

Titanium Dioxide

THE BEST UVB BARRIER FOR DAILY SUN EXPOSURE



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Composition and usage

Titanium dioxide is a white powder obtained by the transformation of mineral compounds extracted from rocks. It has been used for a century in a range of industrial and consumer products, including paints, coatings, adhesives, paper, plastics and rubber, printing inks, coated fabrics and textiles, as well as ceramics, floor coverings, roofing materials, cosmetics, toothpaste, soap, water treatment agents, pharmaceuticals, food colorants, automotive products, sunscreen, and catalysts. [1]

It is known to exist in three crystal forms: anatase, brookite, and rutile. The rutile phase is generally used as a component in sunscreen cosmetics because of its higher UV absorption [2] and it's widely used in personal care products such as sunscreen (also in skincare cream with an SPF), as mentioned before, and make-up.

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Characteristics

This raw material is classified as:

- **Opacifier**
- **Pigment** – with other colors gives intensity and brightness to decorative cosmetics
- **UV absorber and filter:** it absorbs, reflects, and refracts UV photons but functions in photoprotection primarily by absorbing UV radiation [3]

Titanium dioxide is invisible to the naked eye: it's typically scaled-down much smaller, between 10 and 100 nanometers, making it less noticeable on the skin. This makes it a good choice of sunscreen for darker skin, as it doesn't leave an opaque layer. It's extremely gentle, making it a great choice for those with sensitive skin. Titanium dioxide is also extremely effective at blocking UVB, making it a great choice for casual daily sun exposure. [4]



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Bibliography

[1] "www.chemicalsafetyfacts.org," [Online].

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[4] "https://www.colorescience.com/," [Online].