

Sustainability Report 2021 and 2022

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A Message from the Board of Directors

Our second sustainability report provides an overview of the contributions made by the Jowat Group to the United Nations' Sustainable Development Goals (SDGs) in the years 2021 and 2022.

In the reporting period, we dedicated intense efforts to all action areas of our sustainability program and made strides toward our ambitious sustainability goals. This progress is even more significant in light of developments beyond the influence of our entrepreneurial actions which had—and partially still have—a negative impact, particularly on our action area “More Resource-Efficient Production.” This includes explicitly the many consequences of Russia’s war of aggression against Ukraine.

We enshrined the sustainability principle in our corporate strategy to safeguard the success of the globally active Jowat Group for the future:

For Jowat, sustainability means responsible entrepreneurial activity aimed at coupling the company’s development and success with the sustainable interests of society and the environment for the long term. We see this as an opportunity and a future-oriented strategy to safeguard the long-term success of Jowat SE. Our actions are guided by the principle of sustainability and we are committed to a future-oriented development. With our entrepreneurial endeavors and our products, we want to make our contribution to the implementation of the United Nations’ Sustainable Development Goals.

Our commitment remains unchanged: We, the Board of Directors of Jowat SE, together with all employees, are committed to actively contributing to the goals we have set for a sustainable corporate development.

We are pleased and proud to publish our second sustainability report.

The Board of Directors of Jowat SE



Klaus Kullmann



Ralf Nitschke



Dr. Christian Terfloth

About this Report

We are publishing the second Sustainability Report of the Jowat Group for the fiscal years 2021 and 2022 to communicate our sustainability performance. In this publication, we examine our impact in regard to social, ecological and economic aspects and explain the concepts we have drawn up and what measures we have taken with respect to the matter. The purpose of this report is to inform our stakeholders—employees, customers and partners, shareholders, banks, suppliers, political players and government authorities, NGOs, neighbors, as well as everyone interested—of the actions we take to make our products, solutions and processes as well as our supply chains socially and ecologically compatible.

This Sustainability Report follows the framework of the Global Reporting Initiative (GRI).

This Sustainability Report covers the two fiscal years from January 1, 2021, to December 31, 2022, and, where possible, includes the comparative data from the previous year or years. Our sustainability reports are published in regular intervals. The next sustainability report scheduled to be published by Jowat SE will cover the fiscal years 2023 and 2024.

In the reporting period, Jowat with its Group headquarters in Detmold was operationally active in five major manufacturing locations (two in Germany, one each in Switzerland, the USA and Malaysia) as well as with 24 sales organizations in 22 countries. We want to take a holistic look at our sustainability performance and build a comprehensive reporting structure. The report refers primarily to our manufacturing locations. Any data that should differ from the specified reporting period is marked as such.



The House of Technology at our Group headquarters in Detmold

Numeric values indicated in the text and tables have been rounded. It is therefore possible that individual figures in the tables of this report do not add up to the exact sum specified and that percentages indicated do not exactly reflect the corresponding absolute values.

The editorial deadline for this Sustainability Report was August 23, 2023.



Company Portrait

The Jowat Group develops, manufactures and distributes adhesives for different industries all around the globe—and employs about 1,200 people. Apart from the production sites in Germany, the enterprise founded in 1919 has three further manufacturing locations: in Switzerland, in the USA and in Malaysia. A global sales structure with our own distribution companies and solution partners ensures local service with close customer contact.

Our Enterprise

As a manufacturer of adhesives for industrial applications, we have business partners in a wide variety of industrial fields. While we supply a complete range for the wood and furniture industry, we develop special solutions for other industries. We distribute our products in over 100 countries and provide service and advice in different languages.

The Jowat Group is globally active in the development, production and distribution of adhesives and supplies customers in different industries.

In the reporting period, Jowat with its Group headquarters in Detmold was operationally active in five major manufacturing locations (two in Germany, one each in Switzerland, the USA and Malaysia) as well as with 24 sales organizations in 22 countries. Group revenue for the year 2022 was €444 million. We are pursuing a triad strategy and have been present for many decades in three economic regions—Europe, America and Asia-Pacific—and have a tight network of distribution partners.

Products, Markets and Employees

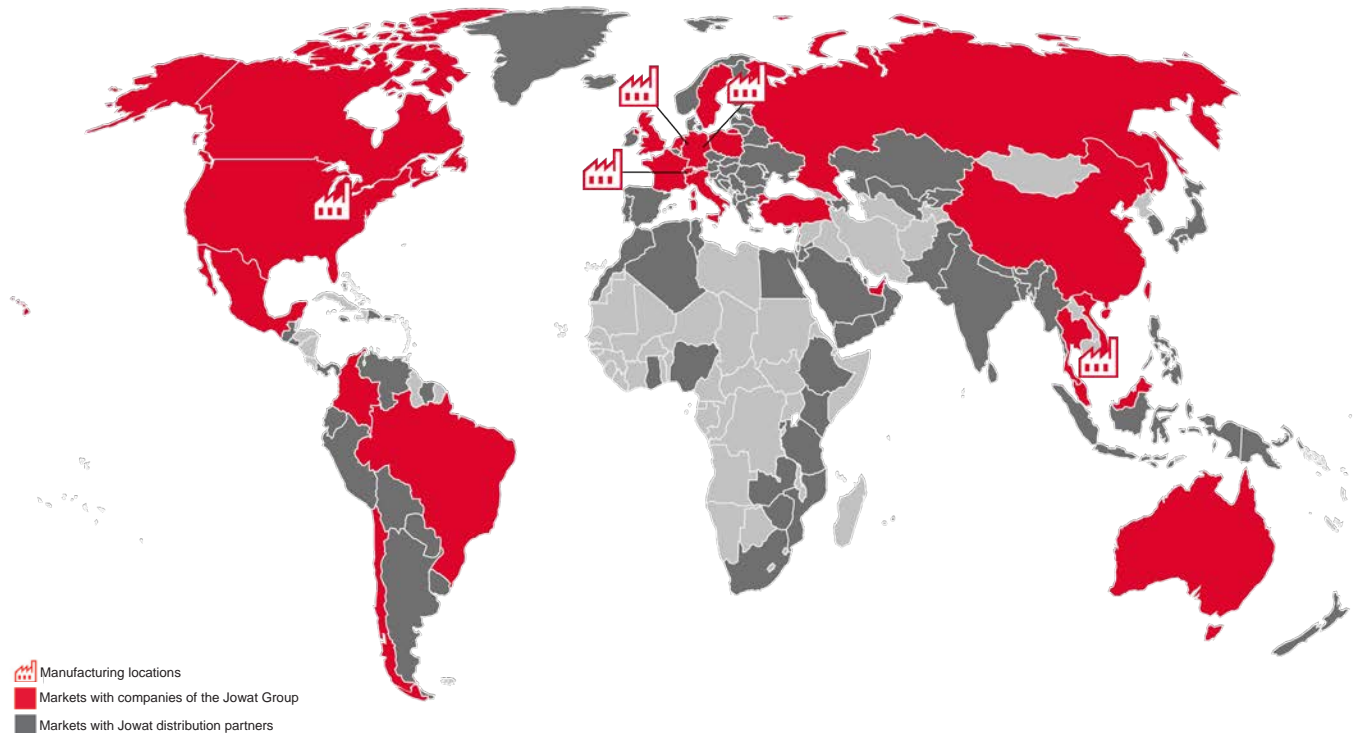
Our competence enables us to provide comprehensive solutions for the challenges of our adhesive processors. Our product portfolio comprises mostly dispersion, hot melt and solvent-based adhesives, which we supply to the wood and furniture industry, one of our key markets, or also for example to subsuppliers to the construction industry and growth markets such as the packaging industry. The benefits of our adhesives are also highly valued by companies in the automotive, textile and electrical industry.

We support the development of these industries around the world, focusing on solutions with a high potential for innovation and rationalization.

We are prepared to meet the individual requirements of our customers and can therefore often provide specially tailored solutions faster than many of our competitors.

About 1,200 employees around the globe are working to make that possible, over 1,000 of whom are employed at our manufacturing locations. 96.1% (2022) have a permanent employment contract and 90.6% (2022) work full time. Female representation at the manufacturing locations is 21.1% (2022).

Jowat is active in 5 manufacturing locations as well as with 24 sales organizations in 22 countries—and employs around 1,200 employees.



Employees by employment contract*

	Detmold and Elsterau (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Number of employees (total)	627 / 630	45 / 40	180 / 185	137 / 156	989 / 1011
Permanent employees	585 / 591	45 / 40	180 / 185	116 / 156	926 / 972
of whom female	122 / 131	15 / 13	33 / 33	36 / 32	206 / 209
of whom male	463 / 460	30 / 27	147 / 152	80 / 124	720 / 763
Temporary employees	42 / 39	0 / 0	0 / 0	21 / 0	63 / 39
of whom female	1 / 3	0 / 0	0 / 0	0 / 0	1 / 3
of whom male	41 / 36	0 / 0	0 / 0	21 / 0	62 / 36

* Data from the manufacturing locations

Full-time and part-time employees*

	Detmold and Elsterau (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Number of employees (total)	627 / 630	45 / 40	180 / 185	137 / 156	989 / 1011
Full-time employees	536 / 541	40 / 34	180 / 185	137 / 156	893 / 916
of whom female	84 / 88	11 / 9	33 / 33	36 / 32	164 / 162
of whom male	452 / 453	29 / 25	147 / 152	101 / 124	729 / 754
Part-time employees	91 / 89	5 / 6	0 / 0	0 / 0	96 / 95
of whom female	39 / 46	4 / 5	0 / 0	0 / 0	43 / 51
of whom male	52 / 43	1 / 1	0 / 0	0 / 0	53 / 44

* Data from the manufacturing locations

Sustainable Corporate Governance

Jowat SE is a European corporation (Societas Europaea). Its shareholders are two limited partnership companies (GmbH & Co. KGs), which are led by the two owner families Depenbrock and Frank. Jowat has therefore been a family enterprise for over 100 years. Jowat SE is operationally active (research & development, purchasing, production, sales & marketing) and responsible for the development of the Group's strategy. In addition, Jowat SE holds direct or indirect interests in the companies that are part of the Group and provides different types of services to those companies.

The management of the operative business lies with the Board of Directors. Their work and compliance with the company's Articles of Association is supported and verified by the Supervisory Board of Jowat SE within the framework of regular meetings and whenever necessary. The Supervisory Board is composed of a representative of each of the two founding families and four external members with renowned expertise in the fields of economics and adhesives.

Jowat has been a family enterprise for over 100 years.

Business Development, Equity and Funding

The Jowat Group is largely financed by a high equity ratio of around 50 percent. Financial institutions provide additional financing for Jowat SE and selected subsidiaries. Despite a very challenging environment (coronavirus pandemic, disrupted supply chains) in 2021 and, in addition, Russia's war of aggression against Ukraine in 2022, earnings before taxes were €36.6 million in 2021 and €22.3 million in 2022.



Bird's eye view of our headquarters in Detmold

€4.4 million were distributed to shareholders in the year 2021 and €3.5 million in the year 2022. Further economic indicators of the consolidated financial statement are published regularly in the German Federal Gazette (Bundesanzeiger).

Jowat enlists financial assistance only for research endeavors if they are also of public interest beyond the foreseeable and expectable revenue. In the reporting years, Jowat received around €0.2 million from the government for research endeavors. At the same time, an additional payment of €0.3 million is expected in Germany for the fiscal years 2021 and 2022 from the German Federal Research Grants Law (Bundesforschungszulagengesetz). The expenditures of the enterprise in the corresponding research endeavors far exceed those grants.

In Bandar Enstek (Malaysia) we made the surface of our roofs available for the construction of a photovoltaic system operated by the electricity supplier TNB. We purchase the solar power at a fixed rate and thereby also benefit from the government funding for solar energy in Malaysia.

Values and Guidelines

Jowat is distinguished not only by our products, but also by the values that are actively lived within the enterprise. These values are essential to our success and have been enshrined in our corporate culture and daily work via our [guidelines](#).

Our Values

- **Our Customers**
... are the most important factor in our day-to-day work. Their wishes and requirements are a paramount priority for us. Our experts develop tailor-made solutions for every challenge. Throughout the process, we provide a comprehensive advisory service and assistance as a matter of course.
- **Our Employees**
... are our greatest asset. Therefore, training and professional development are of utmost importance to us. We want to ensure that every last member of our team can offer the very best expertise to our customers.
- **Our Quality Awareness**
... is a continuous internal and external process of successful development. On our way to total quality management, the certification according to ISO 9001:2015 is an important step. For us, total quality management means optimizing internal processes, implementing measures for the prevention of errors, achieving first-class product quality, and delivering on time.

- **Our Environmental Responsibility**
... is aimed at long-term concepts and sustainability. It extends to the conservation of natural resources, use of environmentally safe production methods, prevention of emissions, and competent environmental information for our customers.
- **Our Potential for Innovation**
... enables us to develop new products for more streamlined, optimized and sustainable processes in the industries in which we are active.
- **Our Product Reliability**
... means for us a continuous optimization of our manufacturing processes, a permanent increase in the safety of our procedures and facilities, and safeguarding the availability of raw materials and machines.

- **Our Solution Partners**
... are the manufacturers of machines, materials and application equipment who serve customers in the same market segments as us. An intense exchange of ideas and experience in the fields of product development and application facilitates practical new solutions for the benefit of our joint customers.
- **Our Internationality**
... is something we live every day. Because: Global is our market and global is our strategy. This involves also sales activities and affiliates in all regions. By focusing on our strengths, we have made ourselves right at home in our markets around the world.



The "Best Managed Company" awards

Award-Winning Corporate Governance

In the 2022 fiscal year, Jowat SE received the "Best Managed Company" award for the third time in a row. The prize is awarded each year by Deloitte Private, Credit Suisse, the magazine Frankfurter Allgemeine Zeitung and the federation of German Industries (BDI) to companies of the German *Mittelstand* that have demonstrated a positive long-term economic development. Jowat convinced the jury with its innovative power, long-term strategy and strong corporate governance structures.

Management of Risks and Opportunities

How well our risks are managed is crucial to meeting our corporate goals. Risk management is therefore an integral part of our business processes and corporate decisions. We monitor and manage our risks using a range of control systems. With those systems, we systematically determine and assess the risks and opportunities and record the risk potentials in detailed weekly, monthly and quarterly reports. The Board of Directors and the Supervisory Board of Jowat SE are regularly briefed on the opportunities and the risks situation in the Group. The Supervisory Board, for instance, is provided with a Risk Management Report on a monthly basis.

Action plans have been developed and are available in the event of a raw material shortage or a production line failure. For instance, we source interchangeable raw materials from several suppliers. If production processes are disrupted in one location, the loss in output will be offset at least partially by other Jowat locations. This global flexibility enables us to maintain our delivery performance.

Action plans have been developed and are available in the event of a raw material shortage or a production line failure.

Risks of Climate Change

Our locations are subject to different legal requirements and exposed to varying risks due to climate change. In the European Union (EU), the Green Deal promotes the transition away from fossil fuels and will—if current manufacturing methods remain unchanged—lead to a significant increase in our energy costs. We are taking actions to reduce our CO₂ emissions in manufacturing, for instance by using alternatives to fossil energy sources or increasing the use of alternatives to fossil raw materials. Further information is provided in the chapter “Processes” starting on page 23. The opportunities lie in the growing use of biobased as well as recycled raw materials and in the optimization of adhesive consumption, which is the focus of research and development at Jowat. Further information on this topic is provided in the chapter “Products” starting on page 15.

According to current assessments, the location in High Point (North Carolina, USA) will be the first within the Jowat Group affected by the direct physical impact of climate change. The site is located in a region that could be increasingly exposed to storms or flooding in future. The present protection measures against tornados and flooding are in line with the current risk situation and will be adapted if necessary. The European locations and the location in Malaysia, however, are in regions where, based on current assessments, the risk of expected extreme weather events are lower.

Production Risks

As a manufacturing company, Jowat is exposed to the risks of production disruptions, quality problems and unexpected technical difficulties, for example blackouts or cyberattacks. These risks are effectively reduced by our quality management. Losses due to the downtime of production facilities are covered by business interruption insurances. In addition, all facilities are carefully maintained and employees attend training and development courses on an ongoing basis.

Our Contribution: Industry, Innovation and Infrastructure



Due to our business activities oriented on sustainability goals, we contribute to the UN sustainability goal no. 9 “Industry, Innovation and Infrastructure” (chapter “Sustainability at Jowat,” starting on page 12). By continuously prioritizing research and development, we achieve a more efficient use of raw materials and develop more environmentally compatible product technologies and manufacturing processes.



Sustainability at Jowat

We firmly believe that sustainability is a success factor. We take into account the ecological and social impact of our business activities and aim to improve it. For that purpose, we have defined clear goals in our sustainability program. Transparent reporting makes our progress visible.

How We Manage Sustainability

We assume responsibility for the ecological and social impact of our business activities. In our sustainability program, we have defined firm targets to be met by the year 2025. Thereby, we have been contributing since 2020 to the attainment of the UN Sustainable Development Goals (SDGs) relevant in our field. We are working on a number of factors for that purpose—from the selection of raw materials, to responsible purchasing practices as well as good and safe working conditions to a more resource-efficient production.

Responsibility for the sustainable orientation of the enterprise lies with the Board of Directors of Jowat SE. They are supported in the planning and operational implementation by the Sustainability Team, which is composed by members from different departments and reports directly to the Board of Directors. Here, we follow the Responsible Care® initiative of the chemical industry and the environmental protection guidelines of the German Adhesives Association (Industrieverband Klebstoffe e.V.—IVK).

Quality, environmental protection and energy efficiency are firmly enshrined corporate goals at Jowat. The corresponding guidelines are regularly evaluated within the framework of management reviews and adapted if necessary, and they are binding for all employees across all locations. They form the basis of our understanding of sustainability. The managers are responsible for permanently enshrining this understanding in the corporate culture.

To leave a world worth living in for future generations, we make our decisions subject to sustainability. For example, we actively include environment and climate protection aspects in the development of products, in the planning of new production facilities and in manufacturing.

Our Material Sustainability Topics

In 2020, we conducted a materiality analysis based on the 17 Sustainable Development Goals (SDGs) of the United Nations to determine the sustainability topics most important for Jowat.

The relevance of each SDG to Jowat as well as its impact and the possibility for Jowat to influence it were analyzed within the framework of an interactive workshop with the management of all relevant departments.

We assess the relevance from our internal perspective as well as from the point of view of our customers, the external group of stakeholders most important to us.

Following the analysis, we identified seven SDGs as most important for Jowat. These SDGs are presented together with our existing approaches and activities in this report.



With our sustainability program, we want to contribute to the 2030 Agenda

The Global Sustainability Goals

In autumn 2015, the United Nations adopted 17 global sustainability goals (SDGs) to be achieved by the year 2030. In addition to politics and society, private-sector companies are also called upon to make their contribution on this path toward a sustainable development. Jowat subscribes to this agenda and wants to make an active contribution towards these goals. We focus here on the results of our materiality analysis, i.e. the goals that we can have the greatest influence on achieving.

Our Reporting Topics

The SDGs defined as relevant provide the material topics for our sustainability reporting, and we have assigned the corresponding indicators of the Global Reporting Initiative (GRI) to them. Its standards form the globally dominating framework for reporting on sustainability. In addition, we are including further subordinate targets of the 17 SDGs with corresponding GRI indicators because they are relevant to our corporate development and indispensable for an appropriate level of transparency of our sustainability commitment. These SDG targets refer to the following topics: women's participation and opportunities for leadership (SDG target 5.5), increase the share of renewable energy (7.2), double the rate of improvement in energy efficiency (7.3), ensure equal opportunity and eliminate discrimination (10.3), as well as reduce corruption and bribery (16.5), and ensure access to information (16.10).



Good Health and Well-Being

As a manufacturer of chemical products, Jowat has a big impact on the health and well-being of its employees and customers. Therefore, SDG 3—Good Health and Well-Being—is closely linked with our core business and is accordingly of very high relevance to us. We are constantly working on reducing the release of chemicals to the air, water and soil, and preventing detrimental effects on humans and the environment.



Decent Work and Economic Growth

As a globally active group of companies, we employ people in many countries and source raw materials from various suppliers. Therefore, we want to make a contribution to SDG 8—Decent Work and Economic Growth. Business activities at Jowat are focused on the long-term value development, which also involves the safeguarding of workplaces. In addition, we take our human rights due diligence in the supply chain very seriously and are constantly implementing appropriate measures to ensure compliance.



Quality Education

A high level of education and qualification of our employees is important to us. Therefore, we consider SDG 4—Quality Education—of very high relevance. After all, this SDG incorporates overarching topics such as e.g. lifelong learning and securing skilled labor. In addition, training measures are necessary to share knowledge about environmentally compatible courses of action and to raise awareness of sustainability with our employees and our customers.



Industry, Innovation and Infrastructure

Since its foundation, the Jowat Group has been focusing on innovation, competitiveness and functioning business structures. For this reason, we classify SDG9—Industry, Innovation and Infrastructure—as highly relevant to us and our external stakeholders. Here, we aim for economic stability in accordance with dynamic processes and development opportunities.



Clean Water and Sanitation

Clean water plays a vital role in the value creation at Jowat—as raw material as well as cleaning agent. SDG 6—Clean Water and Sanitation—therefore plays an important role. In light of the water shortage around the globe, we consider our water and wastewater management to be an essential field of action to use water more efficiently and thereby to make a contribution to the conservation of this resource.



Responsible Consumption and Production

Jowat manufactures adhesives that are used in the worldwide production of a vast variety of finished products, such as furniture, clothes or packaging. Consequently, we consider SDG 12—Responsible Consumption and Production—to be of high relevance. Key action areas of the Group resulting from this are the sustainable procurement, the efficient use of raw materials and the conservation of resources. In addition, our high-quality adhesives contribute to the durability of a wide range of products (e.g. furniture).



Climate Action

Climate change is one of the greatest social challenges of our time. We, therefore, consider SDG 13—Climate Action—as highly relevant to Jowat. Climate protection is thus also part of our sustainability program and a focus of our actions in the field of environment.

Our Sustainability Goals

Based on the results of the materiality analysis, we developed a sustainability program in 2020 and derived four action areas from it:





- Products for tomorrow
- More resource-conserving manufacturing
- Responsible procurement practices and supply chain
- Healthy and satisfied employees

Representatives of the relevant areas in coordination with contact persons from the triad regions have developed specific sustainability goals for the above, which we want to achieve by the year 2025. In doing so, we take into consideration regulatory framework conditions as well as the results of an environment analysis. However, the decisive factor in determining the level of ambition was our own aspiration. We defined sets of measures to implement the goals and are working on successively integrating them into our ongoing processes. We measure our progress in achieving our sustainability goals using specific performance indicators that we will integrate into our reporting in the future.

Compliance as a Key Factor

The Jowat Group manages its business with responsibility and in accordance with the statutory requirements in effect in the countries of activity. In addition, we adhere to the rules of our Code of Conduct, which includes the principles for ethical and legal conduct. It is available online and accessible to all employees and at all times via our JOSY information system, and it is addressed, among other occasions, within the framework of the annual Start-Up Meetings.

Sustainability Program

Action area	Sustainability goal	Performance indicator
 Products for tomorrow	By the end of 2022, we are to develop an assessment system with sustainability criteria and assess our product development according to it. By 2025, 80 % of our product innovations are to meet these sustainability criteria in accordance with the assessment system.	Proportional share of the product innovations that meet sustainability criteria
	By 2021, we are to further develop our Green Adhesives product range. By 2025, we double the sales volume of the Green Adhesives product range.	Sales volume of Green Adhesives products
	In cooperation with our business partners we are to develop solutions that allow us to use at least 25% raw materials based on recycled resources, by 2025.	Number of solutions with at least 25% raw materials based on recycled resources
 More resource-conserving manufacturing	By 2025, we are to reduce waste in our production per manufactured metric ton of finished goods salable by 15% and thereby increase our material efficiency compared to 2021.	Production waste per manufactured and finished good salable
	By 2025, we are to reduce our energy consumption per metric ton of goods produced by 5% compared to 2021.	Energy consumption per metric ton of goods produced
 Responsible procurement practices and supply chain	By 2025, we are to reduce our Scope 2 emissions by 25% per metric ton of product compared to 2021.	Scope 2 emissions per metric ton of product
	By 2025, our suppliers (at least 80% of the purchased quantity) are to meet the sustainability criteria of our Code of Conduct.	Proportional share of suppliers who meet the sustainability criteria of the Code of Conduct
 Healthy and satisfied employees	We are to further improve the work-life balance by 2025.	Share of employees returning after parental leave
	By 2025, we are to reduce the number of working days lost due to accidents at work per employee compared to 2020. We want permanently zero fatalities.	Working days lost due to accidents at work

New employees at our manufacturing locations attend a Code of Conduct training as part of their induction. Since 2021, all employees in Germany and USA are additionally provided with access to the document and asked to acknowledge the Code once every year within the scope of our electronic training portal.

Ensuring Compliance

We maintain an electronic schedule of legal provisions at the Group headquarters, in which all statutory requirements relevant to us are collected and distributed to the employees responsible for the purpose of fulfillment. Observance of the legal requirements is monitored through safety-order-cleanliness (dubbed “SOS”) and protection-energy (dubbed “UE”) inspections, as well as through the annually conducted audits.

Reporting of Misconduct

Unethical or illegal behavior can be reported along our hierarchical structure. In addition, the Board of Director is available as a global point of contact for all matters.

Communication can be either directly in person, by phone, by e-mail, or anonymously via a complaint form on the website of Jowat. The e-mail generated by the domain is forwarded directly to the Board’s offices. Should any suspicious cases arise, they can be immediately evaluated and clarified by Internal Revision. A whistleblowing system has been introduced and linked to on our website.

Preventing Corruption

Corruption will not be tolerated at Jowat, because it undermines the functioning of the (social) market economy and creates losers on both sides. As an internationally active enterprise group from the German Mittelstand, this mission statement is very important to us. Our Code of Conduct also includes binding rules for the purpose of tackling corruption.

The market price situation is very transparent due to a market structure of our supply chains with a few, big suppliers. In our opinion, it is therefore highly unlikely that any advantages should be accepted or granted in procurement.

In the case of investments, we also excluded any advantages due to system requirements, such as recording in SAP, approvals by the Board of Directors and required comparative offers. Should we receive information about possible cases of corruption, they will be assessed by the Board of Directors and forwarded to the most competent department to clarify the situation. Depending on the type of information, this can be Environmental Management, HR Management, the Legal department, Finances and Controlling, or Internal Revision. The decision in each individual case is made by the Board of Directors. To date, no cases of corruption have come to the attention of the Jowat Group.

Dialog with Our Stakeholders

Due to our global economic activity, we have an impact on the lives of many people. We have a particular responsibility towards them and at the same time, they define the reputation of the Jowat Group.

Our customers are among our most important stakeholders, with whom we are regularly in personal contact via our participation at professional trade fairs and our biennial Jowat Symposium. We also publish a Customer Magazine once a year with news and background information on our innovative adhesive applications. Our employees are a further, very important group of stakeholders, who are informed of current developments in the enterprise via the internal “Jowat Times” newspaper.

Start-up meetings are held in all three triad regions and are attended by the Board of Directors and local managing directors. In addition, the global strategy event Jour Fixe regularly provides valuable information to employees in the departments relevant to sales and marketing. In addition, we cooperate closely with our suppliers and *solution partners*—companies that supply products which optimally complement our adhesives. We are also in close contact with shareholders, rating agencies and banks. Every year, we discuss the previous fiscal year with our banks and inform them of any news concerning our corporate strategy.

We want to be a responsible and welcome neighbors in the immediate surroundings of our locations and seek dialog with the general public as well as with our neighbors.

Apart from our legal duties and obligations under the ISO 14001, we make voluntary commitments, for instance with regard to noise pollution and emissions through weekly inspections of our premises and the surroundings.

Help Shape the Work of Trade Groups

As a member of the German Chemical Industry Association (Verband der Chemischen Industrie e.V.—VCI), whose work includes representing the political interest of the German chemical industry, Jowat has excellent connections in its field of business. In addition, we are a member of the Federation of German Industries (Bundesverband der Deutschen Industrie e.V.—BDI) and of the American Adhesive and Sealant Council (ASC). Senior executives at the Jowat Group are also exercising a shaping role in those associations through our board membership.

Developing Products for Tomorrow

Jowat is committed to responsible value creation. We aim to ensure the careful use of natural resources and are working on more environmentally compatible product innovations. Beyond our wide range of adhesive products, we provide technical auxiliaries, e.g. different cleaners, for our customers. Through our comprehensive service and our professional advisory in particular, we want to make sure that together with our customers we can exploit the full potential of increased resource efficiency in the processes. At the same time, we protect the sensitive data of our customers and employees.

For Optimum Solutions

Our objective is to manufacture high-quality adhesives, which facilitate durable bonded end products. In light of climate change and the loss in biodiversity, we are responsible for ensuring that our business activities are more sustainable. We do this by e.g. developing adhesives with a high content of renewable raw materials or product solutions for wood-based construction.

In average, the annual adhesive production volume of Jowat in the reporting years 2021 and 2022 was over 90,000 metric tons. Of particular interest here is the year 2021, when the annual production volume surpassed the 100,000 tonnes mark for the first time. Our product range reflects the many-sided aspects of the World of Bonding and can be divided into different categories. Apart from fossil and mineral materials, we are processing an increasing amount of biobased raw materials in the production of our products. To ensure the best possible bonding results for our customers, we also take into account the type of materials to be connected by the adhesive and what processing characteristics are required.

Jowat manufactured a total of over 100,000 metric tons of adhesive in the year 2021.

Our Product Portfolio

Our main product technologies are conventional and moisture-curing hot melt adhesives, reactive adhesives, solvent-based adhesives and dispersion adhesives. The effect of our products depends on their specific ingredients: Hot melt adhesives solidify by cooling and dispersion adhesives form a bond when the water evaporates. Each application requires specific adhesive characteristics. High production speeds need short setting times to facilitate direct downstream processing. The bonding of big elements has different requirements than, for example, the production of smart headsets. Our diverse product range reflects the wide range of industries we supply, from wood-processing companies to the food industry and to the production of filter media and filters.

Hardeners, crosslinking agents and primers (adhesion promoters) complement our adhesives and play an essential role in optimum bonding results. Crosslinking agents, for example, are mixed with the adhesive when increased water resistance is needed. Our flushing and cleaning agents are tailored to the composition of our adhesives to remove them reliably and without undesired chemical reactions from surfaces and machines. This prevents interactions and deposits, and ensures consistent quality in the production of our customers.

We want to provide our customers with tailor-made solutions. That is why it is important for us to know the exact requirements and the framework conditions of the adhesive application and to support them with technology, service and advisory.

As a partner for specific bonding applications, we understand the different requirements and needs in the industries—from furniture manufacture to food packaging. Jowat has become an established technology leader in the bonding technology market for the furniture and wood industry. Our products are also used in many other industries.

Adhesives for Sustainable Products and Production Processes

Jowat also manufactures adhesives for furniture production and the manufacture of construction elements.

From wood to plastic to metal and to concrete, the variety of materials used in the construction industry is very wide and our adhesives are expected to be adapted to the special characteristics of those materials. In doing so, we focus on efficiency and durability and promote the use of sustainable raw materials.

Building and Living: The diversity of bonded material combinations used in buildings is virtually unlimited. From interior fittings and flooring to construction elements for outdoor applications—each part must meet different requirements to ensure a long product life. Therefore, we adapt our adhesives to the specific conditions and add additives to our formulations with functions that go beyond bonding. Here, we take into account the appearance as well as the water and heat resistance and overall durability.

In the field of construction and furniture manufacture, we focus primarily on adhesives for wood processing. Wood is an extremely versatile and highly demanded material. Manufacturers and consumers appreciate the natural texture, quality and appearance of the material, which creates a warm and comfortable atmosphere. The wide range of furniture and construction elements demonstrates that wood can be processed in many different ways.

In addition, the impact of wood on the environment is minimal compared to concrete if forests worth protecting are preserved as ecosystems. Wood stores the greenhouse gas CO₂, whereas it is emitted in large quantities during the production of concrete. A finished wood-based building also has a positive effect on indoor humidity levels and thereby helps ensure a pleasant and healthy living environment.

Compared to concrete, wood stores the greenhouse gas CO₂ instead of emitting large amounts of it.

The applications of Jowat adhesives include the manufacture of load-bearing glued timber assemblies. Adhesives of the Jowapur® product range are certified in accordance with EN 15425:2017 and are therefore approved for load-bearing glulam construction in Europe. These adhesives lead to an increase in production capacity at our customers due to an optimized assembly time—pressing time ratio and withstand high stresses. When fully cured they are emission-free and odorless, formaldehyde and solvents are not contained. In addition, we provide many dispersion and hot melt adhesives for the bonding of wood and wood-based materials in the production of doors, flooring or windows.

In the furniture division, we supply adhesives for a wide range of furniture, e.g. cabinets, tables, upholstered furniture and mattresses. In the development of our adhesives, we take into consideration durability as well as low emissions and aesthetic aspects. After all, furniture is exposed to a lot of stress and at the same time is a major factor in the ambience of a room. Apart from reliable adhesion, clean application is also desired. In addition, the requirements are rising with respect to product efficiency, occupational safety and sustainable production. Therefore, we are continuously optimizing our adhesives with consideration of environmental aspects. Selected formulations such as Jowatherm® GROW and Jowatherm-Reaktant® GROW are based on renewable raw materials and are used, for example, in the furniture industry.



Photo: Blumer-Lehmann AG

A Success Story—Made in Switzerland

Blumer-Lehmann AG in Gossau near St. Gallen is the leading timber construction company in Switzerland.

Spectacular timber structures like the new mosque in Cambridge, England, or the Swatch S1 office building in Biel are the result of those extraordinary feats of engineering.

And the Jowat Swiss AG is a centerpiece of this success story. For years, Blumer Lehmann has relied on Jowat's innovative strength, quality and leading adhesive technologies. "We have an intensive collaboration with Jowat.

We exchange ideas on upcoming projects at an early stage, analyze feasibility and jointly develop solutions, even completely new ones if necessary. You can only do that with suppliers, who you trust one hundred percent," says Jussel, former managing director at Blumer Lehmann.

Food and Consumer Goods: Our wide range of products provides tailored solutions for manufacturers of food and consumer goods to facilitate improved and more convenient packaging processes. Hardly any other industry is as fast-moving as this one. Requirements for the material and shape of packaging are changing quickly and consumer awareness of sustainability aspects is growing with regard to the product as well as of packaging. Adhesives facilitate alternative packaging, for example due to the progressive substitution of plastics with fiber-based materials.

Transportation: Adhesives are also used in the transport of goods and people. For example in the construction of ships and rail vehicles or in the production of cars and motor homes. The trend towards ever lighter vehicles with optimized energy efficiencies also plays a role in production, whereby quality and safety characteristics must be maintained. Adhesives are used in a wide variety of applications in the transport industry: from bonding different materials for interior components, to bonded air filters for vehicle interiors or intake air filters that protect the engine from soot, dust or pollen.

The speed at which the concept of mobility is currently evolving is almost unmatched. If the automobile is to have a successful future, design, safety features and propulsion systems have to be geared to the trends of tomorrow. All these aspects also play a role in the adhesive applications served by Jowat.

1K PUR prepolymer adhesives of the Jowapur® series for industrial applications are characterized by reliability, versatility and cost-efficiency. Selected product types are also certified in accordance with the specifications of the International Maritime Organization (IMO) 2010 FTPC Part 5 and Part 2 for interior finishing of commercial vessels.

Filters: Due to the increasing levels of air and water pollution, the filter industry is steadily growing. Awareness is rising, as is the demand for clean air, not least because of the pandemic. Air and water filtration has become an integral parts of daily lives that safeguards human health and quality of life—at home and at work.

In the production of filters, Jowat adhesives are used for the bonding of frames, pleating of filters, and the manufacturing and laminating of filter media for home, automotive and industrial applications. Adhesives have become an integral and increasingly significant component in the manufacturing of filters. The use of adhesive technology opens up new opportunities for the development of filters as well as for design and structure. A targeted and efficient adhesive application can optimize the performance of the filters. Jowat adhesives for the filter industry are reliable in processing and facilitate a long service life and superior quality of the filter elements.

Textile: The occasion determines not only the choice of clothing, but also the adhesive used. Protective clothing, for example, can make the difference between life and death and must therefore withstand much more than conventional clothing. Hygienic textiles for medical use, on the other hand, need to be sterilized, which exposes the lamination to extreme stress. It stands to reason that contact between the finished product and the skin must be harmless. In addition, selected Jowat products have been certified with the “ECO PASSPORT” of OEKO-TEX®.



Our adhesives are used in the most diverse range of industries and applications

Graphics Industry: Our adhesives are used in a broad spectrum of applications in the graphics industry—from laminating printed sheets for folding boxes to book jackets. The portfolio of our dispersion adhesives provides solutions for diverse paper and film combinations. The dispersions are suitable for food contact in accordance with EU Regulation 1935/2004 and meet performance characteristics for the different process requirements.



Our Contribution: Responsible Consumption and Production

We seek to establish a responsible value creation and thereby support our customers' development towards more resource-efficient production and more environmentally compatible products. In doing so, we promote the UN Sustainable Development Goal 12—Responsible Consumption and Production.

Our products are tailored to the needs of our customers and facilitate the efficient use of natural resources. We attach special importance to achieving the desired result with the smallest possible amount of raw materials. With our service and professional advisory, we help to raise awareness of sustainability and provide information for more sustainable decisions. We are also working to increase the use of renewable raw materials in our formulations, for instance in the biobased GROW adhesives.

Green Adhesives

**Sustainability is diverse.
Like our adhesive portfolio.**

In a world driven by technology, we are jointly responsible for the protection of our environment. At Jowat, we know that the journey to a big goal such as sustainability often starts with small details. Because small things can make a difference when it comes to being more sustainable. Our objective for many years has therefore been to develop bonding solutions that are more environmentally friendly and which can make a real difference in the wide range of processes in industry.

The manufacturing of “green” adhesives is part of our innovative approach which focuses on the many different aspects of sustainability. Resource conservation, occupational safety, a healthy environment and the use of renewable raw materials are areas where we can make a direct impact. To that end, we take into account the entire bonding process. This diversity is reflected in our green portfolio which provides fitting solutions for a broad spectrum of applications.

Renewable Raw Materials

Fossil carbon is not only finite, its use also places a heavy burden on the environment. Jowat uses renewable and recycled raw materials as alternatives. In 2022, we procured mass-balanced raw materials for the first time. Our product range GROW provides environmentally friendly bonding solutions with high performance.

Healthy Living

Health aspects are increasingly important to consumers and are at the forefront of their mind when they choose a product, such as food, furniture or building materials. Our pollutant- and emission-reduced adhesives facilitate the hazard-free use of bonded products.



Campaign theme “Green Adhesives”

Occupational Health and Safety

The health of employees is important and must be protected. Unnecessary hazards can be prevented, in line with the principle of substitution, by using modern adhesives. Additional occupational safety can be provided by reducing the overall hazard potential for employees. The latest generation of PUR hot melt adhesives are not subject to hazard classification, and low-temperature hot melt adhesives reduce the risk of burns during processing.

Resource-saving

Sustainability is often understood to mean only natural raw materials and recycling. However, environmental responsibility and the conservation of finite resources play a pivotal role in all process stages and cover the consumption of energy as well as the choice of materials. This is also true when it comes to the processing of our products. We take all these aspects into account when we develop our products and create optimized conditions such as lower processing temperatures or reduced overall adhesive consumption.

Using Recycled Solvents

Future-oriented adhesives from Jowat for more environmental compatibility of products and processes.

The majority of solvents on the market today are still obtained from crude oil via cracking. The study of the Nova Institute aims to phase out the production of new fossil-based solvents by 2050. Jowat is already using alternatives based on renewable or recycled materials, for example naphthas, ethanol, ethyl acetate, acetone and tetrahydrofuran. These solvents can already be manufactured from biological raw materials, such as vegetable oil, sugar and starch. However, there are also downsides to these alternatives. They could compete with food and forests for the limited land and water resources of the planet.

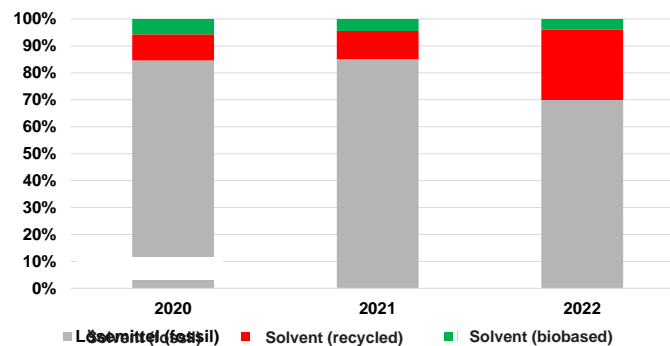
Research efforts at Jowat are therefore focused on biological raw materials from waste products, for example used vegetable oil (e.g. cooking oil), condemned materials or polysaccharides from mashes or feed additives. Another alternative is the recycling of solvents, where sustainability is achieved by closing the loop of the product life cycle. Distillation columns can filter out contaminants and provide a recycled solvent as pure as the fresh product. Compared to crude oil refinement, this process can save between 46% and an impressive 92% of CO₂ emissions.

Jowat is already successfully using sustainable solvents based on recycled materials and mass balancing.

Jowat currently has about 100 solvent-based products in its portfolio. They are divided into the categories solvent-based primers, foam-bonding adhesives, CR adhesives, PU adhesives and cleaners. Today, 40% of the products are already manufactured with solvents based on recycled materials.

In a future model for processors of solvent-based adhesives, the evaporated solvents are recovered via condensation using cryogenic technology or waste gas absorption processes. The condensed material is then sold to the recycling company, which purifies and reintroduces the substances on the market. The raw materials can then be used again to manufacture new solvent-based adhesives. The recovery of solvents could be promoted by introducing a deposit system for the solvents used.

Proportion of regenerated and biobased solvents vs. petroleum-based solvents at Jowat. Development from 2020 to date (includes THF, ethyl acetate and MEK).



Dr. Matthias Staudt, head of Development Solvent-Based Adhesives and Primers at Jowat SE

In the mass balance approach, biobased and/or recycled raw materials are used proportionally as carbon source in chemical synthesis procedures and then attributed arithmetically to the finished adhesives.



ISO 9001:2015 certificate

Responsible Value Creation

At our manufacturing locations, we comply with internationally applicable frameworks and adhere to national legislation. All our locations meet the requirements for ISO 9001, an international standard for quality management. The standard facilitates a continuous improvement of our products and services. Furthermore, it helps increase customer satisfaction and meet statutory as well as official requirements.

As an enterprise in the chemical industry, we bear responsibility for the substances we place in the market and the hazards arising from them. We implement all statutory requirements related to chemical substances, for example under the EU Chemicals Regulation REACH and the CLP Regulation on the classification, labeling and packaging of substances and mixtures. Our adhesives that can be used in the packaging of food comply with the relevant global specifications. We also meet the requirements of the IWAY standard for suppliers to the multinational home furnishings group IKEA.

Jowat evaluates all raw materials, intermediates and finished goods for their health and safety impacts during transport, storage, production, distribution and use. We have established a comprehensive system to meet our product stewardship responsibilities. This also involves a database for impact assessments, toxicological evaluations, as well as product registration, classification and labeling. At the same time, we of course always also take into consideration the requirements of our customers, for example “IKEA Sustainability.”

Jowat evaluates all raw materials, intermediates and finished goods for their health and safety impacts during transport, storage, production, distribution and use.

We follow the substitution principle in order to minimize risks to human health and the environment as much as possible. The principle prescribes mandatory testing of the substitution of all hazardous substances. Jowat is driving the substitution or reduction of hazardous substances in different product categories, for example in VOC-reduced primers or the hazard-labeling-free product range Jowatherm-Reaktant® MR.

However, the use of hazardous substances in the manufacture of adhesives cannot always be avoided. Of the substances procured by Jowat, about 17% in 2021 and about 16% in 2022 were hazardous, of which around five percent reached the consumers. Those five percent are usually contained in highly diluted form in the products, and therefore no hazard labeling is required. The much larger proportion of the substances completely reacts when the adhesives are processed in industry and therefore poses no health risk to consumers.

Promoting Customer Safety

Application aspects to ensure a convenient processing of our products are taken into consideration in the development stage already. The two organizational units “Technical Support & Service” and “Environmental Management” at Jowat are responsible for the central management of customer safety around the globe. They control our activities in this area, set goals and monitor their achievement. For this purpose, they work together with other relevant departments, such as Purchasing or the Legal department. Based on these established processes, we provide information and assistance for the correct handling of our products.

This includes processing instructions as well as personal customer support and advisory. For example, we provide adhesive training for processors and organize symposia. The Jowat Adhesives Symposium for the wood and furniture industry was organized successfully for the 19th time in 2022 and has become established as a fixed industry meeting in the German-speaking sales region.

Our product labels comply with the specifications of the Globally Harmonized System of Classification of Chemicals (GHS) and are translated into different languages. In addition, our customers receive data sheets concerning the technical handling and safety of the individual product. Safety data sheets are created in the Environmental Management department according to the four-eyes-principle. We use the news feed on our website and on social media, among other purposes, to provide important product information on occupational safety and health protection to our business partners in different industries. Our customers also have the opportunity to audit our locations. Our technical support can be contacted by phone in case of complaints, problems and acute emergencies. In addition, complaints management systems are implemented at all our production locations. In 2021 and 2022, there were no violations of safety or health regulations relating to our products.

Based on established processes, we provide information and assistance for the correct handling of our products.

Our Management of Information

At Jowat, the processing of information plays a key role in the performance of daily tasks. We protect trade secrets and the data of our employees, customers and business partners from unauthorized access and unauthorized manipulation. This is a top priority for us.

The handling of customer data is set out in our Code of Conduct. In addition, we comply with the European Union's General Data Protection Regulation (GDPR). The GDPR and the Code of Conduct are available and accessible to our employees on the JOSY information system and must be complied with at all times. Our IT security guideline supplements the aforementioned frameworks and provides a clear overview of the security strategy, organization and objectives. In addition, our employees have permanent contact persons at Jowat to clarify any questions regarding information security. We are not aware of any violations of product labeling, marketing regulations, or the protection of customer data in the reporting years.

At Jowat, the processing of information plays a central role in the performance of daily tasks.

Information technology (IT) supports all essential strategic and operational processes. We want to prevent the risk of an IT system failure disrupting business activities, for example due to a cyberattack. We therefore take appropriate measures to ensure that the risks associated with e-mail and internet use remain as low as possible. For all processes, IT applications and IT systems, we appoint a person responsible as well as a substitute. The designated persons are responsible for determining the protection required and granting access authorizations. Any adaptation or modification in the location of servers or data is jointly decided upon by the head of IT and the managing director at the concerned location.



The auditorium (Audimax) inside the House of Technology is regularly used to host information events

Designing Sustainable Processes

We are continuously working to reduce the negative ecological and social impacts of our business activities. In doing so, we take a comprehensive approach along the entire value chain. We advocate environmental protection, occupational safety and human rights—in our enterprise as well as at our suppliers.

For Environmental Protection in Production

At Jowat, the responsible use of resources in production is part of our daily work—because we are aware of their value. Quality, environmental protection and energy efficiency have been laid down as corporate goals in a guideline. It provides clear orientation for all employees at Jowat and helps embed our understanding of responsible action within the corporate culture.

How We Embed Responsibility

Our guidelines on quality, environmental protection and energy efficiency make it clear that we consider the constant improvement in these areas to be a corporate goal. They are binding for all employees at all our locations. Managers are responsible for embedding the understanding described therein permanently in the corporate culture. The Board of Directors is accountable for environmental protection. The plant and production managers are responsible for ensuring compliance with environmental protection standards at the individual locations—both our own as well as those of the country they are in. Those responsible delegate certain subsections, such as waste management. The Board of Directors regularly travels to the manufacturing locations and verifies whether our guidelines are being observed and lived by.

At the Detmold location, we have established an environmental management system certified in accordance with the international standard ISO 14001 that is continuously developed further. An initial certification of the location in High Point, USA, is scheduled for 2023. In Detmold as well as at the Elsteraue site, we have an energy management system certified in accordance with ISO 50001, which will continuously improve our energy efficiency. Binding guidelines for the expansion of operational environmental protection are also provided by the statutory framework.

Compliance in Production

To this end, we have established processes that are based on the applicable national requirements. The German manufacturing locations in Detmold and Elsteraue use the “Recht im Betrieb” compliance tool for this purpose. At the Buchrain site in Switzerland, matters of compliance are handled by a central contact person, who receives information on current developments from the authorities, the Swiss professional trade association for occupational health and safety, and the hazardous goods officer. Health, Safety and Environment Officers are also responsible for compliance at the sites in Bandar Enstek (Malaysia) and High Point (USA), respectively, and are in contact with the local authorities. In 2021 and 2022, there were no fines or penalties for non-compliance with environmental laws and regulations at our production locations.

Reducing Emissions

At Jowat, we take responsibility for climate protection and optimize our manufacturing processes by applying and further developing environmentally-friendly technologies. This saves energy and reduces our CO₂ emissions.

How We Use Energy

Our main sources of energy are electricity and natural gas, and to a lesser extent diesel, heating oil and gasoline. Diesel is used primarily for the transport of our goods. The aforementioned ISO 50001 certification at our sites in Detmold and Elsteraue and a transregional energy network in which we are active together with several other companies support us significantly in our efforts to reduce our energy consumption at the locations. By the end of 2026, we want to change our car fleet to e-mobility in Detmold and Elsteraue.

Compliance with environmental requirements is a matter of course for our operations at the five manufacturing locations in Germany, Switzerland, the USA and in Malaysia.

In 2019, we set ourselves the goal of saving two gigawatt hours of energy at the manufacturing location in Detmold and 50 megawatt hours at the location in Elsteraue by 2023. By the end of 2022, we had achieved a total of almost 34% of our savings target in Detmold and more than a triple of our target in Elsteraue. We implemented different projects for that purpose in the past years. For example, we installed motion detectors and LED lighting at our global production sites and are using chargers with time switches. Due to the measures implemented from 2019 up to and including 2022, we saved a total of 833.76 MWh (670,920 kWh in Detmold and 162,837 kWh in Elsteraue). Of the total amount of electricity used at our manufacturing locations, 34.6% came from renewable sources in the year 2021 and 34.6% in the year 2022. By 2025, we aim to reduce our energy consumption per metric ton of goods produced by 5% compared to 2021 within the framework of our sustainability program. To this end, we will implement further measures to reduce energy consumption. As an adhesive manufacturer, we thereby also support the ambitious climate protection goals of our customers (cf. IKEA).



By 2025, we aim to reduce our energy consumption per metric ton of goods produced by 5% compared to 2021 within the framework of our sustainability program.

We plan to further reduce our energy consumption in the future

Energy consumption by energy source

Energy source in MWh	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Primary energy use	14,658.4 / 12,910.7	3,406.0 / 2,940.8	406.5 / 421.5	5,282.8 / 5,328.0	2,466.5 / 2,853.6	26,220.1 / 24,454.6
Natural gas	9,236.7 / 7,797.5	3,235.3 / 2,778.1	0.0 / 0.0	5,277.5 / 5,326.6	2,445.5 / 2,825.8	20,195.0 / 18,728.0
Heating oil	0.0 / 0.0	149.9 / 135.3	183.7 / 188.2	0.0 / 0.0	0.0 / 0.0	333.6 / 323.5
Diesel	5,406.6 / 5,107.8	20.9 / 27.4	66.5 / 73.5	0.0 / 0.0	0.0 / 0.0	5,494.0 / 5,208.4
Gasoline	15.0 / 5.4	0.0 / 0.0	156.3 / 160.1	5.3 / 1.4	21.0 / 27.8	197.6 / 194.7
Secondary energy use	12,174.7 / 11,188.5	3,483.1 / 3,009.0	501.6 / 427.0	8,429.0 / 8,472.3	4,986.6 / 5,282.2	29,575.0 / 28,379.0
Electricity	12,174.7 / 11,188.5	3,483.1 / 3,009.0	501.6 / 427.0	8,429.0 / 8,472.3	4,986.6 / 5,282.2	29,575.0 / 28,379.0
of which from renewable energy	7,514.9 / 7,133.4	2,154.9 / 1,910.0	0.0 / 103.1	168.6 / 169.4	407.2 / 644.6	10,245.6 / 9,960.5
Total	26,833.0 / 24,099.2	6,889.1 / 5,949.8	908.1 / 848.5	13,711.8 / 13,800.2	7,453.1 / 8,135.8	55,795.1 / 52,833.5

Specific energy consumption

	2021 / 2022
Energy consumption per kilogram finished goods [kWh/kg]	0.56 / 0.63



Our Contribution: Climate Action

The manufacture of hot melt adhesives requires energy-intensive processes. By reducing the consumption of fossil fuels and thus greenhouse gases, we see great potential to contribute to the global sustainability goal SDG 13—Climate Action.

We are currently working to increase the proportion of renewable energies in our energy mix. In Malaysia, the roofs of our buildings at the Bandar Enstek location are used by the energy supplier TNB for a photovoltaic system. Of the total amount of electricity used in Bandar Enstek, 10.2% were produced by the site's own photovoltaic system. The manufacturing location in Switzerland uses the Earth's heat (geothermal energy) to generate power. In Detmold we further expanded our photovoltaic system in the reporting years. The system produced 50.325 kWh of electric energy in 2021 and 121,476 kWh in 2022, which were supplied into the local energy grid. At our location in Detmold, we also have charging stations that can be used by guests to charge their electric cars and bicycles free of charge. The photovoltaic system in Switzerland supplied 135,151 kWh of electric power in 2022. At our site in High Point, we buy electric power produced from sustainable sources for the first time

Our Emissions

Jowat is required to declare the emissions at its manufacturing locations. Those declarations are based on local statutory requirements and therefore subject to different submission periods. For example, a declaration must be submitted each year at the location in Bandar Enstek (Malaysia) and every four years at the locations in Detmold and in Elsteraue. Independently of those obligations, our aim is always to keep the emission of greenhouse gases from the manufacture and transport of our products as low as possible. In the year 2022, the production volume was smaller compared to 2021, but CO₂ emissions were higher. This was due to a higher share of fossil sources in the mix of our electricity supply.

Direct emissions (scope 1)

Emissions by energy source in t CO ₂	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Natural gas	1,856.6 / 1,567.3	650.3 / 558.4	0.0 / 0.0	1,040.2 / 1,090.1	527.0 / 675.4	4,074.1* / 3,891.2*
Heating oil	0.0 / 0.0	43.8 / 35.9	52.9 / 46.9	0.0 / 0.0	0.0 / 0.0	96.7 / 82.8
Diesel	1,322.5 / 1,305.1	5.3 / 4.9	17.7 / 20.2	0.0 / 0.0	0.0 / 0.0	1,345.5 / 1,330.2
Gasoline	3.3 / 0.5	0.0 / 0.0	0.1 / 0.0	1.4 / 0.4	5.5 / 7.3	10.3 / 8.2
Total	3,182.3 / 2,872.9	699.4 / 599.2	70.7 / 67.1	1,041.6 / 1,090.5	532.5 / 682.7	5,526.5 / 5,312.4

* The total amount includes CO₂ as well as the equivalents from nitrous oxide (N₂O) and methane (CH₄) emissions.

Indirect emissions (scope 2)

Emissions by energy source in t CO ₂	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Electricity	2,900.3 / 2,870.1	829.0 / 770.3	0.0 / 0.0	2,206.1 / 2,175.1	1,745.3 / 1,168.7	7,680.7 / 6,984.2



We rely on renewable energies, e.g. from solar panels on roofs like pictured here in Poland, Malaysia, Switzerland and Detmold.

Our Approach to Raw Materials

Whether raw materials for production, packaging materials or water—Jowat is committed to the efficient and environmentally compatible use of resources. Despite of the complex challenges we face when we improve our processes, we work every day to ensure a responsible use of resources.

Efficient Use of Raw Materials

Around 65% of our costs can be attributed to the use of materials and therefore it is ecologically and economically vital that they are used in a responsible manner. There are a number of actions we are taking to ensure this: We have defined different sets of key data for all raw materials, which have to be verified and confirmed by our quality lab when a new batch is received. In this way, we prevent the manufacture of flawed products.

We conserve further resources by using recycled solvents. In 2022, 25.7% of methyl ethyl ketone (MEK) and 100% of tetrahydrofuran (THF) were sourced from recycled material. The recycled and biologic content for ethyl acetate was 24.4%. In addition, any remnants of a component that has not been used up, will be used when the next batch is manufactured. Conservation of resources also plays a central role in administrative activities. For example, we are now using mostly recycled printing and tissue paper.

We use industrial packaging that is as compact as possible and easy to handle. Where possible, we do not use any composite packaging, to facilitate an easier recycling within the framework of the known systems. For example, we use steel containers (steel drums) for PUR hot melt adhesives at the location in Detmold. In 2022, our smooth-sided drums contained 62.7% of recycled material in average.

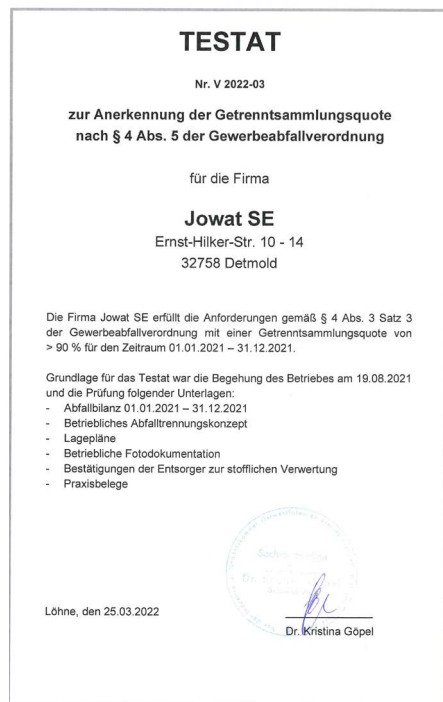
Raw materials used

Raw materials in t	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Dispersions	3,257.4 / 2,321.5	3,528.6 / 3,103.7	85.8 / 67.1	501.0 / 462.6	266.8 / 303.6	7,639.6 / 6,258.5
Resins/waxes/polymers	24,656.3 / 20,345.4	9,011.6 / 7,003.5	2,139.2 / 1,733.7	17,098.6 / 15,055.3	9,378.0 / 9,180.2	62,283.7 / 53,318.1
Additives	922.6 / 752.2	182.7 / 170.2	44.0 / 41.4	355.8 / 388.4	194.8 / 188.7	1,699.9 / 1,540.9
Monomers	5,001.6 / 3,937.4	0.7 / 2.9	1,908.6 / 1,503.5	34.8 / 37.9	323.0 / 379.6	7,268.7 / 5,861.3
Solvents	354.7 / 277.3	5,205.9 / 3,667.6	109.4 / 81.6	1.1 / 1.2	1,924.6 / 1,292.5	7,595.7 / 5,320.2
Fillers	1,628.3 / 1,643.6	2,120.1 / 1,572.5	159.0 / 122.0	2,033.4 / 2,037.7	4,222.6 / 3,756.6	10,163.4 / 9,132.4
Total	35,820.9 / 29,277.4	20,049.6 / 15,520.4	4,446.0 / 3,549.3	20,024.7 / 17,983.1	16,309.8 / 15,101.2	96,651.0 / 81,431.4
of which hazardous substances in %	17.3 / 16.4	25.9 / 24.5	55.5 / 56.8	0.7 / 1.3	14.8 / 12.7	17.0 / 15.7

Packaging materials used*

Packaging materials in t	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Metals	1,612.0 / 1,388.6	406.6 / 316.2	50.7 / 33.0	344.5 / 338.3	2,413.8 / 2,076.1
Cardboard/paper	334.0 / 277.3	50.5 / 41.9	19.1 / 18.0	60.2 / 52.0	463.8 / 389.2
Wood	1,121.4 / 1,043.7	410.0 / 310.0	32.1 / 30.2	1,263.2 / 1,164.5	2,826.7 / 2,548.4
Plastic materials	350.0 / 284.9	90.4 / 50.9	48.9 / 48.6	141.1 / 168.5	630.4 / 552.9
Multicomponent/composites	633.2 / 467.5	530.7 / 380.5	180.9 / 134.7	81.7 / 71.0	1,426.5 / 1,053.7
Total	4,050.6 / 3,462.0	1,488.2 / 1,099.5	331.7 / 263.5	1,890.7 / 1,794.3	7,761.2 / 6,620.3

* Jowat Corporation (USA) measured the amount of packaging material used in the reporting period as number of items only and was not included in the calculation of the total.



Certificate confirming the percentage of separated waste collection

Waste generated

Waste by type in t	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Hazardous waste (laboratory and production)	120.5 / 99.9	15.0 / 25.9	6.0 / 11.8	1.3 / 0.0	57.5 / 54.0	200.3 / 191.6
Nonhazardous waste (laboratory and production)	1,235.6 / 1,024.6	222.0 / 172.0	56.5 / 45.8	860.3 / 722.1	198.4 / 192.0	2,572.8 / 2,156.5
Others	18.3 / 21.1	0.0 / 0.0	0.0 / 11.7	1.9 / 1.0	0.0 / 0.0	20.2 / 33.8
Total	1,374.3 / 1,145.7	237.0 / 197.9	62.5 / 69.3	863.5 / 723.0	255.9 / 246.0	2,793.3 / 2,381.9

Our manufacturing locations operate according to the principle: Always prevent waste where possible.

Our Approach to Waste

Our manufacturing locations operate according to the principle: Always prevent waste where possible. Nevertheless, waste is unavoidably generated at the manufacturing locations as a result of the production process and due to the packaging of raw materials and factory supplies. Disposal measures with an equivalent value of more than €2,500 e.g., products, raw materials or containers, require the approval of the Board of Directors following a detailed failure analysis. Out-of-spec production batches are offered to our customers within the framework of special sales. The remaining waste is separated and disposed of properly. This has been verified and confirmed for the location in Detmold with a certificate.

Our Approach to Hazardous Substances

Before they are used, new raw materials are subject to an established procedure to evaluate the associated risks to people and the environment. We make sure there are no hazard characteristics that would prevent its use and verify to what extent the hazard characteristics can affect the products.

Because, in many cases, the hazardous substances fully react to form a harmless compound during bonding. If certain hazard characteristics are determined within the framework of the evaluation, the testing of alternatives is mandatory. In addition, we use a comprehensive questionnaire, the Supplier Chemical Assurance Form (SCAF), to clarify whether the products of our selected suppliers fall under international regulations such as the Restriction on Hazardous Substances (RoHS) or REACH, Substances of Very High Concern (SVHC) or conflict minerals (Dodd-Frank Act). The questionnaire also includes questions concerning critical ingredients. If there are any inconsistencies or if the material contains certain ingredients, e.g. which must not come into contact with food, we clarify those issues with the supplier. The introduction of the material in the company requires the prior coordination with Environmental Management, the creation of a workplace safety card and the filing of the safety data sheet for general use.

The use of hazardous substances cannot be completely prevented in the manufacture of adhesives for industrial use. When dealing with non-substitutable hazardous substances for production, we separate work areas where necessary and use special filters in the extraction systems. Where these precautions are not sufficient, we provide our employees with personal protective equipment.

Many hazardous materials are also dangerous goods. Those are transported to customers in most cases by our own truck fleet. We train our employees on how the cargo has to be secured and on the care and maintenance of the vehicles, to ensure a proper handling of the goods. The rules on hazardous substances and dangerous goods are laid out in the statement of procedure "Handling of Hazardous Substances."

In addition to our efforts to reduce the use of hazardous substances, we also use renewable raw materials apart from fossil and mineral raw materials.

Modified natural resins have always been used in the formulation of our solvent-based and hot melt adhesives. We have successfully increased the biobased raw material content to over 50% in a first set of Jowatherm® products. More information on the use of biobased raw materials is provided on pages 19 and 20 in the chapter “Products.”

Our Approach to the Use of Water

We are aware that water is one of the most valuable raw materials and that, according to the Water Risk Atlas, all our manufacturing locations are also exposed to the risk of water shortages. Water is utilized in different ways within the Jowat Group—in the manufacture of dispersion adhesives, for cleaning production facilities, for cooling or for sanitary purposes. For hygiene and quality reasons, we only use drinking water from the local drinking water supply.

Wastewater contaminated with product from the flushing and cleaning processes at the Detmold plant is diverted into a company wastewater treatment plant.

At the other manufacturing locations, wastewater contaminated with product is collected separately in tanks, which are picked up by a certified disposal company. Wastewater that cannot be treated or not treated properly is collected in Detmold, too, by a tank truck for external disposal. 179 metric tons had to be collected by a tank truck in the year 2021, and 154 metric tons in the year 2022.

Due to its facilities, the Detmold plant is subject to the German act on the implementation of the industrial emissions directive (Gesetz zur Umsetzung der Richtlinie über Industrieemissionen). In addition, environmental inspections are carried out by the Detmold district government every three years. Every five years, we update the so-called baseline status report, which contains information on groundwater and, if applicable, soil contamination at the site. In addition, we carry out regular sewer inspections and, where necessary, remediate damaged sewers in accordance with the legal requirements of self-monitoring of sewer systems. The first verification was completed in 2019.

Regular analyses of discharged water are also mandated by law in the USA and in Malaysia. To ensure that we are prepared for possible water shortages in future, we are aiming at permanently reducing the volume of product-contaminated wastewater at the Detmold location to less than 5,000 cubic meters per year and thereby minimize the need for fresh water. The amount of such water was 4,223 m³ in the year 2021 and 3,769 m³ in the year 2022. To this end, we implemented a number of measures, including analyzing the origins of wastewater in the dispersion department and the installation of a pigging system for cleaning the ductwork.

In 2021 and 2022, we again met our target of reducing the amount of product-contaminated water discharged in Detmold to less than 5,000 cubic meters.

Water withdrawal

in m³	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Local drinking water supply	16,205 / 15,331	1,241 / 1,160	465 / 430	3,396 / 5,128	12,870 / 12,699	34,177 / 34,748
River water	0 / 0	10,630 / 9,074	0 / 0	0 / 0	0 / 0	10,630 / 9,074
Total	16,205 / 15,331	11,871 / 10,234	465 / 430	3,396 / 5,128	12,870 / 12,699	44,807 / 43,822

Water discharge

in m³	Detmold (Germany) 2021 / 2022	Elsteraue (Germany) 2021 / 2022	Buchrain (Switzerland) 2021 / 2022	High Point (USA) 2021 / 2022	Bandar Enstek (Malaysia) 2021 / 2022	Total 2021 / 2022
Municipal wastewater treatment plant	12,428 / 12,571	946 / 837	450 / 418	2,251 / 3,909	12,784 / 12,159	28,859 / 29,894
External wastewater treatment plant	179 / 154	239 / 283	15 / 12	1,145 / 1,219	86 / 540	1,664 / 2,208
Outfalls/waterbodies	0 / 0	10,630 / 9,074	0 / 0	0 / 0	0 / 0	10,630 / 9,074
Total	12,607 / 12,725	11,815 / 10,194	465 / 430	3,396 / 5,128	12,870 / 12,699	41,153 / 41,176



Our Contribution: Clean Water and Sanitation

Water plays a significant role in the manufacture of adhesives. At all our locations, we ensure that wastewater contaminated with our products is treated and complies with limit values before it enters the sewage system. By preventing hazardous chemicals from having a detrimental impact on water quality, we contribute to the achievement of SDG 6—Clean Water and Sanitation. In light of the global water shortage, we aim to further reduce our water consumption compared to recent years, both in production and in sanitation at our sites.

For Responsible Procurement

Our environmental and social responsibility is not limited to our locations. Jowat is committed to responsible procurement of goods and services along the supply chain. We have therefore set ourselves the goal of committing the majority of our suppliers to the sustainability criteria of our code of conduct by 2025.

As a manufacturer of adhesives, Jowat currently purchases most of its raw materials from suppliers in the petrochemical industry. In order to ensure reliable deliveries to our customers, we cooperate with several suppliers for most raw materials or qualify alternative adhesive formulations at our customers. In addition, our suppliers also include plant manufacturers for the construction of additional production facilities or packaging machines and IT hardware distributors. In addition, we use the services of different contractors, e.g. for manual work or digital data processing.

Freedom of Association and Collective Bargaining

We respect the right of employees at all locations to the freedom of association and fully recognize the German Works Constitution Act.

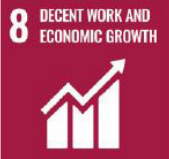
In the reporting period, Jowat received no notification that employees' right to freedom of association or collective bargaining may have been violated or significantly threatened at any of its locations of operation or suppliers.

We have been working together with the employee representatives at our locations in a spirit of trust and goal-oriented manner for many years. We make joint decisions based on the applicable laws that take into account the interests of the enterprise as well as of the employees. Jowat informs the works council at the locations in Detmold and Elsteraue in regular intervals of the current course of business and of measures planned.

Human Rights in the Supply Chain

Jowat has developed a code of conduct for suppliers and service providers and a supplier questionnaire on the fulfillment of human rights due diligence in the supply chain. It contains questions on sustainability management and is based on fundamental international frameworks such as the UN Guiding Principles on Business and Human Rights and the German due diligence in the supply chain act (Lieferkettensorgfaltspflichtengesetz). Suppliers are asked questions concerning compliance with human rights, safeguarding of occupational health and safety, the assurance of compliance, business ethics and environmental protection.

In addition, the questionnaire also includes questions about the certification of the supplier. For the first time in the autumn of 2022, we also sent questionnaires to our suppliers and then analyzed the answers to understand the human rights risks in our own supply chain. The suppliers of 80% of the amount procured meet the sustainability criteria specified in our code of conduct (as of December 31, 2022). The processing and evaluation of the results is not yet completed. All countries from which we source raw materials were taken into consideration in the analysis.



Our Contribution: Decent Work and Economic Growth

We want to fulfill our human rights due diligence in the supply chain and thereby contribute to the achievement of SDG 8—Decent Work and Economic Growth. With the human rights risk analysis and the supplier questionnaire, we are taking important steps to implement this and ensure that our supply chains are free of modern slavery, forced labor and child labor. In addition, we promote the protection of labor rights and a safe working environment for all employees.

Local* procurement

	Europe	USA	Malaysia	Total
Locally used procurement budget in % 2021	98.4	88.6	81.9	93.9
Locally used procurement budget in % 2022	98.8	86.4	88.3	94.4

* Definition of "local" here: The supplier (not the place of production) of the goods is located on the same continent as the processing Jowat facility.



Ensuring a Good Quality of Life for All

We take our responsibility for employees and society seriously. Therefore, we offer attractive workplaces and create an environment in which our employees enjoy working and remain healthy. To contribute to our society, we provide training for young people, promote diversity within our own ranks and help where help is needed.

Successful Together

Each day, around 1,200 employees within the Jowat Group contribute to the success of the enterprise. Fostering their well-being is one of our corporate principles and is at the heart of our actions. Our relationships are based on an equal footing and on mutual respect. We focus on the needs of our employees and work out solutions together. In this way, we pursue long-term corporate development and offer attractive workplaces.

We are convinced that only well-trained and committed employees can tackle the challenges of today and tomorrow, always with the overall well-being of the enterprise in mind. Therefore, employee satisfaction, qualification and motivation play a key role at Jowat. Our code of conduct provides us with a clear framework for this and is aimed at ensuring equal opportunities. Personal interactions are characterized by appreciation and forward-looking. Flat hierarchies facilitate quick decisions. This makes it easier for us to respond to the needs of our employees and to meet the changing conditions in the markets. Our employees maintain close contact with our customers and business partners with regard to their wishes and expectations.

Personal interactions are characterized by appreciation and forward-looking. Flat hierarchies facilitate quick decisions.

Human Resources Management is the responsibility of the Board of Directors. The action areas in this field include e.g. the development of compensation models, the relationship between employer and employees, occupational health and safety, training and equal opportunities.

Flexible Working Hours

When personal life situations change, we support our employees in an open and solution-oriented manner in adapting the framework conditions, for example the restructuring of working hours to part-time work. In the reporting period, the percentage of part-time employees at our biggest location in Detmold was 16.0% in 2021 and 15.4% in 2022. Across our global locations, the proportion was 9.7% in 2021 and 9.4% in 2022.

The Jowat Group strives to offer employees individual solutions for their personal and professional lives. For example, they can use of a wide range of services provided by our cooperation partner Familienbetreuung Lippe (FABEL Service) at the Detmold location. The range of services includes the arranging of short-term childcare as well as assistance and advice in different life situations. During the closure of schools and daycare centers due to the coronavirus pandemic, we also adapted individual working hours and facilitated remote working. Remote working has now been implemented in a works agreement and provides additional flexibility to employees.

Special Benefits for Employees

We offer our company benefits to both full-time and part-time employees at all locations. The benefits include, for example, individual working time models and occupational health examinations. The JoFit sports program is available at the location in Detmold and includes weekly health exercise classes, running groups and different team sports.



At Jowat, the well-being of our employees is at the heart of our actions.

Use of Parental Leave

Employees who have had a child can go on parental leave, a right enshrined in German law. At the German locations, 35 employees went on parental leave in 2021 and 32 employees in 2022. In the reporting period, 13 employees returned from parental leave. The average absence period across reporting years of employees returning from parental was 7 months (2021) and 6 months (2022) per person. Employees at other locations can also go on parental leave. However, the legal provisions vary from country to country. Jowat aims to find a solution suitable for employers and employees in each case.



Our Contribution: Quality Education



Our apprenticeship and training measures are oriented towards SDG 4—Quality Education. In order to meet our social responsibility, we have decided to offer more apprenticeships than are necessary for our own needs. This way, we are helping to alleviate the shortage of skilled workers and provide young people the opportunity to develop their careers with us. Since 2000, more than 140 apprentices have successfully completed their apprenticeships at Jowat in Detmold alone.

Our teamwork is characterized by appreciation and focused on the future

In doing so, we strive to facilitate a return to work as smooth as possible.

Parental leave*

	Number 2021 / 2022	% 2021 / 2022
Employees (Germany)	627 / 630	100.0 / 100.0
of whom went on parental leave	35 / 32	5.6 / 5.1
of whom female	11 / 11	31.4 / 34.4
of whom male	24 / 21	68.6 / 65.6

* The data refers to the German locations in Detmold, Lage and Elsteraue

We offer older employees the possibility of so-called partial retirement, which allows a smooth and early transition into retirement. Partial retirement is financed from the demographic fund set up by Jowat. In addition, we supplement the personal salary during partial retirement with so-called pension increase insurance contributions, which are used to significantly raise the individual contributions for the statutory pension insurance.

Jowat set up a support fund for its German organizations many decades ago to provide financial assistance to individual employees and their families who are experiencing times of hardship through no fault of their own. Distribution of the funds is the responsibility of an employee committee.

Informing and Involving Employees

At the beginning of each year, we hold an annual start-up meeting for all managers in the triad regions (Europe, Americas and Asia-Pacific) to review the past business year and describe the strategic goals for the following fiscal year.

In our employee magazine *Jowat Times*, we provide information on current operations and current topics of strategic focus. The magazine is published two to three times a year. This communication format is supplemented by the JOSY information system, internal memos from the Board of Directors, bulletin boards, e-mails and annual works meetings.

Ideas for possible improvements in daily operation are also contributed by employees. The suggestions are discussed constructively in our teams. Jowat idea management serves as an additional tool for taking up ideas from employees. A decision-making body close to the company awards prizes for the best ideas and initiates their implementation.

Employee turnover rate at the German locations

	Turnover rate in % 2021 / 2022	Number of departures 2021 / 2022	Number of new employees 2021 / 2022
Jowat Germany	4.0 / 5.6	25 / 35	77 / 80
by gender			
female	1.6 / 4.5	2 / 6	14 / 19
male	4.6 / 5.9	23 / 29	63 / 61
by age			
under 30 years	7.5 / 9.1	12 / 15	50 / 45
30–50 years	3.4 / 3.7	10 / 11	23 / 29
over 50 years	7.7 / 5.3	3 / 9	4 / 6

Employee turnover rate across locations

	Turnover rate in % 2021 / 2022
Jowat Group	4.6 / 11.6
by gender	
female	3.1 / 9.7
male	5.1 / 12.2

In our employee magazine “Jowat Times,” we provide information on operational changes and topics of strategic focus.

Retention of Employees

Our employees perform their tasks with particular commitment, show flexibility in organizing their working hours and demonstrate long-term loyalty to Jowat. This is reflected in many long-term employment relationships. The turnover rate at our German locations in the reporting period was 4.0% in 2021 and 5.6% in 2022. The global turnover rate at our locations was 4.6% in 2021 and 11.6% in 2022.

Lifelong Learning

Personnel Development supports the implementation of our corporate strategy by constantly expanding the skills of our employees. We want to strengthen their knowledge worldwide. We promote and expect the willingness to change and the ability to learn new things. We bundle competence management within the Jowat Academy. Whether it is the development of managers, dual study courses, strategic projects, or company health management—the Jowat Academy drives a number of important topics and accompanies their implementation. This also includes employee appraisals, training programs, cooperation and networks.



An international team: our employees in Malaysia

Facilitating Individual Development

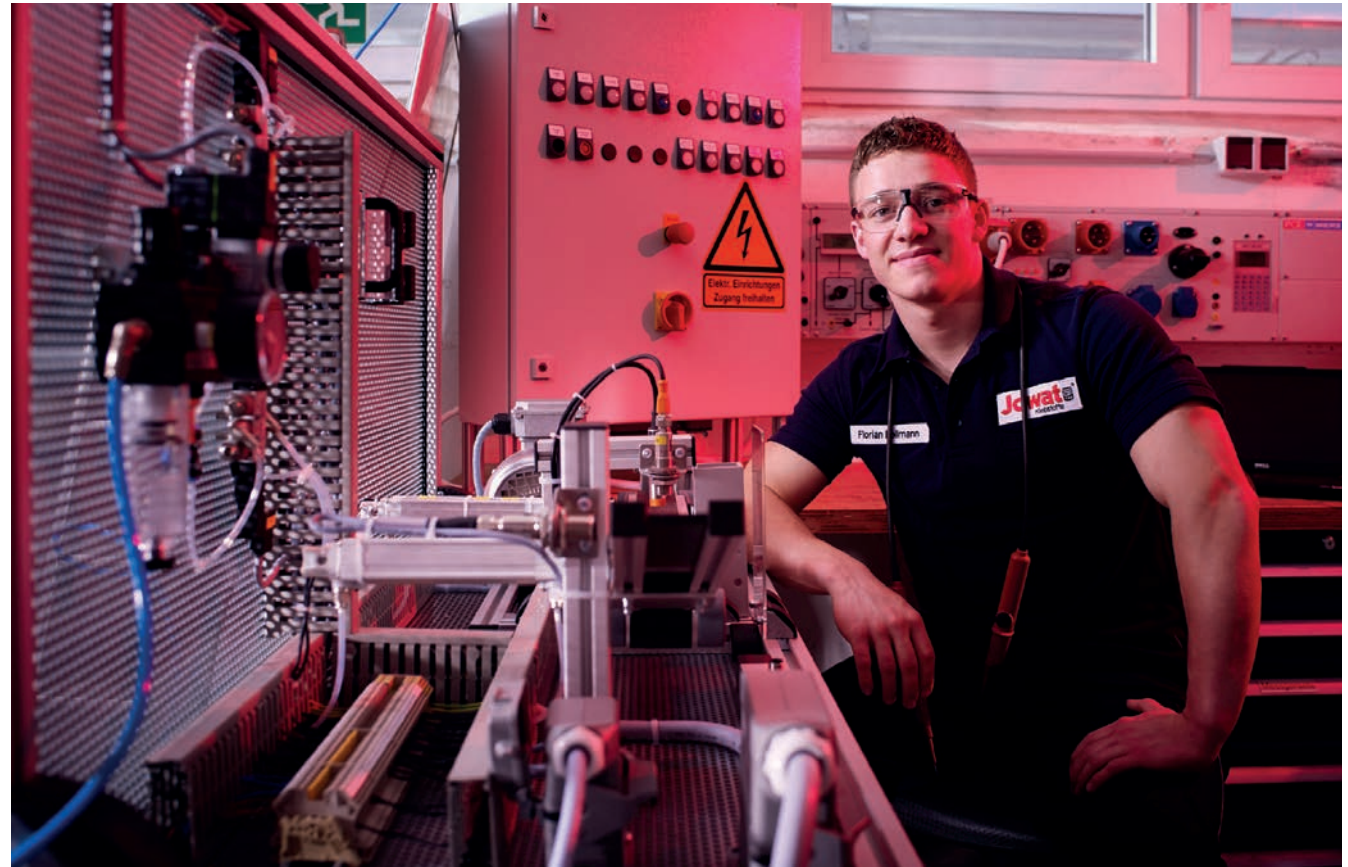
Those responsible for the specialist departments have the particular task of identifying and monitoring training needs in order to develop the necessary skills. We offer annual technical training courses in German and English language to reach an internationally uniform level of knowledge among our employees. The annual employee appraisals provide the opportunity for managers to talk with employees about satisfaction on both sides and about the potential for development. These appraisal meetings are conducted with 70% of our global workforce.

Many of our employees have the opportunity to change locations within the Group and—if they wish—return to the previous one. In recent years, several key positions at international locations were filled with employees who previously worked at the enterprise's headquarters in Germany. They continue to develop professionally at Jowat and acquire intercultural skills. We want to offer this opportunity to young people in particular and thereby foster their loyalty to the Jowat Group.

Digital Formats for Exchange and Learning

To facilitate the best possible development of our employees, we support them with a comprehensive onboarding process. In addition, we provide several learning courses in digital format. In the year 2022, our managers in Germany and the USA, from shift managers to department managers, completed a management training that consisted of four modules. We thereby created a shared basis of management tools and deepened our existing leadership mission. A shared "management toolbox" is another support tool that was developed in 2018 as part of the introduction of a second management level under the Board of Directors at the Detmold location.

Due to the coronavirus pandemic, we moved from in-person events to digital learning formats as far as possible in the past years. All employees can now access a video catalog via the Jowat Academy. The catalog provides e.g. video tutorials on general questions about remote work. On average, each employee attended seven hours of training per year in the reporting period.



Our employees perform their tasks with particular commitment and also contribute their ideas for possible improvements.

Personnel Development at Jowat

The entrepreneurial success of Jowat is based primarily on the people who contribute their competencies and experience. Our employees are therefore our greatest asset. To strengthen this asset, our Personnel Development implemented a range of actions to support our goal of work-life balance as well as actions focused on health and leadership.

A separate area has been created on our JOSY information platform to provide information related to parental leave, nursing care and child care.

In 2022, a care helper was trained in Detmold to support employees who have relatives in care and to provide assistance in case of questions and problems. Because: The number of people who care for a relative at home while also holding a paying job is increasing. To balance their career with being a caregiver, these employees need support—including, and especially, from their employers.

A part of manager development focuses on young generations and how this affects the leadership of people. The leadership mission we implemented several years ago plays a big part in this. The training modules provide managers with tools to engage young generations and create a connection with the company.

The Jowat leadership mission:

Trust-based relationships safeguard the economic success:

1. We treat each other with respect as a matter of course.
2. We make decisions.
3. We speak plainly.
4. We provide leeway.
5. Changes for success.

The elements of this leadership mission are fundamental pillars on which successful and trust-based relationships are build and a prerequisite for the economic success of our enterprise.

Generation Z:

Generation Z will be one of the most urgently needed category of employees in future. And they are well aware of how valuable they are to employers. At the same time, there is a strong desire for a meaningful corporate purpose and flat hierarchies. Generation Z also have high expectations of their managers. They want less directions and evaluations and more incentives and solutions.

Within the framework of a project of our apprentices, we organized several workshops on a healthy diet for all employees at the location in Detmold. The workshops took place during working hours to encourage attendance. Interested employees then had the option to round the workshops off with a free health check.

FABEL stands for support for families in the Lippe region (FAMILIENBETREUUNG Lippe). As an association of companies in Lippe and the district of Lippe, the FABEL service is committed to facilitating the right balance between family and work. The FABEL service provides help and assistance in different family-related situations.



Nina Hilgenberg, head of Personnel Development: at the location in Detmold

Seminars:

Demand for the seminar “Rechtzeitig vorsorgen” (plan now for the future) was overwhelming. Over the course of 90 very informative minutes, a lawyer provided an in-depth explanation of legal documents such as powers of attorney, living wills and testaments. Due to the huge interest from German employees, the presentation can now also be watched on the JOSY information platform.

Diversity and Equal Opportunities

Our code of conduct makes it clear that we do not tolerate any discrimination based on age, gender, ethnicity, disability, religion or sexual identity. In the reporting period, no incidents of discrimination or disadvantage within the Group have come to our attention. If such incidents occur in the future, we will review each one individually and penalize them if necessary.

The proportion of women in management positions has continuously increased in the last years. From 2021 to 2022, it rose by a further 5% to now 42 female employees. The average rate in the industry is 23% according to the equal opportunity survey of the Association of Managers and Executives in the Chemical Industry. Our female managers also help mentees from other companies and share valuable experience with the young women. At several other Jowat locations, women in management positions also support female employees in taking on management tasks within the framework of mentoring programs.

We consider diversity an enrichment and want to create a diverse employee structure in the Jowat Group.

Fair Compensation

In our compensation system, we take objective criteria such as education into account across all locations and classify our employees in wage and salary groups according to their tasks. This procedure is always gender-neutral. The basic salary agreed on for salaried employees can be supplemented with different components, such as voluntary bonuses, premiums or variable salary components. Agreement of the corresponding compensation takes place according to the above-mentioned objective criteria and is without exception gender-neutral.



Our Contribution: Gender Equality and Reduced Inequalities

In our daily operations, we want to contribute to the UN Sustainable Development Goals SDG 5—Gender Equality, and SDG 10—Reduced Inequalities. Our code of conduct as well as our commitment to the balancing of personal and professional life reflect this objective in concrete terms. The equality officer at Jowat SE is responsible for continually drawing attention to potentials for development. This primarily concerns the equality of our employees as well as of people applying. After all, we want to give every person the same opportunity to develop personally and professionally in our enterprise.

The organization of occupational safety is to be audited by the competent social accident insurance institution for employers (Berufsgenossenschaft) confirmed with the “Sicher mit System” seal of approval.

Occupational Health and Safety

Employee safety has the highest priority at Jowat. We work continuously to mitigate risks and prevent occupational accidents. Compliance with all relevant laws and regulations is the basis for that and is mandatory. This applies to all our locations, even if implementation may be different from country to country.

The occupational safety policy and organization implemented at the Detmold location serves the goal of protecting and improving the health and safety of our employees. The organization thereby complements the legally required occupational safety committee (ASA). This also means that the occupational safety specialist, the company physician and the works council support the Board of Directors and the department heads in complying with and further developing the applicable rules. Finally, the organization of occupational safety is to be audited by the competent social accident insurance institution for employers (Berufsgenossenschaft) confirmed with the “Sicher mit System” seal of approval.

Further Measures at our Global Locations

Elsteraue (Germany): The location conducts monthly inspections to monitor aspects of safety, order, cleanliness and environmental protection at the plant. Any grievances are assigned to those responsible for rectification. This also includes the maintenance of the personal protective equipment of our employees.

Buchrain (Switzerland): The location is a member of the Federal Coordination Commission for Occupational Safety, an industry solution for small and medium-sized companies in the chemical industry in Switzerland. It is supported by the ECO SWISS organization, which reviews our measures every five years and makes recommendations for further improvement.



Our Contribution: Good Health and Well-Being

As a manufacturer of chemical products, Jowat bears a special responsibility for the health of its employees. Improper handling of hazardous chemicals would pose a health hazard at our manufacturing locations. We therefore consider SDG 3—Good Health and Well-Being—to be very important for the Jowat Group and promote it. With our occupational safety measures, we ensure that raw materials, semifinished goods and finished products are handled correctly and carefully at all production sites. Extensive protective equipment is available to ensure the safety of our employees. Risk assessments and training courses also help to identify risks in the work with chemicals and to minimize the risk as far as possible. In doing so, we take into account the TOP principle (hierarchy of measures with technical, organizational and personal measures).

High Point (USA): As planned in 2020, the location introduced the occupational health and safety policy and organization, which is guided by the same objectives as in Detmold. The local safety committee meets every two months to discuss current events, suggestions for improvement and additional measures.

Bandar Enstek (Malaysia): The local HSE officer reports relevant measures to the competent national authority on a monthly basis and passes on accident data. Our employees as well as employees of recruitment agencies receive information, instructions and training on safe working and on health protection.

Analyzing and Reducing Hazards

Our manufacturing locations regularly conduct risk analyses to identify, mitigate or, where possible, eliminate hazards. If occupational accidents occur, those incidents are discussed and improvement measures are initiated.

Work-related injuries

Rate of recordable work-related injuries per 200,000 hours worked.

Location	2021	2022
Detmold (Germany)	4.0	5.0
Elsteraue (Germany)	10.4	5.5
Buchrain (Switzerland)	17.9	6.7
High Point (USA)	2.3	3.0
Bandar Enstek (Malaysia)	0.9	0.0
Total Ø	7.1	4.0

Our measures to increase occupational safety include communication tools such as notices on information boards, internal rules and regulations, or digital presentations on screens.

There were no occupational accidents with serious high-consequence or fatal consequences in the reporting period. The rate of recordable work-related injuries averaged 7.1 (2021) and 4.0 (2022) injuries per 200,000 hours worked. Due to the relatively small number of employees in Buchrain (Switzerland), each injury is assigned a higher weighting in the calculation of the average. Therefore, Buchrain records the highest value within the Group, with 17.9 injuries in 2021 and 6.7 injuries in 2022 per 200,000 hours worked. The rate of days away from work due to work-related accidents at our manufacturing locations in the reporting period was 0.12% in the year 2021 and 0.09% in the year 2022. Work-related illnesses were not identified at any of our manufacturing locations in the reporting years.

Promoting Good Health

At all manufacturing locations, Jowat provides benefits that include preventive medical examinations and insurance payments in the event of accidents or illness. Those benefits are only covered by basic health insurance at the Swiss location in Buchrain. Employees at the locations in Germany who return to work after a lengthy illness can gradually become re-accustomed to their daily work through measures of gradual reintegration. Within that process, we ensure occupational medical support. Training on occupational safety and health protection is carried out at all Jowat manufacturing locations. The frequency and type of instruction are regulated by the individual locations. The instructions take place either digitally or in person and also include a practical part.

To raise awareness of a healthy life among our employees, we also cooperate e.g. with health insurance firms and provide competent point of contact for a wide range of health-related topics.

Safety Measures for Third Parties

Visitors as well as external companies and business partners must register before entering a Jowat manufacturing location. Before entering the premises, e.g. to provide services in the production area, they receive safety training via EPLAS—an occupational safety software. At the Detmold and Buchrain (Switzerland) locations, protective equipment must also be worn depending on the area visited.

Raising Awareness among Employees

A safe workplace and good health depend not least on the personal responsibility of each and every individual person. Therefore, Jowat focuses on raising employee awareness of this issue. Measures include making occupational safety a topic in our internal communication channels and giving employees the opportunity to submit suggestions for the improvement of occupational safety. At the Detmold and Buchrain (Switzerland) locations, the ideas are evaluated and prizes are rewarded if they are implemented.

Commitment to Society

Children and young people of today are our employees of tomorrow. Therefore, we want to spark their interest in science at an early age and are taking different actions to that end. In cooperation with the regional newspaper *Lippische Landes-Zeitung*, we organize a “Children’s University” for pupils, ages nine to twelve, at our Detmold location. Our initiative has also led to chemistry being reintroduced as a advanced level subject on the curriculum of high schools in Detmold, after several years.

Awakening Curiosity for the Natural Sciences

We open our doors to school groups for plant tours which also include lab experiments. Together with the German chemical industry association (Verband der Chemischen Industrie e.V.—VCI), we are also committed to providing exciting and realistic chemistry lessons in schools. Through the association’s fund, we support such measures financially and with information materials from the chemistry school partnership (Schulpartnerschaft Chemie).

**The children and young people of
today are our workforce of tomorrow.**

Another focus in our work to promote young talent is to support young people in the start of their professional lives. For that purpose, Jowat has been offering the “International Partnership Program” in cooperation with several other companies, the East Westphalia-Lippe industrial and commercial club (Industrie-und Handelsclub Ostwestfalen-Lippe), and four universities. The program is aimed at students majoring in the field of economics and gives them the opportunity to complete a three-month internship abroad.

Our subsidiary in Switzerland is committed to providing apprenticeships and training in the woodworking and furniture trades and supported the Swiss carpenters’ training network and the national carpenters’ association in the reporting period.

Blood Drive Bus at Jowat

The German Red Cross (DRK) regularly visits Jowat with a blood drive bus. Jowat SE supports the campaign by counting the time for the blood donation as working time. Within the framework of the blood drive, donors also had the opportunity to register as marrow and blood stem cell donors with the Westdeutsche SpenderZentrale donor center.



Pupils studying in Jowat’s “Children’s University”

There was a big interest from the employees of Jowat SE in both drives. About 50 employees at the location in Detmold made the decision to donate blood. Ten people additionally also registered with the Westdeutsche SpenderZentrale.

Jowat for Ukraine

In February 2022, Russian troops launched their full-scale invasion of Ukraine. Russia has since then been waging its war of aggression with increasing levels of brutality and destruction. The war in Ukraine also triggered a wave of solidarity of the Polish people. The employees of Jowat Polska have also been very much involved in the provision of aid to refugees (material and financial donations). Board of Directors member Klaus Kullmann: “In March 2022, €3,600 in donations were sent from Detmold, High Point and Poznan. The money was used to buy a fourth ambulance as well as fire extinguishing equipment and medicines for Ukraine.”

GRI Content Index

Jowat SE has reported in accordance with the GRI Standards for the period January 1, 2021 to December 31, 2022. For the Content Index - Essentials Service, GRI Services reviewed that the GRI content index is clearly presented, in a manner consistent with the Standards, and that the references for disclosures 2-1 to 2-5, 3-1 and 3-2 are aligned with the appropriate sections in the body of the report. The service was performed on the German version of the report.



CONTENT INDEX
ESSENTIALS SERVICE

2023

GRI Universal Standards 2021	Page	Comment
GRI 1: Foundation 2021	4	This Sustainability Report follows the framework of the Global Reporting Initiative (GRI).
GRI 2: General Disclosures 2021		
2-1: Organizational details	4/6/7	
2-2: Entities included in the organization's sustainability reporting	4/7	Consolidated Financial Statements Jowat SE in the German Federal Gazette.
2-3: Reporting period, frequency and contact point	4/46	
2-4: Restatements of information		No restatements of information
2-5: External assurance		There was no external audit of the disclosures in this report.
2-6: Activities, value chain and other business relationships	5-7/16	
2-7: Employees	6/7/34	
2-8: Workers who are not employees	33	
2-9: Governance structure and composition	3/7	
2-10: Nomination and selection of the highest governance body	7	The six members of the Supervisory Board of Jowat SE, the highest governance body of the corporate group, must be personally eligible to fulfill the statutory duties of a supervisory board member. The Supervisory Board always comprises a majority of members who are not related to the owner families.
2-11: Chair of the highest governance body	7	
2-12: Role of the highest governance body in overseeing the management of impacts	7/9/11/14/24/28/32	
2-13: Delegation of responsibility for managing impacts	11/24/34/37	
2-14: Role of the highest governance body in sustainability reporting	9/11	
2-15: Conflicts of interest	14	
2-16: Communication of critical concerns	9/14	
2-17: Collective knowledge of the highest governance body	11	
2-18: Evaluation of the performance of the highest governance body	9	
2-19: Remuneration policies		Our remuneration policy for the members of the Supervisory Board and the senior executives offers a fixed pay and a variable pay.
2-20: Process to determine remuneration		The independent Supervisory Board determines the performance-related pay of the Board of Directors, taking into consideration the views of the shareholders. The performance-related pay of senior executives across all locations is generally determined based on objective criteria and is always gender-neutral.
2-21: Annual total compensation ratio		This information is protected to ensure confidentiality.
2-22: Statement on sustainable development strategy	11-14	
2-23: Policy commitments	8/11-14/24-30/37	
2-24: Embedding policy commitments	9/13/14/30	
2-25: Processes to remediate negative impacts	14	
2-26: Mechanisms for seeking advice and raising concerns	14/21	

GRI Universal Standards 2021		Page	Comment
GRI 2: General Disclosures 2021	2-27: Compliance with laws and regulations	14/21/22/24	
	2-28: Membership associations	14/38/39	
	2-29: Approach to stakeholder engagement	11/14/21/30/34/35/37/38	
	2-30: Collective bargaining agreements		Our remuneration is not linked to collective bargaining agreements. Therefore, the remuneration of our employees is not covered by collective bargaining agreements.
GRI 3: Material Topics 2021	3-1: Process to determine material topics	11/12	
	3-2: List of material topics	13	
Material Topics			
Products for tomorrow			
GRI 3: Material Topics 2021	3-3: Management of material topics	21/22/28	
GRI 416: Customer Health and Safety 2016	416-1: Assessment of the health and safety impacts of product and service categories	21/28	
	416-2: Incidents of non-compliance concerning the health and safety impacts of products and services	21	
GRI 417: Marketing and Labeling 2016	417-1: Requirements for product and service information and labeling	21	
	417-2: Incidents of non-compliance concerning product and service information and labeling	22	
	417-3: Incidents of non-compliance concerning marketing communications	22	
GRI 418: Customer Privacy 2016	418-1: Substantiated complaints concerning breaches of customer privacy and losses of customer data	22	
More resource-conserving manufacturing			
GRI 3: Material Topics 2021	3-3: Management of material topics	7/9/13/14/24-28/33	
GRI 201: Economic Performance 2016	201-1: Direct economic value generated and distributed	7	Consolidated Financial Statements Jowat SE in the German Federal Gazette.
	201-2: Financial implications and other risks and opportunities due to climate change	9	
	201-3: Defined benefit plan obligations and other retirement plans	33	Consolidated Financial Statements Jowat SE in the German Federal Gazette.
	201-4: Financial assistance received from government	7	
GRI 205: Anti-corruption 2016	205-1: Operations assessed for risks related to corruption	14	
	205-2: Communication and training about anti-corruption policies and procedures	13/14	
	205-3: Confirmed incidents of corruption and actions taken	14	
GRI 301 Materials 2016	301-1: Materials used by weight or volume	27	
GRI 302: Energy 2016	302-1: Energy consumption within the organization	25	
	302-3: Energy intensity	25	
	302-4: Reduction of energy consumption	24	
GRI 303: Water and Effluents 2018	303-1: Interactions with water as a shared resource	29	
	303-2: Management of water discharge-related impacts	29	
	303-3: Water withdrawal	29	
	303-4: Water discharge	29	

GRI Universal Standards 2021		Page	Comment
GRI 305: Emissions 2016	305-1: Direct (Scope 1) GHG emissions	26	
	305-2: Indirect (Scope 2) GHG emissions	26	
GRI 306: Waste 2020	306-1: Waste generation and significant waste-related impacts	28	
	306-2: Management of significant waste-related impacts	28	
	306-3: Waste generated	28	
GRI 415: Public Policy 2016	415-1: Political contributions		Jowat SE did not make any donations to political parties in the reporting period.
Responsible procurement practices and supply chain			
GRI 3: Material Topics 2021	3-3: Management of material topics	30	
GRI 204: Procurement Practices 2016	204-1: Proportion of spending on local suppliers	30	
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	30	We are not aware of any operations and suppliers in which the right to freedom of association and collective bargaining may be at risk.
GRI 408: Child Labor 2016	408-1: Operations and suppliers at significant risk for incidents of child labor	30	
GRI 409: Forced and Compulsory Labor 2016	409-1: Operations and suppliers at significant risk for incidents of forced or compulsory labor	30	
GRI 414: Supplier Social Assessment 2016	414-1: New suppliers that were screened using social criteria	30	
	414-2: Negative social impacts in the supply chain and actions taken	30	
Healthy and satisfied employees			
GRI 3: Material Topics 2021	3-3: Management of material topics	7/30/32-35/37-39	
GRI 203: Indirect Economic Impacts 2016	203-1: Infrastructure investments and services supported	39	
GRI 401: Employment 2016	401-1: New employee hires and employee turnover	34	
	401-2: Benefits provided to full-time employees that are not provided to temporary or part-time employees	32	
	401-3: Parental leave	32/33	Currently, we can only report data on parental leave for our German locations. We plan to collect this data for the other locations in the future.
GRI 402: Labor/Management Relations 2016	402-1: Minimum notice periods regarding operational changes	30/32/33	Jowat complies with the applicable legal requirements with regard to notification deadlines.
GRI 403: Occupational Health and Safety 2018	403-1: Occupational health and safety management system	37/38	
	403-2: Hazard identification, risk assessment, and incident investigation	37/38	
	403-3: Occupational health services	37/38	
	403-4: Worker participation, consultation, and communication on occupational health and safety	39	
	403-5: Worker training on occupational health and safety	39	
	403-6: Promotion of worker health	38/39	
	403-7: Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	39	

GRI Universal Standards 2021		Page	Comment
GRI 403: Occupational Health and Safety 2018	403-9: Work-related injuries	38	
	403-10: Work-related ill health	38	
GRI 404: Training and Education 2016	404-1: Average hours of training per year and per employee	35	
	404-2: Programmes for upgrading employee skills and transition assistance programmes	34/35	
	404-3: Percentage of employees receiving regular performance and career development reviews	34/35	
GRI 405: Diversity and Equal Opportunity 2016	405-1: Diversity of governance bodies and employees	7/37	Beyond the proportion of women in management positions, no information is currently available on employee categories, age group, etc. We plan to expand data collection in this regard.
	405-2: Ratio of basic salary and remuneration of women to men	37	
GRI 406: Non-discrimination 2016	406-1: Incidents of discrimination and corrective actions taken	37	

Imprint

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