

STATE OF THE ENVIRONMENT REPORT FOR **2021**



PRECHEZA a.s. is an important European manufacturer of high quality titanium dioxide and other inorganic pigments. It is a safe, modern, and well-managed company which takes the environment into consideration in all of its activities.

PRECHEZA Joint Stock Company

with its registered address in Přerov has a nearly 130-year-long tradition, especially in the production of inorganic chemical products. Today, PRECHEZA is the largest inorganic pigment manufacturer in the Czech Republic. It is also a founding member of the Association of Chemical Industry of the Czech Republic, a member of the Association of Paint Manufacturers of the Czech Republic and an active member of the Czech Chamber of Commerce and a member of the Titanium Dioxide Manufacturers Association (TDMA) in the European Union.



The manufacturing technologies the company uses are based on its own know-how and are compliant with European norms both with regard to environmental protection and application of the best available technology.

The company's management and all its integral parts, especially the Safety Management and Occupational Health and Safety, Quality and Environmental Protection and Energy Management Systems are built in accordance with the internationally recognized ISO 9001, ISO 14001, ISO 45001, and ISO 50001 standards. The company has also implemented Food Safety Management under FSSC 22000 standard for food grade titanium dioxide production. Individual products are further certified for compliance with the applicable legislative and technical norms. Expert supervision is conducted by external authorized persons. Since 1994 PRECHEZA has been engaged in the world-wide RESPONSIBLE CARE initiative – responsible care and business in chemistry.

PRECHEZA's manufacturing program is oriented mainly to manufacturing inorganic pigments and chemicals produced as intermediate products in main production. PRETIOX titanium dioxide is PRECHEZA's most important product – its sales account for approx. 88% of the company's total turnover. PRECHEZA also manufactures iron oxide pigments (6% of the company's turnover), sulfuric acid (1%) and other chemical substances. PRECHEZA exports more than 90% of its production.

State of the Environment Report

A systemic approach to the environment and occupational safety

Responsible Care

PRECHEZA a.s. conforms with the eight basic principles of the RESPONSIBLE CARE – responsible business in the chemical industry – a voluntary program:



1. Corporate leadership culture, which proactively supports safe handling of chemical substances within the Responsible Care global initiative.
2. Protection of people and environment by continuously improving the environment, health and safety performance, safety of facilities, processes and technologies, and by continuous improvement of the safety of chemical products and caring for our products in the whole supply chain.
3. Improving chemical management systems by participating in the creation and implementation of legislation and tried and tested procedures, oriented to the product life cycle, scientifically proven results, and chemical safety.
4. Working with business partners in order to support safe handling of chemical substances within their application.
5. Engaging interested parties in order to understand their concerns and expectations for safe production and products, forthcoming communication concerning our products and results.
6. Contributing to sustainable development by way of improving performance, expanding economic opportunities and development of innovative technologies and further solutions by facing up to social challenges.

Basic principles of „RESPONSIBLE CARE“ in the field of environment are laid down in the approved “Integrated Management Systems Policy” of the joint stock company and in the RC programme. After the 9th successful defense PRECHEZA a.s. has the right to use the RESPONSIBLE CARE logo – responsible business in the chemical industry – until October 2024.

Integrated Policy of the Management Systems

PRECHEZA a.s. abides itself by the basic principles of the RESPONSIBLE CARE GLOBAL CHARTER - a voluntary initiative for responsible business in chemistry:

- occupational health and safety (OH&S) of employees and other persons within the company's site, prevention of major accidents (PMA) from activities with specified chemical substances for humans,
- the environment and assets within the company's site and its surroundings,
- reducing negative impacts of the company on the environment,
- assurance of specified, agreed or assumed quality and safety of products, services and processes, improvement of energy performance in manufacturing and non-manufacturing activities of the company as well as in objects in its ownership and the procurement of energy efficient products and services that impact energy performance.

In accordance with this approach PRECHEZA a.s. commits itself:

1. To comply with applicable legal requirements and other requirements to which the company subscribed in the areas of the OH&S, PMA, quality and environmental management as well as in relation to energy efficiency, energy use and energy consumption.

2. To improve performance and the management system of the company, continually and with objectives, in the areas of the OH&S, PMA, in environmental impacts of the company's activities, in quality of production, services and processes and in energy performance together with supplying all necessary information and resources to achieve established objectives and targets.
3. To provide safe and healthy working conditions and environmental protection by systematic identification of relevant risks, their assessment, elimination of hazards and reduction of risks and to care about prevention of injuries, major accidents, health damages, pollutions or other negative environmental impacts, imperfect products, services, and processes as well as uneconomic uses of energy.
4. To ensure the complex competence, training and motivation of employees towards the correct and safe control of processes as well as awareness of their own responsibility in influencing the OH&S, PMA, environment, quality and energy use.
5. To communicate openly with relevant partners in the areas of the OH&S, PMA, environment, quality and energy management, to ensure necessary consultation and participation of workers or their representatives in OH&S processes and to provide necessary information for adjusting reciprocal obligations, documenting their execution and achieving feedback to improve performance.

The commitments of the Integrated Policy of Management Systems are reflected into a set of internal management documents that define rights, duties, and operational procedures in the areas of the OH&S, PMA, environment, quality, and energy use for individual working positions of the company and its organisational departments.

The commitments of the Integrated Policy of Management Systems serve for the company's management as a basis for establishing specific, time-bound and periodically checked objectives and targets in the areas of the OH&S, PMA, environment, quality and energy use.

The Integrated Policy of the OH&S, PMA, environmental, quality and energy management systems is binding on all employees of PRECHEZA a.s. and open to the general public. It is communicated to all individuals who work for the company or to those acting upon the company's authority. The management of the company is responsible for its implementation, understanding and maintenance on all levels of the organisation.

Management Systems Certificate

During May 2021 the team of auditors from Bureau Veritas Certification CZ conducted a recertification audit of the Quality management systems in compliance with the ISO norms 9001:2016 (QMS) and Environmental management systems in compliance with the ISO norms 14001:2016 (EMS), based on which new certificates have been issued. At the same time the first supervisory audit of the Energy management systems in compliance with the ISO norms 50001:2019 (EnMS) and of the Occupational health and safety management systems in compliance with the ISO norms 45001:2018 (SM BOZP) took place and it has confirmed the validity of the previously issued certificates.



Compliance with legal norms and other regulations

In 2020, PRECHEZA met its reporting obligations via the Integrated System of Reporting Obligations (ISPOP).

Compulsory measurements in 2020 proved compliance with the binding emission limits at all sources, with regard to both air and water. Waste management was set up in accordance with valid permits.

The company runs a system which allows efficient identification of legal and other requirements, control of their implementation and timely solutions of identified issues.

Development, investments and other environment-related costs

Precheza a.s. consistently invests considerable amounts into environmental protection, both into the installation of new facilities, as well as into the renewal and modernization of existing ones, including their operation. 2021 was no exception. Investments into the acquisition of the equipment for the protection of environment amounted to approx. 34 MM CZK. This was chiefly spent on the renewal of the electrostatic separator in the production of iron oxide pigments and MONOSAL within the scope of the shutdown.



Air protection

PRECHEZA a.s. operates the following stationary pollution sources:

1 – Inorganic pigment manufacturing 2 – Sulphuric acid manufacturing (S1)

Operation of these sources generates emissions of SO_x (expressed as SO_2), dust, NO_x (expressed as NO_2) and CO, for which relevant binding emission limits are set for individual emission ducts and measuring points.

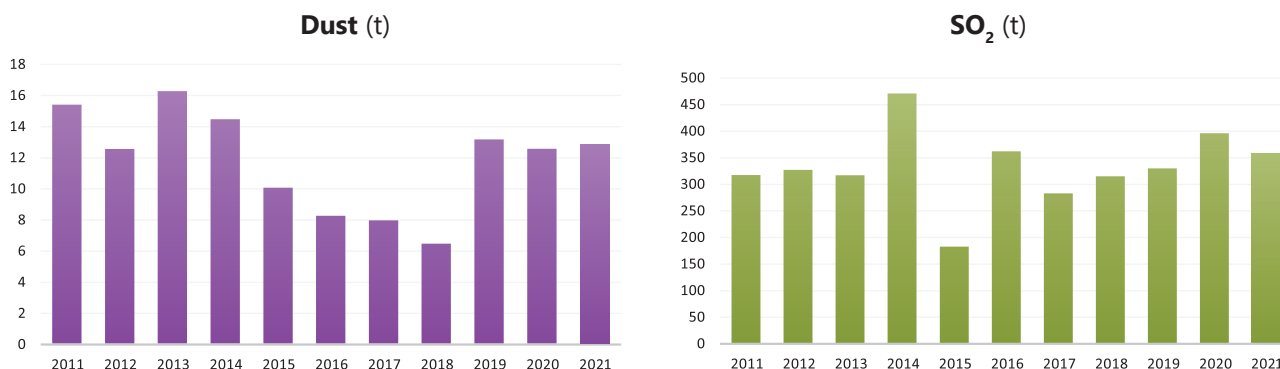
The total atmospheric emissions (in tons per year) in 2021 and the previous years are shown in the following chart:

Year	SO ₂	Dust	NO ₂	CO
2017	283	7.9	69.8	3.8
2018	315	6.4	65.0	4.4
2019	315	13.1	81.0	6.8
2020	396	12.5	80.1	6.2
2021	358	12.8	79.9	4.9

Atmospheric emissions were compliant with the limits set out in the integrated permit and with the requirements for the so-called best available technology (BAT) outlined in relevant European reference documents (BREF).

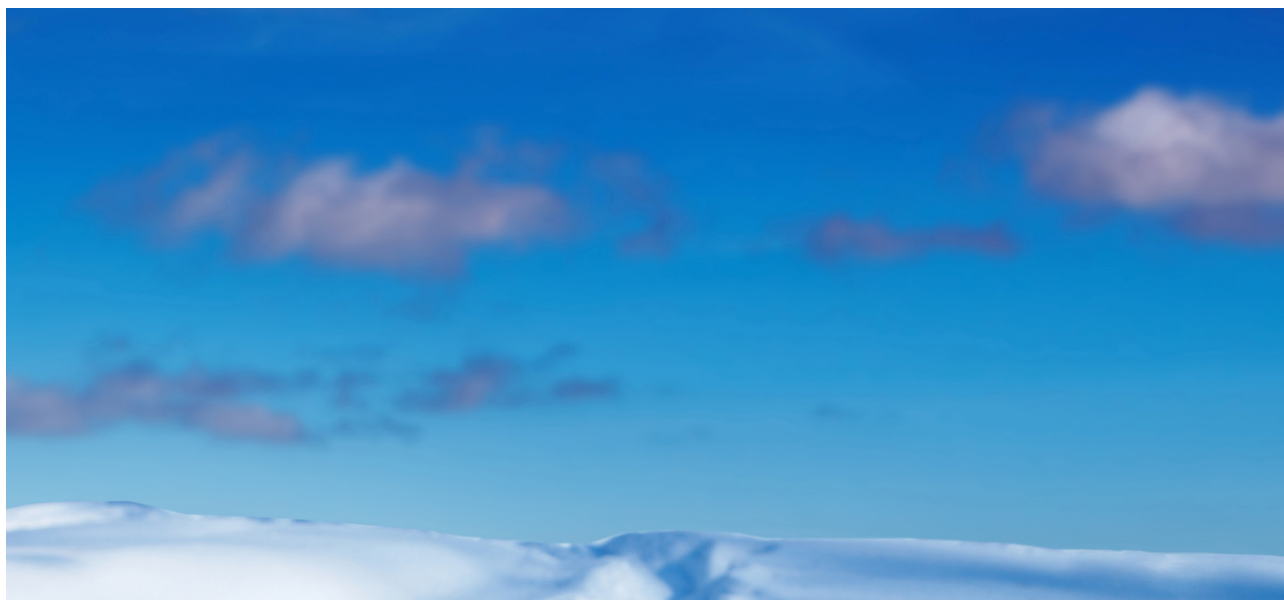
In the integrated permit, PRECHEZA a.s. has stricter limits than the general national and specific Czech limits or the limits that can be found in the relevant EC directives with regard to some items. Emission level values are generally at the lower end of the interval for the European Best Available Techniques, which means maximum performance in the EU pigment manufacturing industry.

The dynamics of air emissions of key substances in the recent years are shown in the following charts:



The total volume of key emissions into the atmosphere has decreased interannually, in the case of sulfur oxides (approx. by 10%), however, there has been an increase in the emissions of particulate matter (approx. by 2%). This development has been influenced partly by lower production in 2021, as a result of the production shutdown during 2021, and partly by the current state of the equipment in the said period. The significant decrease of SO₂ emissions in 2015, which is visible in the graph, was caused by a long-term shutdown of the sulfuric acid production.

Since 2013, PRECHEZA has been listed in the European Emissions Trading System for Greenhouse Gases (EU



ETS). In 2021, 94 854 tons of CO_{2e} were produced (in 2020 the figure stood at 103 263 tons CO_{2e}, in 2019 at 100 896 t CO_{2e}). The course of the emissions is directly linked to the development in the production of titanium dioxide, or rather to the connected consumption of limestone at the neutralization station, and also to the consumption of natural gas in the heat processes of pigment production.

Water protection

PRECHEZA makes saving natural resources, minimizing pollution and recycling water in technology its long-term priorities. Wastewater is purified and its quality and quantity are in conformity with the integrated permit in all their indicators. White gypsum PREGIPS is obtained by neutralization of certain technological waters and the rest are used for producing red gypsum PRESTAB. With regard to groundwater protection, the company carries out long-term regular monitoring of quality of groundwater on its premises and in the surrounding areas. Monitoring and evaluation are performed in a specialized hydrogeological form.

PRECHEZA a.s. complies with emission limits of pollution released out of the neutralization station for concentration of soluble inorganic salts (SIS), sulfate ions, non-soluble substances (NS), total iron (Fe_{total}) and for the chemical oxygen demand (COD_{Cr}).

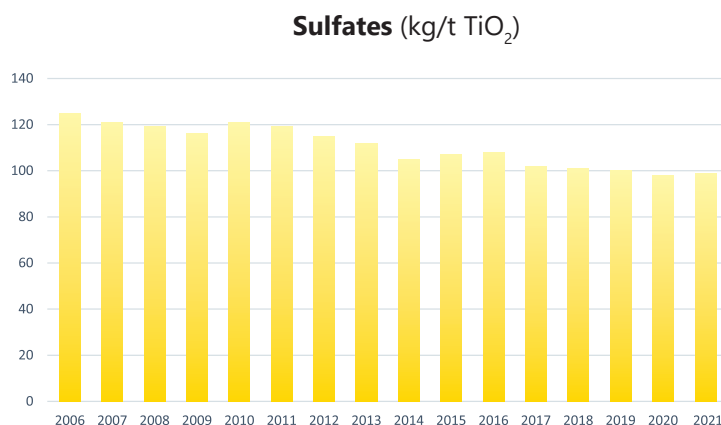


The total water emissions in tons per year in 2020 and before are shown in the following chart:

Year	SIS	Sulfates	NS	Fe total	COD_{Cr}
	(t/year)	(kg/t TD)	(t/year)	(t/year)	(t/year)
2017	9,534	102	10.0	0.5	46.0
2018	8,950	101	9.3	0.5	41.0
2019	9,945	100	6.0	0.6	34.0
2020	9,664	98	5.4	0.6	2.0
2021	9,422	99	11.4	0.6	4.6
Emission limit	15,000	400	80	18	250

Water emissions were compliant with the limits set in the integrated permit and with the requirements for the so-called best available technology (BAT) outlined in European reference documents (BREF).

Sulfate emission in wastewater is typical for titanium dioxide production. The dynamics of this parameter in the recent years is shown in the following chart:



2021 was a good year in terms of the possibilities of raw water abstraction for the technology, in comparison with the previous years of 2015-2019. The flow rate in the accessible water sources, which are the Bečva river and the stream Strhanec, did not limit the water abstraction and even the abstraction from Strhanec was made possible during the summer dredging of the Bečva river. In the area of emissions into water, the results of the component parameters are largely comparable to the previous period and are proportionate to the production volume, as well as the unit volumes of the emitted treated water back into the river. The only exception, as in the previous year, is the content of CHSKCr, where there has been a radical decrease from tens of tons per year to single figures per year, owing to the fall in the consumption of organic additives during titanium dioxide milling by adjusting the technology.

Waste

Waste management was carried out in accordance with the applicable valid legislation in 2021.

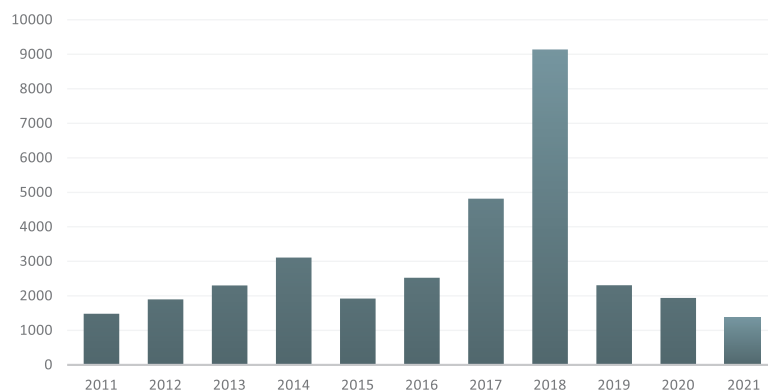
Total amount of waste in previous years

Waste type	Limit	2016	2017	2018	2019	2020	2021
Hazardous	tons	854	3,311	7,768	21	826	452
Other	tons	1,656	1,506	1,374	2,289	1,112	990
Total	tons	2,510	4,817	9,142	2,310	1,939	1,442

The total volume of produced waste decreased interannually by 26%, and therefore has been the lowest in the last 25 years. In both categories of waste, i.e., the “other waste” and the „hazardous waste“, a drop has been recorded. In the field of handling waste in 2021 PRECHEZA continued to co-operate with its long-time exclusive partner – company SUEZ CZ.

Waste (t)

From the long-term perspective, the development of waste is as follows.



Energy consumption

Energy consumption in 2021 and before is shown in the following chart:

Year	2018	2019	2020	2021
Electric energy (GJ)	266,819	283,654	288,306	272,718
Steam consumption (GJ)	739,812	743,311	736,759	694,350
Gas consumption (GJ)	817,052	907,198	885,012	839,195
Total energy consumption (GJ)	1,807,539	1,927,198	1,910,077	1,806,263
Water consumption - from the river (m³)	2,530,000	2,807,100	2,737,544	2,812,400
- drinking water (m³)	48,505	52,243	40,579	47,905

The long-term trend of energy consumption in production – expressed \ in GJ of energy consumed per ton of manufactured pigment – has been decreasing.

Occupational safety

The indicator of occupational safety the company uses is the number of industrial injuries per 100 employees. An industrial injury is defined as damage to health causing inability to work for a period of over 3 calendar days. The values for 2021 and previous years are as follows:

Year	Number of industrial injuries	Frequency per 100 employees	Severity (avg. % of inability to work)
2017	10	1.60	0.19
2018	13	2.00	0.30
2019	4	0.61	0.17
2020	14	2.24	0.18
2021	8	1.23	0.35

The injuries mainly occurred due to a lack of attention and risk underestimation at work. Statistically, the highest number of injuries were linked to falls and stumbling and as a result of industrial toxic substances, also due to moving heavy loads. In all cases of injury, remedial steps have been taken.

The conformity between hygiene requirements and the working conditions in the company is ensured by regular monitoring of working conditions, especially by measuring levels of industrial hazards in the working environment (especially, dust and noise) in an authorized lab. The measurements the company has carried out indicated conformity with the current categorization of work.



Activities for community and society

PRECHEZA a.s. bases its relationship with community on informational openness, one of the guiding principles of Responsible Care.

PRECHEZA a.s. discloses reliable and timely information about its impact on the environment and the implementation of the comprehensive environmental protection program. It informs general public in the media about its manufacturing program and the results of implementation of its environmental management program. It always places an emphasis on timely consultations about its investment projects with relevant public authorities.

The company has been awarded the prestigious Regional Employer of the Year several times.

Sponsorship and promotional activities are primarily aimed at selected interest groups (particularly children and young people) with the goal of promoting and explaining the role of chemical industry in our everyday life, and in creating advanced economy. PRECHEZA a.s. gathers young people for studying chemistry and on the whole contributes to the improvement of the quality of life in the region. Furthermore, it supports selected cultural and sports events. PRECHEZA continually supports charitable projects, either by way of the Agrofert Foundation, or through direct collaboration with Přerov Charity.



PRECHEZA is a significant and reliable employer. It offers a range of outstanding benefits to its employees and creates safe working conditions and job security from a good employer. It remains in contact with former, retired employees, keeping them abreast about the happenings in the company by way of sending them the company magazine PRECHEZA Newspaper.

Sports and cultural events, organized every year by PRECHEZA for its employees and their families, regrettably had to be cancelled in 2020 due to the COVID pandemic. The company at least tried to support individual sport, for instance, by taking part in the nationwide Bike to Work project.

PRECHEZA a.s. takes good care of its buildings, as well as the greenery on its premises and in the vicinity with the goal of improving the work environment for its employees, visitors, and citizens of the town. The company's goal is to intensify its social role as one of the major business entities in the region and to show the wider public that it is a safe, modern, and well-run company with a future.

Selected socially beneficial of PRECHEZA a.s.:

- support of charity projects in the region
- long-standing co-operation with the Secondary Technical School Hranice, Pardubice University of Pardubice, Technical University of Ostrava and Palacký University Olomouc and other schools in the region
- regional round of the knowledge contest for students of chemistry in collaboration with Jakub Škoda Grammar School in Přerov
- support of the Czechoslovak Jazz Festival
- co-operation within the Association of Chemical Industry of the Czech Republic, TDMA
- general partner of the Women's Volleyball Extraliga team PVK PRECHEZA
- support of car races organized by Autoklub PRETIOX
- support of the development of Přerov ice-hockey, especially aimed at the youngest athletes
- implementation of specific measures of the local program for improving the air quality for the town of Přerov



Joint stock company identification

Company name: PRECHEZA a.s.
 Registered address: nábr. Dr. Edvarda Beneše 1170/24
 Přerov I - Město
 750 02 Přerov
 Česká republika

Business ID: 26872307
 Tax ID number: CZ 26872307
 Industrial Classification of Economic Activities
 (OKEČ) Code 241200

Telephone: +420 581 252 111
 Fax: +420 581 217 048
 Email: precheza@precheza.cz

www.precheza.cz

Společnost zapsána v Obchodním rejstříku vedeném
 Krajským soudem v Ostravě, oddíl B, vložka 29

