]

Group Function (GF): Our 13 Group functions support the operations of LANXESS, for example by managing processes, planning human resources, supporting the business units in day-to-day business and advancing digitalization.

Hazardous air pollutants: Impurities that cause serious illness. Industrial facilities are one of the most common sources of these.[4]

Health, Safety and Environment (HSE) sub-committee: Committee for safety, environment, energy and climate protection. The committee ensures consistent, high quality management, safety, environmental, energy and climate protection standards worldwide and develops a shared understanding of management principles.

Matrix certificate: Certification of a group of areas within a company using a sampling procedure. This requires a standardized management system that is used by all plants – on an individualized basis. In a matrix, a central matrix office is responsible for monitoring the management system in all areas of the group. The external review is performed according to a defined sampling procedure. The certificate refers to all areas of the group and is known as a matrix certificate.

New Approach Methods (NAMs): Collective term for a broad spectrum of animal-free approaches and methods for determining the toxicity of substances. These can be defined as in-viro, in-chemico or in-silico (computer-assisted) methods.

Nitrogen oxides (NO_x) without nitrous oxide (N_2O): Nitrogen oxides are what are known as reactive nitrogen compounds that can have a number of negative consequences for the environment. Together with volatile hydrocarbons, nitrogen oxides are responsible for ozone formation in the summer. Nitrogen oxides also contribute to particulate matter pollution.[5]

Non-methane volatile organic compounds: Non-methane volatile organic compounds (NMVOCs) are released largely as a result of the evaporation of solvents (in paints, varnishes and adhesives) and fuels, as well as incomplete combustion processes. Biogenic sources, especially forests, also contribute a portion that is not insignificant.[5]

Occupational Health and Safety Assessment Series (OHSAS): The OHSAS 18001 was an international occupational health and safety standard. The standard was replaced by ISO 45001.[6]

Particulate matter: Particulate matter, an airborne particle, refers to particles in the air that do not immediately sink to the ground but are instead suspended in the atmosphere.[5]

Responsible Care® Global Charter: Responsible Care is the global initiative of the chemicals industry to continually improve its environmental protection and health and safety performance. This goal is achieved not only by complying with the law and other regulations but also through cooperative and voluntary initiatives with government organizations and other stakeholders.[7]

Safety data sheet: A safety data sheet provides users with detailed information on a product so that all required measures can be taken to ensure safety at work and protect the environment. A safety data sheet is required by law for all hazardous materials and mixtures.

Together for Sustainability (TfS): Together for Sustainability is a joint initiative of chemicals companies established in 2011. It focuses on encouraging sustainability practices in the chemical industry supply chains.

Transport Accident Information and Emergency Response System (TUIS): LANXESS is one of the 130 TUIS member companies in the chemical industry. TUIS provides nation-wide assistance in the event of transportation accidents with chemical products, accidents in storage areas and in acute hazardous situations.[8]

Transportation Safety Adviser: Specialist appointed in writing by the management who monitors and verifies compliance with rules and internal regulations and advises the management on issues related to transportation safety.

UN Global Compact: The UN Global Compact is the world's biggest and most important initiative for responsible corporate governance. Based on ten universal principles, it pursues the vision of an inclusive and sustainable global economy for the benefit of all people, communities, and markets.[9]

World Business Council for Sustainable Development (WBCSD): The WBCSD is a global, CEO-led organization committed to accelerating the pace of change towards a more sustainable world. At the core of the network are its six work programs, for example relating to the environment and energy or the circular economy, aimed at achieving the United Nation's Sustainable Development Goals. Its approximately 200 member companies represent 19 million employees and USD 8.5 trillion in sales.[10]

[1] Quelle: RMI (Responsible Minerals Initiative)

[2] Quelle: EcoVadis

[3] Quelle: VCI: der VCI

[4] Quelle: Brunila, Grenano (o. J.)

[5] Quelle: Umweltbundesamt

[6] Quelle: TÜV Rheinland

[7] Quelle: VCI: Responsible Care Global Charter

[8] Quelle: VCI: TUIS (2022)

[9] Quelle: UN Global Compact

[10] Quelle: WBCSD

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