

Ashtabula Complex

Ashtabula Plant 1	Ashtabula Plant 2
2900 Middle Road	2426 Middle Road
Ashtabula, OH 44004	Ashtabula, OH 44004



Cristal's Ashtabula Complex consists of two facilities – Plant 1 and Plant 2 – that produce titanium dioxide pigment (TiO_2). The company is the world's second-largest producer of TiO_2 , a bright white powder made from titanium ore that has the ability to color virtually any material. TiO_2 makes possible the opacity, brightness and durability in paint formulas that have made modern paints more cost efficient, easier to use and friendlier to the environment. TiO_2 also gives plastics and rubber opacity and whiteness. It is used in such diverse products as printing inks, paper, ceramics, glass, leather, synthetic fibers and colors formulated for art paints.

The ISO 9001 certified Ashtabula Complex is Cristal's largest TiO_2 production facility and accounts for 30 percent of the company's overall production. The two plants occupy approximately 140 acres adjacent to Fields Brook and two miles south of Lake Erie. Both plants produce TiO_2 through the chloride process, utilizing chlorine to react with titanium-bearing ores in a high-temperature process. This process produces rutile TiO_2 which allows for increased purity and greater control over the pigment's particle size distribution than other manufacturing processes. Titanium tetrachloride (TiCl_4) is produced as an intermediate product in the chloride process. The complex also sells TiCl_4 for use in the titanium metals industry and in the production of catalysts and specialty pigments.

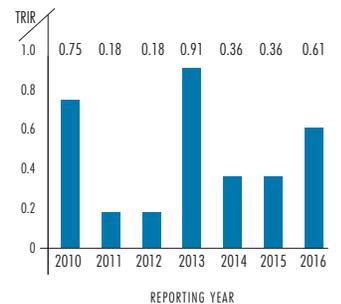
Performance Summary

Ashtabula's commitment to sustainable growth balances the company's responsibility to provide economic value while respecting the social concerns of the community in which we operate and demonstrating care for the environment.

PROVIDING ECONOMIC VALUE

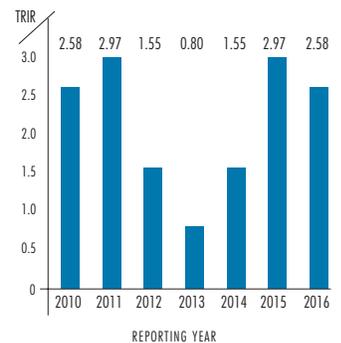
- Approximately 500 employees and contractors
- Annual payroll and benefits of approximately \$50 million
- Site purchases of more than \$40 million of local goods and services annually
- Annual property tax payments of approximately \$437 thousand

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



The complex continues to have one of the best safety records in the industry and continues to strive for zero workplace injuries.

Contractor–Total Recordable Incident Rate (TRIR)



The company continues to hold its contractors to the same stringent safety standards working at the Ashtabula Complex.

RESPECTING SOCIAL CONCERNS

We recognize that being a socially responsible member of the community requires actively working to support community needs.

- **Community Outreach.** Employees have taken a leadership role in the facilitation of the Ashtabula Community Advisory Panel. The Complex hosts the monthly meetings and has employee representatives participate.
- **Community Involvement.** The company is actively involved in the local community including the American Red Cross; Ashtabula Chamber of Commerce; Ashtabula County Medical Center Foundation; Ashtabula Safety Council; Civic Development Corporation; Growth Partnership for Ashtabula County; Kent State University – Ashtabula; Leadership Ashtabula County and the Rotary Club.
- **Education.** Employees from Cristal's Ashtabula complex supported numerous educational activities including Career Days and Science Project Judging at local schools; Growth Partnership Mentorship Program and Scholarship; Cristal Co-operative Education Program; After School Discovery's Learning Symposium and the Ohio Chemistry Technology Council's Teachers in Education Program.
- **Volunteerism.** Employees participate in a range of community activities including the Ashtabula Arts Center, Boy Scouts of America, YMCA and many others.
- **Philanthropy.** The company and employees support the Civic Development Corporation, the United Way of Ashtabula County and many other worthwhile charitable causes in the area.

CARING FOR THE ENVIRONMENT

Our commitment as a socially responsible company means that we operate our facilities in a manner that protects people and the environment, and preserves our world for future generations. Cristal is committed to continuous improvement in safety, security, environmental performance, reliability and open communication.

- **Safety Performance.** As of May 2017, Ashtabula Plant 1 had gone more than 4.2 million work hours (over 2,519 days) without a lost-time injury and Ashtabula Plant 2 had gone more than 9.8 million work hours (20 years in May) without a lost-time injury. The Ashtabula County Safety Council recognized the site for its safe workdays with several awards in that time frame. The Complex continues to keep the safety and health of our employees and contractors in the forefront of all that we do. This is visible in our systems that we maintain as well as our injury rate which averaged 0.47 since 2010. Recognizing that all injuries are preventable, we continue on our Journey to Zero injuries and incidents.
- **Prevention.** The complex has several programs in place to ensure the safe operation and maintenance of our processes so that accidental releases are prevented.
- **Environmental Performance.** A complex wide emissions cap was incorporated into the plant's air permitting to provide flexibility in managing air emissions going forward. Implementation of Carbon Management initiatives have resulted in reduced Carbon Monoxide and Carbonyl Sulfide air emissions beginning in 2009. Additional air emission reductions are expected as Carbon Management is fully implemented.
- **Energy Efficiency.** A cogeneration plant began operation in 2001 to provide steam and electricity to both plants. The project was recognized for reduced fuel consumption and responsible energy management with a combined Heat and Power Certificate of Recognition.
- **Milestones.** The Ashtabula Plant 1 and 2 Environmental Management System (EMS) received recertification to the ISO:14001 Standard in 2016.

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 for more information about the company and its products.

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