



# SIMPSSN™ OCR

(INCI Name: **Octocrylene**)

**Oil Soluble UVB Filter and Absorber Active  
Ingredient for  
Cosmetic and Pharmaceutical Topical  
Formulations**

**Product Instruction Sheet**  
(**PIS**)



**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

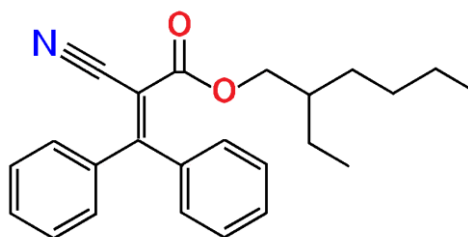
# SIMPSSN™ OCR

## Oil Soluble UV-B Filter and Absorber for Cosmetic and Pharmaceutical Topical Formulations

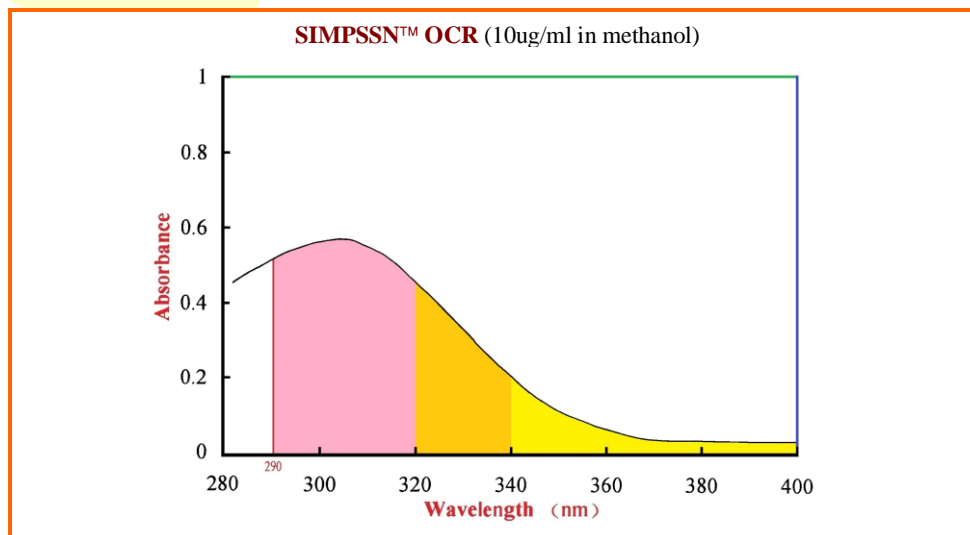
### Product Information

<b>Product Name:</b>	<b>SIMPSSN™ OCR</b>		
<b>INCI Name:</b>	Octocrylene ( <b>OCR</b> )		
<b>USP Name:</b>	Octocrylene		
<b>Chemical name:</b>	2-Ethylhexyl-2-cyano-3,3-diphenyl-2-propenoate; 2-Ethylhexyl-2-cyano-3,3-diphenyl acrylate		
<b>Synonyms:</b>	OCR; Octocrilene, Uvinul N-539		
<b>CAS Name:</b>	2-ethylhexyl 2-cyano-3, 3-diphenyl-prop-2-enoate		
<b>CAS No:</b>	6197-30-4	<b>EINECS No:</b>	228-250-8
<b>Formula:</b>	C <sub>24</sub> H <sub>27</sub> NO <sub>2</sub>	<b>Molecular Weight:</b>	MW =361.48 g/mol

**Structural formula:**



**UV Absorption spectrum:**



## Definition, Properties, Benefits and Applications

**Description:** **SIMPSSN™ OCR (Octocrylene)** belongs to the category of classic **UV** filters, already used as early as in 1960's in USA. However the number of new products from around the world containing **SIMPSSN™ OCR** today is still increasing. It is a useful UV filter additive for cosmetics and sun care products.

**EU-Functions:**  
**(INCI)**

**UV FILTER**

**UV ABSORBER** {Cosmetics - CosIng [EC Regulation (v.2)] 2017} .

**Benefits:**

- **SIMPSSN™ OCR** is an effective oil soluble and liquid **UVB** absorber offering additional absorption in the short-wave **UVA** spectrum. Maximum absorption is at 303nm.
- Suitable for a wide variety of cosmetic applications.
- Combinations with other **UVB** absorbers such as **SIMPSSN™ OSC**, **SIMPSSN™ OMC** are useful when very high Sun Protection Factors are desired.
- When **SIMPSSN™ OCR** is used in combination with the **UVA** absorbers **SIMPSSN™ DHHB**, **SIMPSSN™ BMDM** or other **SIMPSSN™ UVAB filters** or Zinc Oxide, broad spectrum protection can be achieved.
- The oil soluble **UVB** filter is ideal for the formulation of water-resistant sunscreen products.
- **SIMPSSN™ OCR** is a safe and effective **UVB** absorber. It is approved world-wide. Concentration maximum varies according to local legislation

**Solubility:** Miscible with ethanol etc. Soluble in most organic solvents and cosmetic oils.

<b>Solubility of SIMPSSN™ OCR in different solvents at 20°C (W/W)</b>	
<i>Solvent</i>	<i>Concentration</i>
Methanol	Miscible
Ethanol	Miscible
Isopropyl Myristate	Miscible
Olive Oil	Miscible
Caprylic Capric Triglyceride	Miscible
C12-15 Alkyl Benzoate	Miscible
Dipropylene Glycol	Miscible
Isohexadecane	25%

**Note:** **SIMPSSN™ OCR** is insoluble in water and several solvents and oils. (W/W)

<i>Solvent</i>	<i>Concentration</i>
Water	immiscible
Mineral Oil	immiscible
Cyclomethicone	immiscible
Propylene Glycol	immiscible
Glycerin	immiscible

**Solubiliser:** Moreover **SIMPSSN™ OCR** is excellent solubilisers for non-soluble cosmetic ingredients so that the overall solvent load could be reduced.

The solubility of other solid **UV** filters in **SIMPSSN™ OCR**: (W/W)

<i>Solid UV Filters</i>	<i>Concentration</i>
Benzophenone-3 (INCI) <b>SIMPSSN™ BP-3</b> (UVBA-Filter)	32%
4-Methylbenzylidene Camphor (INCI) <b>SIMPSSN™ MBC</b> (UVB-Filter)	25%
Ethylhexyl Triazone (INCI) <b>SIMPSSN™ EHT</b> (UVB-Filter)	23%
Butyl Methoxydibenzoylmethane (INCI) <b>SIMPSSN™ BMDM</b> (UVA-Filter)	26%
Diethylamino Hydroxybenzoyl Hexyl Benzoate (INCI) <b>SIMPSSN™ DHHB</b> (UVA-Filter)	49%
Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine (INCI) <b>SIMPSSN™ BEMT</b> (UVAB-Filter)	25%

**Application:** **SIMPSSN™ OCR** is an excellent **UVB** absorber, insoluble in water, approved world-wide. Its concentration maximum varies according to local legislation. The oil soluble **UVB** filter is ideal for the formulation of water-resistant sunscreen products. It is an excellent SPF booster widely used with other **UV** absorbers. **SIMPSSN™ OCR** is often found in sunscreen preparations having SPF factors greater than 30+. However, **UV** filters are seldom used in isolation in a formulation but rather jointly in a harmonious and efficacious protection system covering the spectrum from **UVB** to **UVA**. **SIMPSSN™ OCR** and **SIMPSSN™ HMS** are the ideal choice for boosting and reaching higher SPF in conjunction with other popular **UVA** filters like **SIMPSSN™ BMDM**, **SIMPSSN™ DHHB** and **UVAB** filters like **SIMPSSN™ MBBT-N**, **SIMPSSN™ BEMT** and **SIMPSSN™ BP-3** etc.

**Very stable:** **SIMPSSN™ OCR** is very stable in all environment, polar or non-polar because their active groups are hydrogenbonded intramolecularly. Their electrons are therefore less available for interaction with other ingredients in a formula or biological substrates on the skin.

**An extra boost to getting high SPF:**

**SIMPSSN™ OCR** is an excellent **UVB** absorber, insoluble in water. It is an excellent SPF booster widely used with other **UV** absorbers. **SIMPSSN™ OCR** is often found in sunscreen preparations having **SPF** factors greater than 35. However, **UV** filters are seldom used in isolation in a formulation but rather jointly in a harmonious and efficacious protection system covering the spectrum from **UVB** to **UVA**. **SIMPSSN™ OMC**, **SIMPSSN™ OSC** and **SIMPSSN™ HMS** are the ideal choice for boosting and reaching higher **SPF** in conjunction with other popular **UVA** filters like **SIMPSSN™ DHHB**, **SIMPSSN™ BMDM** and **UVAB** filters e.g. **SIMPSSN™ MBBT-N**, **SIMPSSN™ BEMT** and **SIMPSSN™ BP-3** and the like.

**Added value for sunscreen formulas:**

An **UV** filter is often chosen if it has further desirable properties above **UV** protection. **SIMPSSN™ OCR** score well by contributing to the non-water solubility of sun care products and can also improve sensory profile by providing emolency to the formulas.

**Use level:**  
(W/W)

**(National regulations have to be observed)** ≤ 10 %.

Generally concentration used: 2-7%

The concentration recommended is 3-6%.

As the Photostabilizer to protect the sensitive products in formulations:

0.05-0.5 %; generally: 0.1-0.3%

**REGULATIONS:**

**SIMPSSN™ OCR** is approved world-wide. Concentration maximum varies according to local legislation.

**Approval status:**

**Max. amounts:**  
(W/W)

EU	China	Australia	USA	Japan
+ (10%)	+ (10%)	+ (10%)	+ (10%)	+ (10%)

+ = Approved as a sunscreen agent (with max. concentration) .

**SIMPSSN™ OCR (INCI Name: Octocrylene )** is approved for use in Europe by the European Union's Scientific Committee for Cosmetic Products & Non-Food Products. It is also approved in China, Canada by Health Canada, in Australia, Brazil, South Africa, the Asian states and other countries.

It is approved for use in the **USA** by the Food and Drug Administration and is permitted in Japan.

## Toxicological Information

**Toxicological Information:**

The **SIMPSSN™ OCR** 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: ≥ 5000mg/kg (BW).

LD<sub>50</sub> / oral / mouse: ≥ 5000mg/kg (BW).

**Local effects:** Eye: non-irritating (rabbit)

**Skin:** Practically non-irritating to rabbit skin (10% corn oil).

**Sensitization:**

Non- sensitizer to guinea pig skin.

Human RIPT: Non-irritating / Non-sensitizing (10% corn oil).

**Other Information:** Phototoxicity: Nonphototoxic (10% in ethanol).

**Safety:** **SIMPSSN™ OCR** can be safety handled without any irritation caused to the skin at recommended use level. Read and understand the **Material Safety Data Sheet (MSDS)** before using or handing this product.

## Technical Information

### Properties & Specification:

<b>Appearance:</b>	Viscous yellowish to brown liquid with weak characteristic odor. (RT)		
<b>Identification:</b>	Passes QB and USP Tests for Ultraviolet absorption spectrum.		
<b>Assay:</b>	≥ 95.0	(InC: ≥ 97.0)	% (W/W;GC/HPLC)
<b>Density:</b>	1.010-1.080		g/cm <sup>3</sup> (25°C)
<b>Refractive Index:</b>	1.550-1.580		n <sup>20</sup> <sub>D</sub>
<b>Melting point:</b>	~-10		°C
<b>Boiling point:</b>	~218		°C (1.5 mmHg)
<b>Flash point:</b>	≥ 115		°C
<b>Solubility:</b>	Insoluble in water. Miscible with ethanol etc. Soluble in most organic solvents.		
<b>Log POW:</b>	≥ 6.0	(Octanol / water partition coefficient)	

### Note:

The properties and specification in detail also can be seen on **TDS** (**Technical Data Sheet**) of **SIMPSSN™ OCR**. 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 **SIMPSSN™ OCR** of the **SIMP**, and / or **order on agreement** !

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

## Other Information

<b>Packaging:</b>	Drums of net: 200kg/drum capacity. <i>or order on agreement !</i>
<b>Storage:</b>	Store in tightly-closed containers under normal conditions (RT). (protected from sunlight). Storage class (VCI): Flammable liquids if not storage class 3A or B.
<b>Stability:</b>	Stable at normal conditions. The minimum storage time for the <b>SIMPSSN™ OCR</b> in the original sealed containers is at least <b>2</b> years.
<b>Shipping / Handling:</b>	National legislation. No restrictions. See <b>Material Safety Data Sheet (MSDS)</b>

### Order Information

- A. Product Trade Name:** **SIMPSSN™ OCR**
- B. Package:** Net: 200 kg lacquer-lined drum.  
*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 with **SIMPSSN™ OCR** 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.

### 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

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**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.

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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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