

## The Bahia Plant

Rodovia BA 099, km 20, Abrantes  
 Camaçari, BA.  
 CEP 42840-000 Brazil

The Bahia Plant is responsible for the production of titanium dioxide (TiO<sub>2</sub>) pigment for Cristal in Brazil. We are the second-largest producer worldwide of TiO<sub>2</sub>, a brilliant white pigment manufactured from titanium, that is used to give color to almost all materials. In the case of paints, for example, TiO<sub>2</sub> provides better hiding power, brightness and durability for the formulas, making modern paints more efficient and easier to apply; they also have a low environmental impact. TiO<sub>2</sub> also provides hiding power and brightness for plastics and rubber products. Its range of applications extends to paper, ceramics, glass, leather and synthetic fibers. Our titanium dioxide pigment is sold under the brand name TiONA®.

The plant in Bahia is located on the northern coast of the state, close to Arembepe, and 20 km from Salvador, in an area of 837-hectares. It is the only integrated plant for TiO<sub>2</sub> in South America, and it produces the titanium dioxide pigment via the sulfate process, which uses sulfuric acid in order to extract the TiO<sub>2</sub> from the mineral. The base pigment is then transformed into the final product, with performance characteristics that are specific to each application, through a process that involves a surface treatment with various chemical products and a combination of milling and micronizing.

The Bahia plant has ISO:9001 certification.

### Summary of our Performance

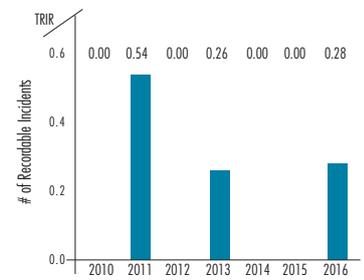
In line with concepts of sustainable development, the unit has as its focus the generation of value for its shareholders, a commitment to its neighboring communities and respect for the environment.

#### PROVIDING ECONOMIC VALUE

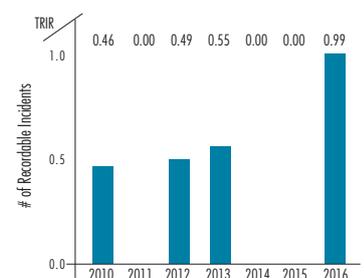
- Approximately 420 full-time employees and contracted help
- Payroll and annual benefits of about R\$ 80 million
- Annual investment of approximately R\$ 9 million in capital projects
- Approximately R\$ 235 million is spent for supplies, parts and services
- Annual real estate taxes of R\$ 800 thousands



**Employee-Total Recordable Incident Rate**  
 (TRIR) Rate of injuries per 100 employees



**Contractor-Total Recordable Incident Rate**  
 (TRIR) Rate of injuries per 100 employees



## RESPECTING SOCIAL CONCERNS

We believe that social responsibility requires a proactive effort in support of community needs.

- **Partnership** – The Bahia plant has various programs to support the communities surrounding the facility, focusing on the following areas:
  - Camaçari Sea Coast (support to local fishermen)
  - Education (encouraging reading to more than 350 children per year; professional training to enable residents to have better conditions for employment and partnerships with local public schools)
  - Environmental education (in partnership with NGO and community leaders)
  - Income generation (community supportive programs that provide job skills to help residents generate income)
  - Health and well being (participation in the local Health Council)
  - A health education program with the participation of Cristal's employees
  - A program to raise youth awareness on drug abuse and its dangers
  - Lectures on environmental education
- **Community Participation** – Representatives from the unit participate in consultative town meetings in the city of Camaçari, the village of Areias and the condominium complex of Interlagos, with the objective of maintaining a continuous dialogue with the local inhabitants.
- **Relationship with the Community** – In the Open Door Program, university, public school and private school students, as well as employee's family members, visit the factory. During the visit, they learn about the process of titanium extraction, the production of TiO<sub>2</sub> and the company's environmental programs. About 300 people visit the factory each semester. In addition, for the past eleven years, the Day of the Environment has been held at the factory, with a great Environmental Gymkhana, in which public school students from the region participate.
- **Volunteer Work** – Employees are encouraged to participate in volunteer programs developed by representative community associations. Various employees make presentations to the region's school students on matters such as first aid, citizenship, environmental education and safety at work and at home.

## CARING FOR THE ENVIRONMENT

With our company committed to social responsibility, we operate our units in a way that protects the individual and the environment, and preserves the world for future generations. In accordance with principles of responsible care, the company is committed to continual improvement in health, safety, the environment, reliability and communication with the community.

- **Safety Performance** – The management system of Bahia Plant is working for the implementation of the OHSAS (Occupational Health and Safety Assessment Series), series 18001, certification. The Health and Safety Management System provides a structured process to achieve continuous improvement and also aims to ensure that our performance continuously meets the legal requirements and the principles of our own policy.
- **Prevention** – The plant has a program for guaranteeing the safe operation and maintenance of its processes, focused on the prevention of accidents. Atmospheric emissions have been continuously reduced through such actions as the replacement of oil by natural gas, the installation of the Moist Oxidation Unit.
- **Energy Efficiency** – The energy consumption per metric ton of the product manufactured at the Bahia plant fell by 23.1% from 2008 to 2016. Process optimization has contributed to the reduction of steam and electricity consumption by 30.5% and 18.4%, respectively.

Cristal is one of the largest producers of titanium dioxide and a leading producer of titanium chemicals. Cristal is the world's leading supplier of ultrafine titanium dioxide products and titanium chemicals and is a fast-growing producer of mineral sands and titanium metal powder. Cristal operates eight manufacturing plants in seven countries on five continents and employs nearly 3,400 people worldwide.

Visit [www.cristal.com](http://www.cristal.com) for more information about the company and its products.

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