



**RESPONSIBLE CARE®**  
OUR COMMITMENT TO SUSTAINABILITY

# STATE OF THE ENVIRONMENT REPORT FOR 2022

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.

5/2023



## PRECHEZA

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®**  
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### Responsible Care

PRECHEZA a.s. conforms with the six 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 organizational departments.

The commitments of the Integrated Policy of Management Systems serve for the company's management as a basis for establishing specific, timebound 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 organization.



## Management Systems Certificate

During June 2022, the audit team of Bureau Veritas Certification CZ carried out the 1st surveillance audit of the quality management system according to ISO 9001:2016 (QMS) and the environmental management system according to ISO 14001:2016 (EMS). At the same time, the 2nd surveillance audit of the energy management system according to ISO 50001:2019 (EnMS) and the occupational safety management system according to ISO 45001:2018 (OHSM) was carried out. The audit confirmed the validity of the previously issued certificates.

## Compliance with legal norms and other regulations

In 2022, PRECHEZA met its reporting obligations via the Integrated System of Reporting Obligations (ISPOP). Compulsory measurements in 2022 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

Environmental care is continuously supported both by investments in new facilities as well as in the renovation and modernization of existing facilities. Approximately EUR 27 million was invested in the acquisition of environmental protection equipment in 2022. CZK. This mainly involved the initiation of investment campaigns to reduce SO<sub>2</sub> emissions from decomposition, the SO<sub>2</sub> scrubber behind the K-system or the renewal of the dedusting of the Monohydrate pneumatic transportation.



## 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<sub>x</sub> (expressed as SO<sub>2</sub>), dust, NO<sub>x</sub> (expressed as NO<sub>2</sub>) and CO, for which relevant binding emission limits are set for individual emission ducts and measuring points.

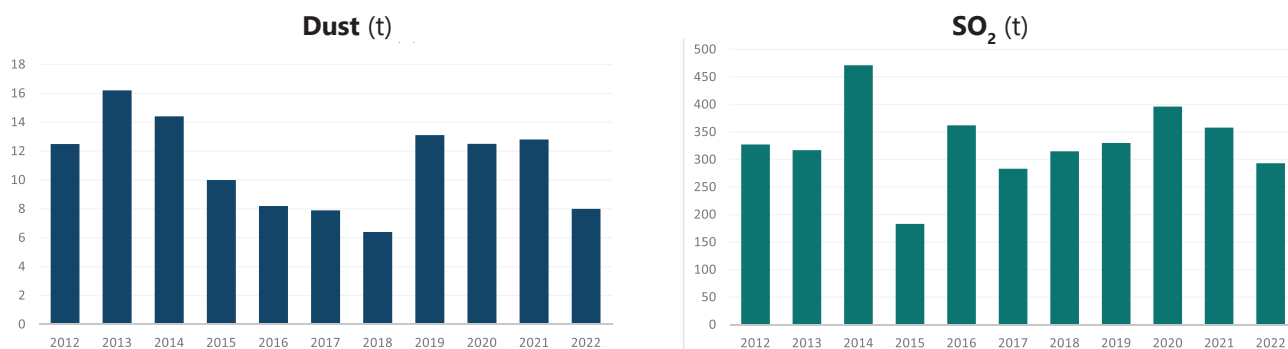
The total atmospheric emissions (in tons per year) in 2022 and the previous years are shown in the following chart:

| Year | SO <sub>2</sub> | Dust | NO <sub>2</sub> | CO  |
|------|-----------------|------|-----------------|-----|
| 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 |
| 2022 | 298             | 8.0  | 63.3            | 4.7 |

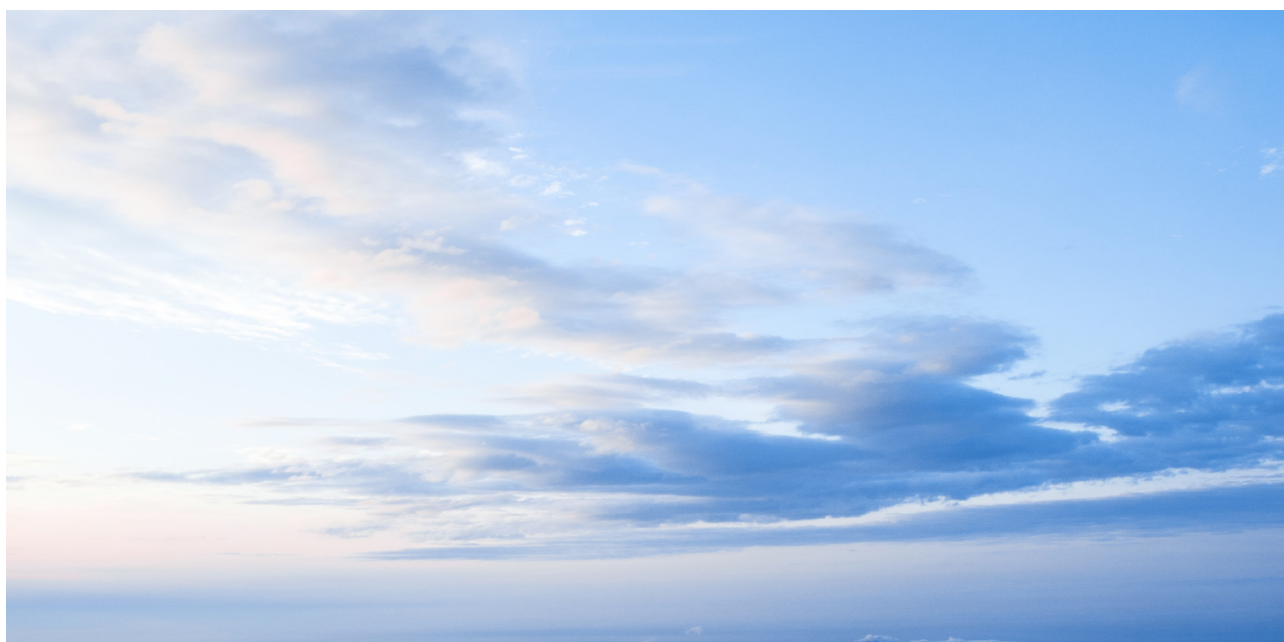
Atmospheric emissions were compliant with the limits set out in the integrated permit and with the requirements for the so-called best available technology (BAT) outlined in relevant European reference documents (BREF).

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:



Total air emissions decreased year-on-year for all key pollutants. Sulphur oxides decreased by 18 %, particulate matter by 37 % and nitrogen oxides 21 %. In the long term, 2022 was one of the years with the lowest overall emissions burden from Precheza. The significant decrease in SO<sub>2</sub> emissions in 2015, as seen in the graph, was due to the long-term shutdown of the sulphuric acid plant.



Since 2013, Precheza has been included in the European greenhouse gas emission allowance trading system (EU ETS). In 2022, the recorded production was 91,919 tons of CO<sub>2e</sub> (94,854 tons of CO<sub>2e</sub> in 2021 and 103,263 tons of CO<sub>2e</sub> in 2020). The development of emissions is directly proportional to the development of titanium dioxide production and the related consumption of limestone at the neutralization plant and natural gas in the thermal processes of pigment production, respectively.

## 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.

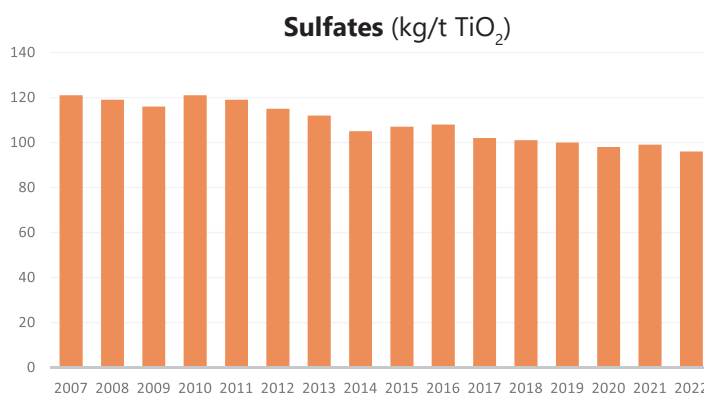
PRECHEZA a.s. complies with emission limits of pollution released out of the neutralization station for concentration of soluble inorganic salts (SIS), sulfate ions, non-soluble substances (NS), total iron ( $Fe_{total}$ ) and for the chemical oxygen demand ( $COD_{Cr}$ ).

The total water emissions in tons per year in 2022 and before are shown in the following chart:

| Year           | RAS      | Sulfates  | NS       | Fe total | $COD_{Cr}$ |
|----------------|----------|-----------|----------|----------|------------|
|                | (t/year) | (kg/t TD) | (t/year) | (t/year) | (t/year)   |
| 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        |
| 2022           | 9,134    | 96        | 11.9     | 0.5      | 18.6       |
| Emission limit | 15,000   | 500       | 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:



Unit volumes of water consumed in 2022 were at the level of the previous year, and the overall trend is positive in the long-term perspective in terms of decreasing consumption. In addition, the preparation of adaptation measures for possible water shortages in times of drought continued. Pollution of the discharged water by measured pollutants was also at a comparable level to recent years. As in years past, the exception is  $COD_{Cr}$  which again showed some increase after an order of magnitude decrease in 2020 and 2021. The value of this parameter is related to the consumption of organic additives in the production of titanium dioxide.



## Waste

Waste management was carried out in accordance with the applicable valid legislation in 2022.

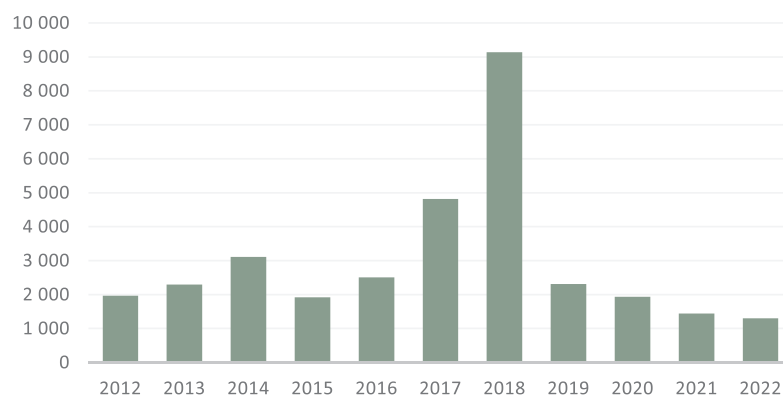
### Total amount of waste in previous years

| Waste type       | Limit | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  |
|------------------|-------|-------|-------|-------|-------|-------|-------|
| <b>Hazardous</b> | tons  | 3,311 | 7,768 | 21    | 826   | 452   | 284   |
| <b>Other</b>     | tons  | 1,506 | 1,374 | 2,289 | 1,112 | 990   | 1,016 |
| <b>Total</b>     | tons  | 4,817 | 9,142 | 2,310 | 1,939 | 1,442 | 1,300 |

The total volume of waste produced in 2022 fell again and was the lowest in the last 25 years. The volume of hazardous waste fell year-on-year (from 452 tons to 284 tons), while the volume of other waste was slightly higher (from 990 tons to 1,016 tons). In the area of waste transfer, in 2022 Precheza continued to cooperate with its long-standing exclusive partner, Recovera Využití zdrojů a.s. (formerly SUEZ CZ a.s.).

### Waste (t)

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





## Energy consumption

Energy consumption in 2022 and before is shown in the following chart:

| Year  | 2019      | 2020      | 2021      | 2022      |
|---|-----------|-----------|-----------|-----------|
| <b>Electric energy (GJ)</b>                               | 283,654   | 288,306   | 272,718   | 270,673   |
| <b>Steam consumption (GJ)</b>                             | 743,311   | 736,759   | 694,350   | 693,326   |
| <b>Gas consumption (GJ)</b>                               | 907,198   | 885,012   | 839,195   | 839,278   |
| <b>Total energy consumption (GJ)</b>                      | 1,927,198 | 1,910,077 | 1,806,263 | 1,803,277 |
| <b>Water consumption - from the river (m<sup>3</sup>)</b> | 2,807,100 | 2,737,544 | 2,812,400 | 2,584,300 |
| <b>- drinking water (m<sup>3</sup>)</b>                   | 52,243    | 40,579    | 47,905    | 46,361    |

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 injures 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 2022 and previous years are as follows:

| Year        | Number of industrial injuries | Number of industrial injuries | Frequency per 100 employees |
|-------------|-------------------------------|-------------------------------|-----------------------------|
| <b>2018</b> | 13                            | 2.00                          | 0.30                        |
| <b>2019</b> | 4                             | 0.61                          | 0.17                        |
| <b>2020</b> | 14                            | 2.24                          | 0.18                        |
| <b>2021</b> | 8                             | 1.23                          | 0.35                        |
| <b>2022</b> | 4                             | 0.62                          | 0.06                        |

The number of disabling injuries in 2022 was significantly below the long-term average of the last 10 years (about 8-9 injuries). 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



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### **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, company activities, 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.

Sponsorship and promotional activities are primarily aimed at children, young people and senior citizens. The aim is to promote and explain the role of the chemical industry in our daily lives and in building a developed economy, but also, as a major industrial company in the region, to support activities and projects that contribute to improving the quality of life of the people in the city. PRECHEZA a.s. attracts young people to study chemistry, especially by working closely with schools and by supporting competitions and chemical olympiads. It also contributes to the organization of selected cultural and sporting events. PRECHEZA continuously supports charitable projects, either by way of the Agrofert Foundation, or through direct collaboration with Přerov Charity.

PRECHEZA is a significant and reliable employer and the winner of the Employer of the Year 2022 award. It offers its employees a range of above-standard benefits and creates safe working conditions and the security of a good employer. It maintains contact with retired employees and organizes regular Retiree Meetings and keeps them abreast about the happenings in the company by way of sending them the company magazine PRECHEZA Newspaper.

Annually PRECHEZA a. s. organizes a Sports and Family Day for its employees and their families, a cycling trip Cycle Tour, a hiking expedition Airing of the Lungs and other tours and events. For many years the company has been involved 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 focused on the senior citizens
- long-standing cooperation with Secondary Technical School Přerov, 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 and the Blues nad Bečvou Festival
- cooperation 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  
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The company is registered in the Companies Register kept by the Regional Court in Ostrava, ref. no. B 2953.

[www.precheza.cz](http://www.precheza.cz)

