
Technical Information

January 2011
Supersedes issue dated December 2010

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® = Registered trademark of BASF
in many countries.

T-Lite™ SF-S

Chemical Description

The T-Lite products are UV filters based on titanium dioxide.

Range

PRD-No.	INCI name	CAS-Nos.
30245186	Titanium Dioxide (and) Hydrated Silica (and) hydrogen dimethicone (and) Aluminium Hydroxide	13463-67-7 1343-98-2 21645-51-2 68037-59-2

Use of the BASF UV filters in skin protection

UV radiation is responsible for various physiological effects in the skin, as a result of its high energy content. These effects include sunburn, the premature appearance of wrinkles, i. e. accelerated ageing of the skin and, with frequent intensive exposure, an increased risk of skin cancer. UV filters and micro pigments provide vital protection for the skin against these harmful effects of UV radiation. They are now increasingly being used not only in sun preparations but also in other skin cosmetics such as day creams.

The use of UV filters and micro pigments to protect the skin is subject to legislation in many countries. Table 1 shows the approval status and the permitted concentration in the EU, USA and Japan. The concentrations of UV filters in sun preparations depend on the desired degree of protection, measured in terms of the sun protection factor (SPF). Commonly, organic UV filters are combined with micro pigments in products with a high SPF. They can also be used together with radical scavengers, e.g. sodium ascorbyl monophosphate, vitamin E or vitamin E acetate which provide additional passive sun protection.

Approval status

All data in %

EU	Switzerland	India	Taiwan	Korea	Japan ²⁾	China	Australia	ASEAN	USA	Canada	S.America	Mexico
25%	25%	25%	25%	(25%)***	no limit	25%	25%	25%	25%(#)	25%	no limit	25%

– not approved

P pending approval

* Germany: preliminary approval 25%

** Japan: limit except for cosmetics coming into contact with mucous membranes

*** Cosmetic manufacturer may require additional information on coating when making application for functional cosmetics.

**** ASEAN Cosmetic Directive, Annex VII – part 3. The substance should be allowed for use unless there is a toxicity or unsafety report.

(#) In the US, titanium dioxide – Avobenzene combinations are not allowed by the FDA

In the EU, cosmetics that contain more than 0.5% Uvinul M40 for skin protection must be labeled, “contains oxybenzone”.

Specification

See separate document: “Standard Specification” available via BASF’s WorldAccount: <https://worldaccount.basf.com> (registered access).

Physicochemical properties

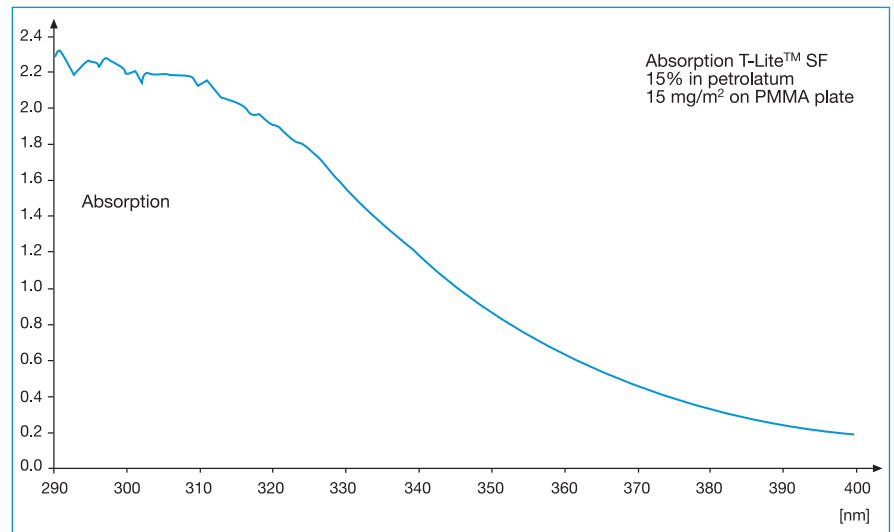
Molecular formula	Molecular weight	Appearance
TiO ₂	80 (for TiO ₂)	White powder

T-Lite SF-S**Chemical name**

Titanium Dioxide (and) Hydrated Silica (and) Aluminum Hydroxide (and) Dimethicone/Methicone copolymer

CAS-No.

13463-67-7; 1343-98-2; 21645-51-2; 68037-59-2

**Key Target Applications**

Sun / Beach / Seasonal and Sports Care

- Protection against harmful effects of UVB and UVA radiation resulting from sun exposure
- Protection from sunburn, premature skin-ageing and photo carcinogenesis

Daily Care

- Protection against harmful UVB radiation
- Protection against UVA radiation which has been shown to increase premature skin-ageing, including wrinkles and loss of elasticity
- T-Lite allows transparent and elegant daily care formulations

Color Cosmetics

- Protection against broad-spectrum UV radiation without compromising cosmetic elegance
- T-Lite provides excellent transparency, and thus does not effect the color shade

SPF Booster (all applications)

- Small amount of T-Lite is sufficient to boost the overall efficacy of sun protection products
- T-Lite increases the optical path length and thus enhances efficiency of organic absorbers – total percentage of sunscreen can be reduced

Stability

The minimum storage time for T-Lite SF-S in the original sealed containers is 3 years.

Toxicology

The Uvinul range of UV absorbers and micro pigments have been toxicologically assessed for their suitability in cosmetic preparations. On the basis of information at our disposal and provided that the recommended concentrations and fields of application are adhered to, there is no evidence of any toxicological risk associated with their use.

Safety Data Sheets

Safety Data Sheets are available on request.

Note

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