

State of the Environment Report for 2019

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 is proud of over a hundred years' long tradition in inorganic chemical products manufacturing. 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 management and its individual elements, especially 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, OHSAS 18001 and ISO 50001 standards. The company has also implemented food safety management under FSSC 22000 international standard for food grade titanium dioxide production as well as serious incident prevention system based on approval of a safety program under the statute on prevention of serious accidents caused by selected hazardous chemical substances and chemical mixtures. Individual products are then certified for compliance with the applicable legislative and technical norms. Expert supervision is exercised by external authorized persons. Since 1994, PRECHEZA has been engaged in the worldwide activity entitled RESPONSIBLE CARE – responsible care and business in chemistry.

PRECHEZA manufacturing program is oriented mainly at 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), sulphuric acid (1%) and other chemical substances. PRECHEZA exports more than 90 percent 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. Openness
2. Protection of health and safety,
3. Comprehensive environmental protection
4. Mitigation of consequences of environment-related failures
5. Preparedness for an emergency
6. Environmental management
7. Education and training
8. Information openness

RESPONSIBLE CARE guiding principles with regard to the environment are outlined in more detail in the approved Management System Integrated Policy of the company and the RC program. Following its 8th defense in 2016, PRECHEZA a.s. is entitled to using the RESPONSIBLE CARE – Responsible Business in the Chemical Industry logo until 2020.



Integrated Policy of Management Systems

The integral part of all activities of PRECHEZA a.s., the manufacturer of inorganic pigments and other chemicals, is a systematic care of

- 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 nonmanufacturing 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 a feedback to improve performance.

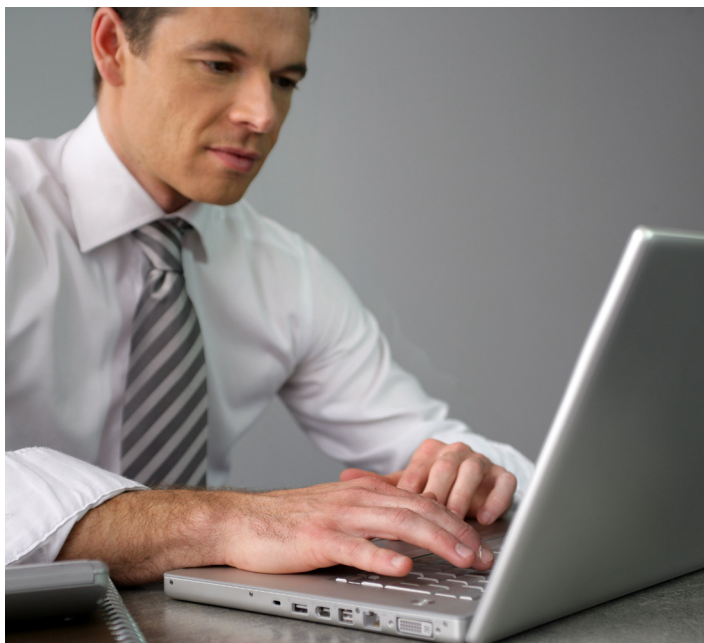
The commitments of the Integrated Policy of Management Systems are reflected into a set of internal management documents that define rights, duties and operational procedures in the areas of the OH&S, PMA, environment, quality and energy use for individual working positions of the company and its organisational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

An inspection visit by BUREAU VERITAS CZECH REPUBLIC, spol. s.r.o., an external auditor, which took place in April 2019, confirmed conformity of the integrated environmental management system and quality management system and occupational health and safety management system with the requirements of international ISO 14001:2015, ISO 9001:2015, OHSAS 18001:2007 a ISO 50001:2011 standards. This confirmed the validity of the previously issued certificates for these systems.



Compliance with legal norms and other regulations

In 2019, PRECHEZA met its reporting obligations via the integrated system of reporting obligations (ISPOP).

Compulsory measurements in 2019 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 and into the renewal and modernization of existing facilities and their operation. This was the case of 2019 as well. Approximately CZK 13 million was invested into the acquisition of environmental protection facilities. These funds went mainly into the preparation of the construction of the 4th wet electrostatic precipitator, which is a technical measure to increase the robustness of the line for capturing emissions from TD calcination. Operational costs of all facilities related to environmental protection have reached another approx. CZK 400 mil.



Air protection

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

- 1 – Anorganic pigment manufacturing
- 2 – Sulphuric acid manufacturing (S1)

Operation of these sources generates emissions of SO_x (expressed as SO₂), particulate matter, NO_x (expressed as NO₂) and CO, for which relevant binding emission limits are set for individual emission ducts and measuring points.

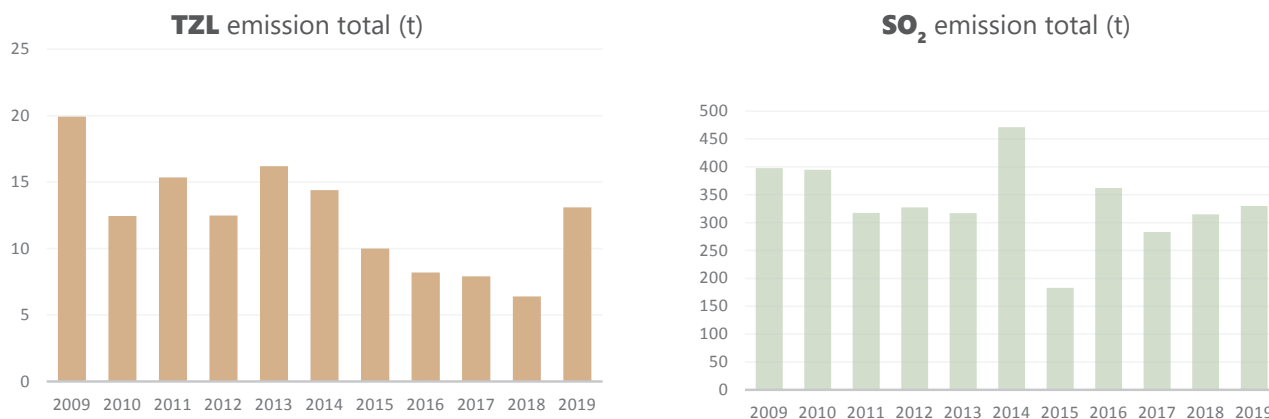
The total atmospheric emissions (in tons per year) in 2019 and before are shown in the following chart:

Rok	SO ₂	TZL	NO ₂	CO
2015	183	10.0	72.0	8.0
2016	362	8.2	82.7	8.9
2017	283	7.9	69.8	3.8
2018	315	6.4	65.0	4.4
2019	330	13.1	81.0	6.8

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 volume of emissions into the atmosphere in absolute numbers for the entire company grew in 2019 but this increase is linked to the significant total increase in production in this calendar year. On the contrary, this had a positive effect on the decrease in specific unit emissions from the production of titanium dioxide and sulphuric acid. In retrospect, the installation of a new sulphuric acid unit in 2018 had a positive effect on reducing emissions from titanium dioxide production. The significant decrease in SO₂ emissions in 2015 visible on the chart was due to long-term shutdown of sulphuric acid manufacturing facility.



Since 2013, PRECHEZA has been listed in the European Emissions Trading System for greenhouse gases (EU ETS). 100,896 tons of CO_{2e} were produced in 2019 (compared to 90,455 tons of CO_{2e} in 2018 and 96,285 tons in 2017). This gradual increase is also linked to the increase in titanium dioxide production and a higher consumption of limestone at the neutralization station and vapour and 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. Waste water 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 is performed in a specialized hydrogeological form.



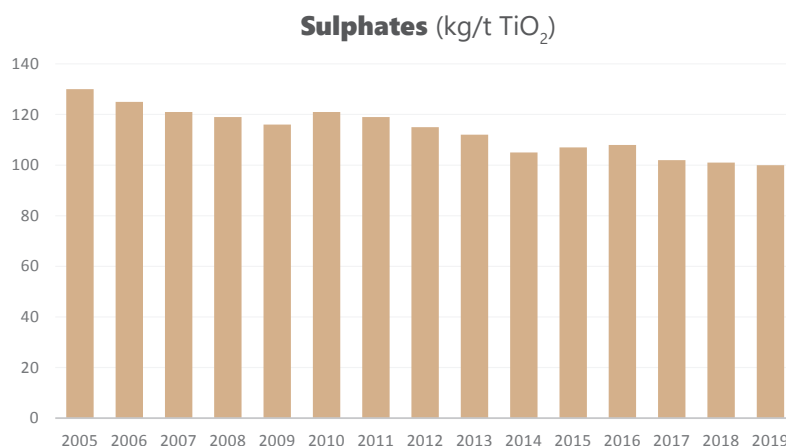
PRECHEZA a.s. complies with emission limits of pollution released out of the neutralization station for concentration of soluble inorganic salts (SIS), sulphate ions, non-soluble substances (NS), total iron (Fe_{total}) and for the chemical oxygen demand (COD_{Cr}).

The total water emissions (in tons per year) in 2019 and before are shown in the following chart:

Year	SIS	Sulphates	NS	Fe total	COD_{Cr}
	(t/year)	(kg/t TD)	(t/year)	(t/year)	(t/year)
2015	8,630	107	15.0	0.8	66
2016	9,530	108	14.0	0.6	50
2017	9,534	102	10.0	0.5	46
2018	8,950	101	9.3	0.5	41
2019	9,945	100	6.0	0.6	34
Emission limit	15,000	400	80.0	18.0	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).

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

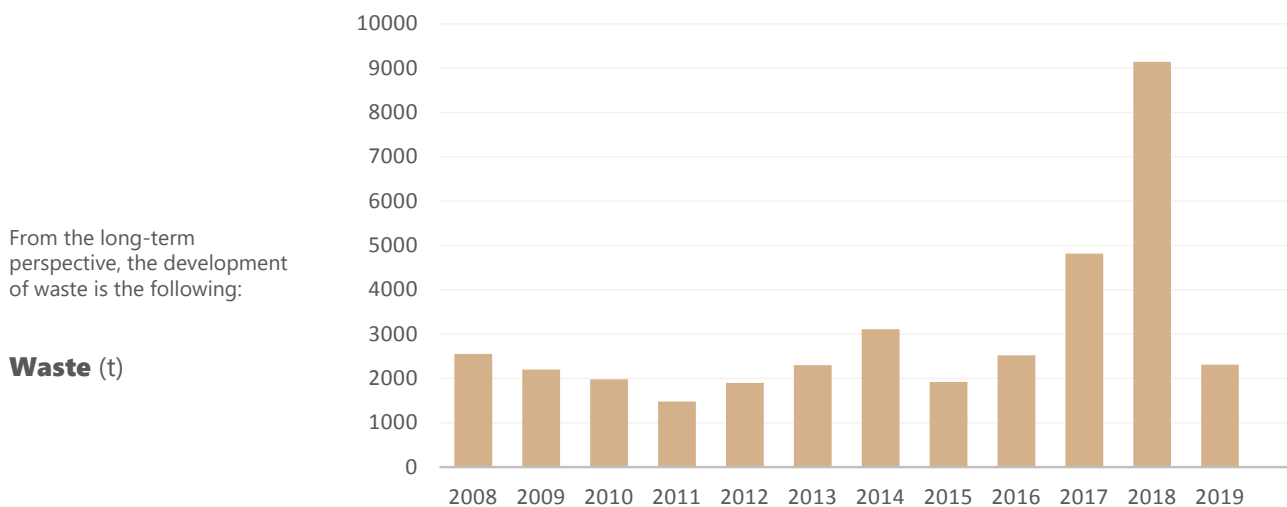


Waste

Waste management was carried out in accordance with the applicable valid legislation in 2019.

Total production of waste:	2,310 t
- ‚O‘ category waste (other):	2,289 t
- ‚N‘ category waste (hazardous):	21 t

The volume of waste produced in 2019 was about 4 times lower than in the previous year. In 2019, the amount of hazardous waste decreased (from about 7.77 kt to a historic minimum of 21 t). However, the higher volume of hazardous waste in 2018 was mainly due to disposal of technologically unusable ferrous sulphate from sulphate landfill A in order to enable the construction of the D1 highway in this area. On the contrary, the amount of other waste increased (from 1.4 kt to 2.3 kt), in 2019 specifically due to the removal of construction materials. During the year, exclusive cooperation in the field of waste transfer with the company SUEZ CZ a.s. continued.



Energy consumption

Energy consumption in 2019 and before is shown in the following chart:

Year	2016	2017	2018	2019
Electric energy (GJ)	275,886	281,030	266,819	283,654
Steam consumption (GJ)	811,936	812,675	739,812	743,311
Gas consumption (GJ)	855,287	857,765	817,052	907,198
Total energy consumption (GJ)	1,931,245	1,935,981	1,807,539	1,927,198
Water consumption - from the river (m³)	2,673,500	2,617,100	2,530,000	2,807,100
- drinking water (m³)	46,425	49,565	48,505	52,243

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 health damage causing inability to work for the period of over 3 calendar days. The values for 2019 and previous years are the following:

Year	Number of industrial injuries	Frequency per 100 employees	Severity (aver. % of inability to work)
2015	11	1.75	0.14
2016	5	0.80	0.28
2017	10	1.60	0.19
2018	13	2.00	0.30
2019	4	0.61	0.17

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 actual 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.

Sponsoring and promotional activities of Precheza are focused on selected groups (especially children and youth) in order to promote and explain the role of chemical industry in our daily lives and in building a developed economy. PRECHEZA a.s. is trying to convince young people to study chemistry and contributes to improving the quality of life in the region. It also supports selected cultural and sports events.

The company tries to stay in touch with its former employees and organizes events together with them regularly. It also provides to them its employee magazine Noviny PRECHEZA.

For its approx. 650 employees and the general public, the company organizes various sports events; the most popular one is the day-long bicycle ride called PRECHEZA Cyklotour or 'Getting Some Fresh Air' for tourists, as well as football (ZOK Cup), volleyball and tennis tournaments between departments. PRECHEZA is also one of the organizers of the very popular long-distance PRECHEZA AGROFERT Run with its over 1000 competitors from amongst the company's employees and the general public.

PRECHEZA a.s. takes good care of its buildings and vegetation on the premises and around them with the goal of improving work environment for its employees, visitors and citizens of Přerov. The company's goal is to play an important role in the life of the local community being one of the largest companies in the region, and to show that it is a safe and a modern company with good governance and a future potential.

Selected activities of PRECHEZA a.s. with a benefit for society:

- financial and in-kind support of kindergartens in Přerov and its surroundings
- long-term cooperation with Secondary Technical School Hranice, Pardubice University, University of Chemistry and Technology Prague and Palacký University in Olomouc
- the regional round of the knowledge contest for students of chemistry and the small round of the contest for high school students
- support of Czechoslovak Jazz Festival
- cooperation within the Association of Chemical Industry of the Czech Republic, TDMA
- General Partner of Extraliga women volleyball team PVK PRECHEZA
- support of car races organized by Autoklub PRETIOX
- cooperation with Ice Stock and Skittles club SK PRECHEZA Přerov
- implementation of specific measures of the local program for improving air quality in Přerov



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Joint stock company identification

Company name: PRECHEZA a.s.

Registered address: nábr. Dr. Edvarda Beneše 1170/24

Přerov I - Město

750 02 Přerov

Czech Republic

Business ID: 26872307

Tax ID number: CZ26872307

Industrial Classification
of Economic Activities

(OKEČ) Code: 241200

Telefon: +420 581 252 111

Fax: +420 581 217 048

Email: precheza@precheza.cz

The company is entered in the Commercial Register kept
by the Regional Court in Ostrava, Section B, Insert 2953.



www.precheza.cz