What is Titanium Dioxide?

Titanium dioxide is a natural oxide that occurs within the element titanium. Also called titania or titanium (IV) oxide, it has also been known to appear in rutile, anatase or brookite. Titanium dioxide is usually processed from titanium tetrachloride by using a carbon re-oxidation and reduction method. It may also be extracted from ilmenite, another oxide, by reducing sulfuric acid in order to harvest pure titanium dioxide.

Titanium dioxide is generally regarded as one of the whitest minerals available on the Earth. Because of its high refraction properties, titanium dioxide is used for cosmetic formulas to reflect sunlight off of the skin. So sunblock contains titanium dioxide as a major ingredient to absorb the UV rays from the sun. The concentration of titanium dioxide within such products determines the overall SPF.

As a pigment to make foods appear whiter, titanium dioxide is frequently added to items such as candy and milk. It is also added to some foods that are not naturally white such as mustards, nuts, dried vegetables, soups, seeds, wine or beer to enhance the overall flavor. Medications and toothpastes may contain titanium dioxide to add their brightness.

Due to its reflective property, titanium dioxide is also added into protective coatings for items such as optical mirrors, paint or automobile parts. The paints used to cover airplanes, boats or automobiles often rely on titanium dioxide as a main ingredient to prevent these colors from fading**. It is also mixed in with building materials for a similar purpose.**

Plastic manufacturers often add titanium dioxide to building materials to make the finished product more durable. The ability of this mineral to absorb UV rays decreases the risk that these products will become fragile and susceptible to damage over