



## Tronox Titanium Dioxide

### Nanomaterial

Considerable effort is underway globally to develop a precise definition for nanomaterial. EU Commission Recommendation 2011/696/EU defines nanomaterial as “any natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50% or more of the particles in the number size distribution, one or more external dimensions is in the size range 1nm-100 nm.”

The ISO technical committee on nanoparticles, ISO/TC 229<sup>1</sup>, defines nanomaterial as “material with any external dimension in the nanoscale (size range from approximately 1nm-100nm) or having internal structure or surface structure in the nanoscale.”

Tronox titanium dioxide is a synthetic or manufactured product made by purifying and concentrating a naturally occurring titanium dioxide bearing ore. The average primary particle size for Tronox titanium dioxide pigment is between 200nm-300nm. As with all powder materials, Tronox titanium dioxide pigment contains a small fraction of particles within the nano range and well below 10% in composition. Furthermore, the primary particles in our titanium dioxide products are strongly bound or fused together by chemical bonds to form aggregates in the micron size range ( $\mu\text{m}$ ). Therefore, Tronox titanium dioxide pigment should not be considered as nanoparticles, manufactured nanoparticles, nanostructured or nanomaterials.

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<sup>1</sup> ISO/TS 80004-1:2015 Nanotechnologies

Tronox titanium dioxide may not be directly added to food, pharmaceuticals, or cosmetics. Tronox titanium dioxide may not be used for implantable medical devices used for life-sustaining or life-supporting applications in humans.

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