

# Ceramic scouring media reduces media consumption, resulting in an estimated \$700K savings per year

Replacing silica sand with CARBOBEAD-LT high-performance ceramic media significantly reduces product contamination, lowers mechanical equipment wear and reduces media replacement costs.

## The challenge

During the production of titanium dioxide (TiO<sub>2</sub>), titania builds up on the walls of the oxidation reactor, impeding the drying process and reducing process efficiency. To reduce the titania buildup, a stream of scouring media (silica sand) is fired constantly against the internal walls of the reactor tube.

However, the irregularly shaped silica sand grains wear down and leave fine particles that affect the purity of the TiO<sub>2</sub>, reducing its brightness. The irregularly shaped sand also cuts the metal walls of the reactor tube, adding iron to the white TiO<sub>2</sub> pigment, further reducing its brightness. As the product becomes discolored, its value decreases, and erosion of the reactor tubes eventually leads to costly downtime required to replace them.

## The solution

The client replaced silica sand with CARBOBEAD-LT 16/20, a manufactured ceramic scouring product with grains that exhibit consistent round and spherical shape, tight sizing, a smooth surface, and superior strength and durability compared to silica sand.

CARBOBEAD-LT is also lighter in color than silica sand, further reducing the possibility of TiO<sub>2</sub> discoloration.

## The results

The change resulted in an improvement in pigment brightness of ~20%. Due to the increased durability of CARBOBEAD-LT, the separation costs to remove silica fines are greatly reduced.

Its particles can also be easily reclaimed and reused. Through reduced media consumption, the client estimated a potential savings of \$700,000 per year.

In addition, the smooth surface of CARBOBEAD-LT results in less mechanical wear on equipment, extending its useful life and reducing replacement costs.

The client is evaluating CARBOBEAD-LT for their other global operations.

## Project Details

**Client:** Titanium dioxide (TiO<sub>2</sub>) producer

**Location:** Europe

**Type:** Scour process

**Deliverables:** Pigments used in paints, paper, toothpaste and other products

**Scour media:** CARBOBEAD-LT replacing silica sand as a scouring agent

## Benefits achieved

- Improved product quality – pigment brightness increased ~20%
- Decreased media consumption, generating \$700,000 annual savings
- Increased production efficiency
- Reduced wear on production equipment

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