PRECHEZA a.s. is an important European manufacturer of high quality titanium dioxide and other inorganic pigments. It is a safe and a modern company with good governance which takes the environment into consideration in all of its activities.
PRECHEZA Joint Stock Company

Registered in Přerov, the company can be proud of over a hundred years of tradition in inorganic chemical products manufacturing. It is a large Czech inorganic pigment manufacturer, one of the three titanium dioxide manufacturers in CEFTA countries and an exporter of technological know-how. Precheza is 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 Manufacturer Association (TDMA) of the European Union.

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

The company’s management and its individual elements, especially, safety management and occupational health and safety, quality and environmental protection systems are built in accordance with international ISO 9001, ISO 14001 and OHSAS 18001 standards. In 2015, PRECHEZA certified a new food safety system for food industry grade titanium dioxide production pursuant to FSSC 22000 and implemented a system for major accident prevention based on approval of a safety program pursuant to Major Accidents Prevention Act with regard to selected hazardous chemical substances or chemical mixtures. PRECHEZA also began the certification process for energy management system pursuant to ISO 50001. Individual products are certified for compliance with the applicable laws and technical regulations. Expert supervision is performed by external authorized persons. Since 1994, PRECHEZA has been engaged in the worldwide initiative entitled RESPONSIBLE CARE – responsible care and business in the chemical industry.

PRECHEZA’s manufacturing program is oriented mainly at manufacturing inorganic pigments and chemicals produced as intermediate products in the company’s core production. PRETIOX titanium dioxide is PRECHEZA’s most important product – its sales account for approx. 80% of the company’s total turnover. PRECHEZA also manufactures iron oxide pigments (12% of the turnover), sulphuric acid (2% of the turnover) and other chemical products. PRECHEZA exports more than 85 percent of its production. Half of the company’s sales are realized in Western Europe, the rest – in North and Central America, Asia and Eastern Europe.
State of the Environment Report

**A systemic approach to the environment and to occupational safety**

**Responsible Care**

PRECHEZA a.s. conforms with the eight basic principles of the voluntary program entitled RESPONSIBLE CARE – Responsible Business in the Chemical Industry:

1. Openness
2. Protection of health and safety
3. Comprehensive environmental protection
4. Mitigation of environmental impacts
5. Accident preparedness
6. Environmental management
7. Education and training
8. Informational transparency

RESPONSIBLE CARE guiding principles with regard to the environment are outlined in more detail in the approved Management Systems Integrated Policy of the company and the RC program. Following its 7th defense in 2012, PRECHEZA a.s. is entitled to using the RESPONSIBLE CARE – Responsible Business in the Chemical Industry until October 2016.

**Integrated Management Systems Policy**

Systemic care for the following is an integral part of all activities of PRECHEZA a.s, the manufacturer of inorganic pigments and other chemical substances:

- occupational health and safety (OHS) of employees and other individuals on the company’s premises,
- major accident prevention (MAP) related to working with various chemical substances with regard to people, the environment and property on the company’s premises and its surroundings,
- mitigation of the company’s negative environmental impact,
- ensuring the required, agreed or expected quality and safety of the company’s products, services and processes,
- decreasing energy consumption related to manufacturing and non-manufacturing activities of the company and its property.

**In accordance with this approach, PRECHEZA a.s. commits to the following:**

1. To comply with the relevant laws and regulations applicable to the company’s activities as well as with obligations assumed by the company with regard to OHS, MAP, quality, environmental impacts, energy consumption and energy efficiency.
2. To improve performance and management systems of OHS, MAP, environmental impacts, quality of manufacturing, services and processes and energy efficiency, and to provide the necessary resources for achieving the company’s goals.
3. To carry out systemic risk analysis and risk assessment, and to emphasize the prevention of injuries, major accidents, damage to health, pollution or other negative impacts on the environment, low quality of products, services or processes or inefficient energy use.
4. To ensure comprehensive qualification, training and motivation of employees for correct and safe process management and realization of their personal responsibility with regard to OHS, MAP, the environment, quality and energy consumption.
5. To communicate openly with OHS, MAP, environmental, quality and energy use related stakeholders, and to provide necessary information for specifying mutual obligations, reporting their fulfilment and receiving feedback in order to improve performance.
The obligations assumed within the integrated management system policy are reflected in the internal regulations of the company, where rights, obligations and processes are outlined for OHS, MAP, quality, care for the environment and energy use with regard to individual positions in the company and its organizational units. These integrated policy commitments serve as a foundation for setting specific time-framed goals and target values for OHS, MAP, environmental impacts and energy management which are subject to regular monitoring. Integrated management policy system of OHS, MAP, the environment, quality and energy management is binding for all employees of PRECHEZA a.s. and is disclosed to the general public. It is communicated to all individuals working for the company or acting upon the company’s authorization. The company’s management is responsible for its implementation, understanding and maintaining at all organizational levels.

Management System Certification

A planned audit carried out by BUREAU VERITAS CZECH REPUBLIC, spol. s r.o., in April 2015 verified that the integrated environmental management system and quality management system are in conformity with the requirements of ISO 14001 and ISO 9001. Simultaneously, the auditors checked whether the company maintains the safety management system and the occupational health management system in compliance with the requirements of OHSAS 18001, and confirmed validity of the applicable certificate.

Compliance with Laws and Other Regulations

In 2015, PRECHEZA a.s. met its reporting obligations via ISPOP, the integrated system of obligatory reporting. Compulsory measurements in 2015 proved compliance of the company’s operations with the binding emission limits at all sources, with regard to both air and water. Waste management was set up in accordance with the valid permits.

The company runs a system which enables efficient identification of legal and other requirements, follow up of their implementation and timely application of relevant remedial measures.
Investments and Development

The following investments with a positive impact on the environment were implemented in 2015 as a part of the technical development investment plan:

- completion of S1 reconstruction
- extension of Monosal production from ferrous sulphate
- installation of a new drying facility and dust removal equipment for TB

These investments increased emission filtration efficiency, energy use efficiency and enabled a better use of intermediate products.

Environment-related Costs

The total amount Precheza a.s. invested in environmental protection in 2015 reached CZK 102 mil. Since early 1990s, the company has invested approx. CZK 1.5 bil. in environmental protection.Operational costs of all facilities related to the environment have reached an average of approx. another CZK 300 mil. annually.

Air Protection

Precheza a.s. operates the following stationary sources of pollution:
1. Inorganic pigment manufacturing
2. Sulphuric acid manufacturing (S1)

Operation of these pollution sources generates SOx (expressed as SO), solid pollutants (SP), NOx (expressed as NO) and CO, for which relevant binding emission limits are set applicable to individual ducts and measuring points.

The total atmospheric emissions (in tons per year) in 2015 and before are shown in the following chart: Atmospheric emissions were within the limit brackets set by the integrated permit for the so-called best available technology (BAT) outlined in the relevant European reference documents (BREF).

<table>
<thead>
<tr>
<th>Year</th>
<th>SO₂</th>
<th>TZL</th>
<th>NO₂</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>317</td>
<td>16.2</td>
<td>60.9</td>
<td>6.5</td>
</tr>
<tr>
<td>2014</td>
<td>471</td>
<td>14.4</td>
<td>64.9</td>
<td>9.1</td>
</tr>
<tr>
<td>2015</td>
<td>183</td>
<td>10.0</td>
<td>72</td>
<td>8.0</td>
</tr>
</tbody>
</table>
In the integrated permit, Precheza a.s. has stricter limits than the general national and country-specific limits or the limits which can be found in the applicable EU directives with regard to certain items. Emission level values are generally at the lower end of the interval for the best available European technologies, which means maximum performance in the EU pigment manufacturing industry.

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

A significant decrease of SO₂ emissions in 2015 was caused by the long term shutdown of sulphuric acid production after the failure in 2014. Precheza reacted to this development by purchasing acids and energy from external suppliers. Furthermore, SO₂ and SP emission levels showed, for the first time, the positive impact of another SULFACID reactor installed in the titanium dioxide facility where exhalations from the calcination technology hub are captured, and of the reconstruction of the dust filter in the ilmenite mill and transportation lines.

Since 2013, Precheza has been listed in the European Emissions Trading System for greenhouse gases (EU ETS). In 2015, a total of 87,156 tons of CO₂e were produced (84,905 tons in 2014 and 75,482 in 2013). The increase is linked to increased titanium dioxide production and the related increase in limestone consumption for neutralization and vapour and natural gas in the thermal processes of pigment manufacturing.
Water Protection

Precheza makes saving natural resources, minimizing pollution and recycling water in technology its long-term priorities. Waste waters are purified, and their quality and quantity is in conformity with the integrated permit in all the relevant indicators. White gypsum, PREGIPS, is obtained by neutralization of certain technological waters; the rest is used in manufacturing of red gypsum, PRESTAB, manufacturing.

With regard to groundwater protection, the company carries out long-term regular monitoring of groundwater quality on its premises and in the wider surroundings. Monitoring and evaluation is performed by a specialized hydrogeological company.

Precheza a.s. complies with emission limits of pollution released out of the neutralization station for soluble inorganic salts (SIS), sulphate ions, non-soluble substances (Ns), total iron (Fe total) and for the chemical oxygen demand (CODcr).

The total water emissions in 2015 and before are shown in the following chart:

<table>
<thead>
<tr>
<th>Year</th>
<th>RAS (t/year)</th>
<th>Sulphates (kg/t TB)</th>
<th>NL (t/year)</th>
<th>Fe total (t/year)</th>
<th>CHSK$_{Cr}$ (t/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>8,129</td>
<td>112</td>
<td>11</td>
<td>0.6</td>
<td>76</td>
</tr>
<tr>
<td>2014</td>
<td>8,909</td>
<td>105</td>
<td>14</td>
<td>0.5</td>
<td>64</td>
</tr>
<tr>
<td>2015</td>
<td>8,630</td>
<td>107</td>
<td>14.5</td>
<td>0.8</td>
<td>66.2</td>
</tr>
<tr>
<td>Emission limit</td>
<td>15,000</td>
<td>400</td>
<td>80</td>
<td>18</td>
<td>250</td>
</tr>
</tbody>
</table>

Water emissions were also in conformity with the limits set in the integrated permit as well as with the requirements for the so-called best available technology (BAT) outlined in the relevant 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

The company is committed to waste minimization and recycling. Waste management in 2015 was performed in conformity with the applicable regulations.

<table>
<thead>
<tr>
<th>Total waste production:</th>
<th>1,923 t</th>
</tr>
</thead>
<tbody>
<tr>
<td>“O” category waste (other):</td>
<td>1,512 t</td>
</tr>
<tr>
<td>“H” category waste (hazardous):</td>
<td>412 t external companies – processed 37.94 t</td>
</tr>
</tbody>
</table>

The total volume of transferred production waste was lower year-on-year (3,111 t in 2014) but H category waste was higher (120 t in 2014), especially due to extensive investment and reconstruction activities. Hazardous waste was neutralized in disposal sites and in an incineration plant. Precheza’s neutralization facility processed 37.94 t of waste as inputs and 412 t were dispatched to an authorized company for liquidation; 252.6 t from the above quantity came from the ferrous sulphate depository facility.

Long term development in waste management:
Energy Consumption

Energy consumption in 2015 and before is shown in the following chart:

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity (GJ)</td>
<td>231,541</td>
<td>256,032</td>
<td>228,616</td>
</tr>
<tr>
<td>Vapour consumption (GJ)</td>
<td>710,027</td>
<td>798,992</td>
<td>647,402</td>
</tr>
<tr>
<td>Gas consumption (GJ)</td>
<td>656,402</td>
<td>719,660</td>
<td>814,412</td>
</tr>
<tr>
<td>Total energy consumption (GJ)</td>
<td>1,597,970</td>
<td>1,774,684</td>
<td>1,690,430</td>
</tr>
<tr>
<td>Water consumption - river (m³)</td>
<td>2,262,552</td>
<td>2,449,490</td>
<td>2,268,550</td>
</tr>
<tr>
<td>- drinking water (m³)</td>
<td>46,825</td>
<td>46,591</td>
<td>49,614</td>
</tr>
</tbody>
</table>

Energy intensity of production, expressed in GJ of energy consumed per ton of pigment produced, has been decreasing in the recent years, including 2015.

Occupational Safety

As a part of its obligations under the integrated management system, Precheza a.s. strives to improve its performance with regard to occupational health and safety. The company is using an array of tools such as awareness raising by means of regular trainings for employees or increasing employees’ contribution and extensive supervision performed by the company’s management.

The indicator of occupational safety the company uses is the number of industrial injuries per 100 employees. An industrial injury is defined as health damage causing inability to work for a period of over 3 calendar days. The values for 2015 and preceding years are the following:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of industrial injuries</th>
<th>Frequency / 100 employees</th>
<th>Severity (aver. % of inability to work)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>11</td>
<td>1.77</td>
<td>0.21</td>
</tr>
<tr>
<td>2014</td>
<td>7</td>
<td>1.12</td>
<td>0.28</td>
</tr>
<tr>
<td>2015</td>
<td>11</td>
<td>1.75</td>
<td>0.14</td>
</tr>
</tbody>
</table>

The above injuries mainly occurred due to distracted attention and underestimation of risk. Statistically, the majority of the reported injuries were related to falls or handling of objects and tools (4 cases each), were the result of industrial hazards such as burns from steam or tool work (2 cases each). Relevant remedial steps were taken in all cases of injury.

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 hazard concentration (especially, dust and noise) in an authorized laboratory. The measurements carried out by the company indicated conformity with the existing work categorization.
Activities for Local Community and Society

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

PRECHEZA a.s. discloses reliable and timely information about the impact its activities have on the environment and about the implementation of the comprehensive environmental protection program. It informs the general public through the media about the company’s manufacturing program and the results of the environmental management program. The company places a special emphasis on timely consultations about its investment projects with relevant public authorities.

The company has been awarded the prestigious Regional Employer of the Year title several times. The company’s sponsoring and promotional activities are aimed at selected groups (especially, on children and youth) in order to promote and explain the role the chemical industry plays in our daily lives and in building a developed economy. PRECHEZA a.s. motivates young people to study chemistry, contributes to the overall improvement of quality of life in the region and supports selected culture and sports events.

The company stays in touch with its former employees and regularly organizes events with them. Everybody also receives the corporate newsletter, the Noviny Precheza. PRECHEZA organizes numerous events for all of its 627 employees – Employee Ball, Sports Day for employees and their families, a day-long cycling trip entitled Cyklotour or “Getting Some Fresh Air” event for hikers. PRECHEZA is also one of the organizers of the popular long distance run entitled PRECHEZA AGROFERT Run; the number of participants, both employees and members of the local community, has reached 800. PRECHEZA also regularly participates in the national “Biking to Work” initiative, with the goal of motivating employees to do sports and be mindful of the environment.

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 local inhabitants. 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 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, Palacky University in Olomouc and Brno Technical University
- The regional round of the knowledge contest for chemistry students and the small round of the contest for high school students
- Charitable contribution to Kappa Help, a charity providing aid to people in a difficult life situation
- Support of Czechoslovak Jazz Festival and Blues at Bečva festival
- Cooperation within the Association of Chemical Industry of the Czech Republic
- General Partner of PVK PRECHEZA, an Extraliga women volleyball team
- Support of car races organized by Autoklub PRETIOX
- Implementation of specific measures of the local program for improving air quality in Přerov
Company Details

Company name: PRECHEZA a.s.
Registered address: nábř. Dr. Edvarda Beneše 1170/2
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Tax ID number: CZ 26872307
Industrial Classification of Economic Activities (OKEČ) code: 241200
Phone: +420 581 252 111
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The company is entered in the Commercial Register kept by the Regional Court in Ostrava, Section B, Insert 2953.

www.precheza.cz