Titanium Dioxide for Environmental Catalysis

Ultrafine TiO$_2$-based products are at the core of catalyst technologies for NO$_x$ abatement (Selective Catalytic Reduction, SCR) and sulfur recovery (Claus Catalysis). Cristal with its CristalACTiV™ product range has been an ultrafine TiO$_2$ leader in both of these markets since their inception. Relying on global reach and a strong technology base, Cristal leads and adapts to challenges in the marketplace, ensuring that environmental catalysts will contribute to a cleaner world.

Nitrogen Oxides (NO$_x$) and Hydrogen Sulfide (H$_2$S) Pollutants

NO$_x$ gases (NO, NO$_2$) are major atmospheric pollutants resulting from fossil fuel combustion. They have a negative impact on both the environment (e.g., ozone and acid rain creation) and human respiratory health. H$_2$S is a toxic gas that is generated during the processing of natural gas, crude oil and coal. Both of these pollutants are strictly regulated.

TiO$_2$-based Catalysts for Stationary Sources

In response to growing concerns about the environment, NO$_x$ regulation is now spreading globally. Power plants, in particular, are a major source of NO$_x$ emissions and SCR has been widely adopted as the best available technology. The most effective SCR catalysts are based on TiO$_2$.

Cristal is playing an active role in the spread of NO$_x$ abatement technologies via SCR promotion. CristalACTiV™ powders are used in several different catalytic platforms including extruded, coated and granulated forms and our products can be found in installations across the globe.

Automotive Catalysis: A Growing Challenge

Regulations in Europe, the U.S. and Japan now require that diesel cars and trucks control and decrease NO$_x$ levels in exhaust gas. In this growing, emission-control market, SCR is again the technology of choice and holds a leading position in this competitive field worldwide. Similar regulations also oblige automotive manufacturers to decrease particulate matters, hydrocarbon and CO emissions.

Cristal’s products are already being incorporated in DeNO$_x$ catalysts for several of the world’s most recognizable brands of trucks. The next generation of CristalACTiV™ ultrafine TiO$_2$-based products is being developed for DeNO$_x$ and other automotive catalysts, such as oxidation catalysts and will be the superior choice for meeting new global regulations.

Sulfur Recovery

The solution to H$_2$S emission is to convert it into sulfur that can both be stored and marketed as a raw material. Due to stricter regulation and fuel evolution, this "Claus reaction" is gaining favor in fuel processing and requires a catalyst that is both effective and stable. CristalACTiV™ TiO$_2$-based catalysts are known to offer improved performance, especially improved sulfate resistance, translating to increased lifetime, and enhanced hydrolysis of COS/CS$_2$ compared to alumina-based catalysts. CristalACTiV™ products will help you to achieve these performances.
Your Partner for Environmental Protection

Cristal is a global technology leader with a complete product range of commercial, ultrafine TiO₂-based products adapted to meet customer needs. Products are available with various compositions, surface areas and surface chemistries depending on the end-use application.

The main products entering the composition of a catalyst are powders, whether the catalyst is extruded, coated or granulated. Solids (stable colloidal suspensions) may also be used as the carrier or as a binder. Impurities such as Na₂O, K₂O and Fe are minimized in our products to avoid poisoning the catalysts. You will find among our G, DT and S series the product of choice adapted to catalyst performance needs.

Following the continuous increase of its production capacity and more than 25 years of experience, Cristal is the recognized leader in finding optimal solutions for the most demanding catalysts for both existing and new markets. Our organization is designed to fulfill this goal with our dedicated Sales and Marketing department, state-of-the-art R&D Center, application laboratories, pilot facilities and global technical service support.

For further information on CristalACTiV™ and other titanium dioxide products, please contact:

North and South America Sales
+ 1.410.229.4441

Europe, Asia/Pacific Sales
+ 33.1.55.04.89.30

Visit us at our website:

www.cristal.com

New Developments

Our understanding of end-use markets enables us to develop new products based on tomorrow’s needs. The future requirements of the automotive market will demand carriers, for instance, with higher thermal stability and specific surface chemistry. Our products in development are designed to meet these increasingly stringent demands.

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