



# SIMPSTB™ UVAB-480S

**Oil Soluble Photostabilizers / UVAB Absorbers /  
Active Ingredients for Personal Care, Household  
Care and Multiple Formulations**

**Technical Data Sheet  
(TDS)**



**SIMP GROUP**

**Shanghai SIMP Biotechnology Co., Ltd.**

Web site: [www.simpbiotech.com](http://www.simpbiotech.com)

E-mail: [simpbiotech@simpbiotech.com](mailto:simpbiotech@simpbiotech.com)

Shanghai Headquarters	Tel: 86-21-5990 7606, 5990 7607	Fax: 86-21-5990 7602
Guangzhou Office	Tel: 86-20-6684 4588	Fax: 86-20-6684 4588
Beijing Office	Tel: 86-10-6447 5821, 6447 5822, 6447 5823	Fax: 86-10-6447 5819

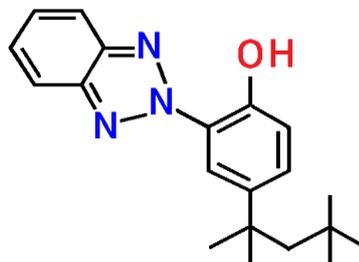
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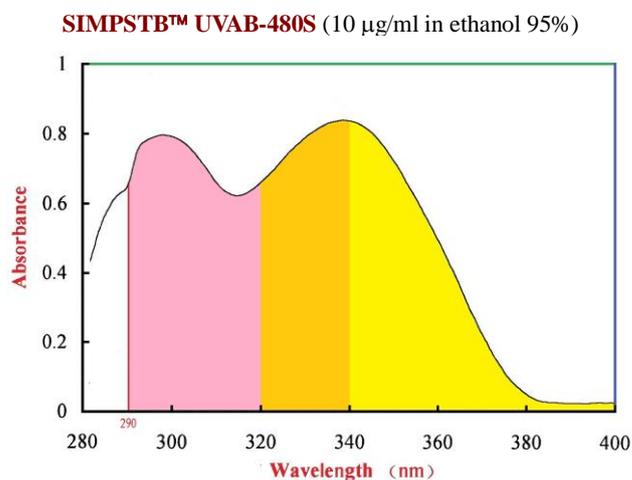
## Product Information

<b>Product Name:</b>	<b>SIMPSTB™ UVAB-480S</b>	
<b>INCI Name:</b>	Octrizole	
<b>Chemical name:</b>	2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol /	
<b>Synonyms:</b>	2-(2'-HYDROXY-5'-TERT-OCTYL PHENYL) BENZOTRIAZOLE; 2-(2-HYDROXY-5-TERT-OCTYLPHENYL)BENZOTRIAZOLE; OCTRIZOLE	
<b>CAS No:</b>	3147-75-9	<b>EINECS No:</b> 221-573-5
<b>Formula:</b>	C <sub>20</sub> H <sub>25</sub> N <sub>3</sub> O	<b>Molecular Weight:</b> MW =323.44 g/mol

**Structural formula:**



**UV Spectrum:**



## Definition, Properties, Benefits and Applications

**Description:** **SIMPSTB™ UVAB-480S** is a white to pale oil-soluble powder. It is a Benzotriazole derivative.

**EU-Functions:** **STABILISING**  
**(INCI)** **UV ABSORBER** {Cosmetics - CosIng [EC Regulation (v.2)] 2017}.

**Benefits:** **SIMPSTB™ UVAB-480S** is a UV-AB absorber with activity in the UV-A region. Provides supplemental UV protection and boosts SPF activity. It can therefore also be used in day creams to prevent premature ageing of the skin and to protect the lips.

**SIMPSTB™ UVAB-480S** is most commonly used as an UV light absorber helping to stabilize and protect plastics, polyesters, celluloses, acrylates, dyes, fragrance, rubber, synthetic and natural fibers, waxes, detergent solutions, and orthodontic adhesives against discoloration and deterioration. It is used as an UV light absorber / stabilizer at not more than 0.5% of the pesticide formulation in animal tags and similar slow release devices.

In cosmetics and personal care products, **SIMPSTB™ UVAB-480S** is used in the formulation of nail polish and enamels, other manicuring preparations, as well as perfumes, fragrances, shampoos and other hair care products.

**SIMPSTB™ UVAB-480S** protects cosmetics and personal care products from deterioration by absorbing UV rays. It is both light and heat stable. Due to its high stability, it may be used in agricultural applications for the prevention of leaf burn and apple peel spot.

It is used as a synergist for UVAB (280-400nm) filter in cosmetic sun protection and skin whitening formulations. Also used in medicinal topical preparations.

**Solubility:** Soluble in many organic solvents, liquid UV absorbers. Insoluble in water.

### Solubility of SIMPSTB™ UVAB-480S at 20°C (g / 100ml solvents):

Water	: < 0.001	SIMPSOL DPGA	: 2.9
Ethanol	: 0.7	Methyl Isobutyl Ketone	: 19
n-Butanol	: 2.0	IPP	: 30
n-Heptane	: 8	IPM	: 39
PM Acetate	: 14	Xylene	: 50
n-Butyl Acetate	: 24.5	Benzene	: 65
Ethyl Acetate	: 28	Mineral Spirits	: 9.5
OMC (UV Filter)	: 17	OSC (UV Filter)	: 11

## Applications:

The **SIMPSTB™ UVAB-480S** is used in a large number of cosmetics to protect the skin or the hair, the product itself, particularly the colorant, the fragrance or the active ingredient against the harmful effects of UV radiation.

**SIMPSTB™ UVAB-480S** is strong ultraviolet light absorber (UVAB 280-400 nm) and effective for a broad range of UV absorption. In addition. It is used as an oil soluble UV-A and UV-B filter in cosmetic sun protection formulations. It is also noted for its low color contribution, low volatility and excellent solubility.

As an oil-soluble UV filter, **SIMPSTB™ UVAB-480S** is an ingredient for almost every cosmetic preparations, including emulsions, oils, gels, lipsticks, nail varnishes etc. This also applies for the pigments and the like.

It is also an effective synergist for UVA and UVB 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. **SIMPSTB™ UVAB-480S** and other **SIMPSSN™ UV filters** 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 **SIMPSTB™ UVAB-480S** and other **SIMPSSN™ UV filters** to protect the skin is subject to legislation in many countries. 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.

The combination of **SIMPSTB™ UVAB-480S** with other **SIMPSSN™ UV filters** in the personal care formulations is recommended.

## Protecting the hair

Both the ultraviolet and visible components of sunlight have tangible effects on the hair in that they bleach it and make it brittle. As has been demonstrated in studies, it is possible to provide protection against these effects with UV filters. **SIMPSTB™ UVAB-480S** and the Broad-band filters such as the **SIMPSSN™ BP-3**, **SIMPSSN™ BP-4** and **SIMPSSN™ UVAB filters** are particularly suitable and can be used in hair-care products such as gels, setting lotions, normal and gloss hair sprays.

## Protecting sensitive Products:

UV filters can be used in cosmetics to protect the colorants against fading, to improve the stability of fragrance oils and active constituents against oxidation and to stabilize the viscosity of gels and shampoos. It is always necessary to add a UV filter/UV absorber if the cosmetic product is exposed to UV radiation, as is the case when the packaging is transparent. The protection of products usually requires concentrations of 0.05-0.5%, rather less than for skin protection. In these concentrations, **SIMPSTB™ UVAB-480S** and other **SIMPSSN™ UV filters** are generally not subject to legislation (though such legislation as exists must be observed), i.e. all the **SIMPSSN™ UV filters** can, in principle, be used to protect products against UV radiation.

## Important:

It is strongly recommended that **SIMPSTB™ WOSD-850 series products (Photostabilizers)** are much more suitable to protecting the sensitive products in formulations both water and oils soluble.

**Use level:** As a stabilizer: 0.1-2.0%  
Max. in food packaging: ≤ 0.5%  
As UVAB filter /UV absorber synergist: 1~5 % (W/W)

**REGULATIONS:**

**FDA Status** **SIMPSTB™ UVAB-480S** (Octrizole / CAS: 3147-75-9) as the light stabilizer is sanctioned by the FDA (USA) as a stabilizer for polycarbonate resins (21 CFR 178.2010) complying with Section 177.1580, provided the levels of usage do not exceed 0.5% by weight of polymer and that the finished resins contact food only under conditions of use E, F, and G described under Table 2 of Section 176.170 (c).

**Note:** National regulations have to be observed.

**Toxicological Information**

**Toxicology** The **SIMPSTB™ UVAB-480S** has been toxicologically assessed for its 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.

**Acute toxicity:**

LD<sub>50</sub> / oral / rat : > 10000 mg / kg  
Primary skin irritation / rabbit / SIMP test : Non-irritant  
Skin sensitization on guinea pigs: Negative. Negative.  
Other information: Ames-test: no mutagenic effect.

**Safety:** **SIMPSTB™ UVAB-480S** can be safety handled without irritation caused to the skin at the recommended use level.

**Product Technical Information**

**Specifications:**

<b>Appearance:</b>	White to pale crystalline powder; Almost odorless or very weak characteristic odor.	
<b>Assay:</b>	≥ 98	% (GC)
<b>Melting Point:</b>	≥100	°C
<b>Flash point:</b>	≥ 280	°C
<b>Loss on Drying:</b>	≤ 2.0	% (60°C)
<b>Bulk density:</b>	~ 400	kg/m <sup>3</sup>
<b>Moisture content:</b>	≤ 2 %	(K.F.)
<b>Log POW:</b>	≥ 2.4 (Octanol / water partition coefficient)	

**Note:**

The properties and specification in detail also can be seen on **TDS** ('**Technical Data Sheet**') of **SIMPSTB™ UVAB-480S**. A '**Technical Data Sheet**' (**TDS**) of the product is available upon requirement.

**“Product Specification or Quality Standards”** — Please see the **COA** (**Certificate Of Analysis**) from the product **SIMPSTB™ UVAB-480S** of the **SIMP**, and / or **order on agreement !**

The Quality of the product **SIMPSTB™ UVAB-480S** meets the requirements from the **STSC** [ **STSC** = 《**Safety and Technical Standards for Cosmetics**》 Version 2015, **China** ] and / or **EU** and the like.

## Other Information

- Package:** Drums of net: 25-kg / drum capacity. *or order on agreement !*
- Storage:** The drums in which **SIMPSTB™ UVAB-480S** is stored should be kept tightly closed in a light resistant, dry and cool place.
- Stability:** The minimum storage time for the **SIMPSTB™ UVAB-480S** in the original sealed containers is at least 2 years.
- Shipping / Handling:** National legislation. No restrictions.  
See **Material Safety Data Sheet (MSDS)**

### Order Information

- A. Product Trade Name:** **SIMPSTB™ UVAB-480S**
- B. Package:** Net: 25kg /carton (drum) lined a PE bag.  
*or order on agreement !*

### TDS & MSDS

The '**Technical Data Sheet**' (**TDS**) and '**Material Safety Data Sheet**' (**MSDS**) of the product also is available on requirement.  
Different reference formulations are available and can be sent on request.

### Remark

Although these data and information have been prepared with the utmost possible care, we reserve the right to make changes due to product improvement and other considerations.

## Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This **Technical data sheet (TDS)** or **Material safety data sheet (MSDS)** applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this **TDS** or **MSDS**. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this **TDS** or **MSDS** is based on technical data judged to be reliable, **SIMP Biotechnology Co., Ltd.** and **SIMP GROUP COMPANIES** assumes no responsibility for the completeness or accuracy of the information contained herein.

## Contact us and credit:

### SIMP GROUP

## Shanghai SIMP Biotechnology Co., Ltd.

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Address: Shang-xue Road 229 (Feng-mao Road 580), Jiading District, Shanghai 201 801, CHINA

Web Site: [www.simpbiotech.com](http://www.simpbiotech.com)

E-mail: [simpbiotech@simpbiotech.com](mailto:simpbiotech@simpbiotech.com)

Tel.: ☎ 86-21-5990 7606, 5990 7607

Fax: ☎ 86-21-5990 7602

Guangzhou Office: ☎ 020-6684 4588

Beijing Office: ☎ 86-10-6447 5821, 6447 5822, 6447 5823

## Advice:

The information and statements presented herein, while not guaranteed, were prepared by technical personnel and, to the best of our knowledge and belief, is true and accurate as of the date hereof.

Before using one of these products of **SIMP GROUP COMPANIES**, read, understand and comply with the information and precautions in the **Product Instruction Sheet (PIS)**, the **Technical Data Sheet (TDS)**, the **Material Safety Data Sheets (MSDS)**, label and other literature about the product. No warranty, representation or guarantee, express or implied, is made regarding accuracy, performance, stability, reliability or use. This information is not intended to be all-inclusive, because the manner and conditions of use, handling, storage and other factors may involve other or additional safety or performance considerations. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information, products or vendors referred to herein. **NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.** Nothing herein is to be taken as permission, inducement or recommendation to practice any patented invention without a license.

**Note:**

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According to  
《Safety and Technical Standards for Cosmetics》(STSC) Version 2015, China.  
And Regulation (EC) No. 1907/2006

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