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SIMPSSN™ OMC

(INCI Name: Ethylhexyl Methoxycinnamate)

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

Product Instruction Sheet

(PIS)

SIMP GROUP

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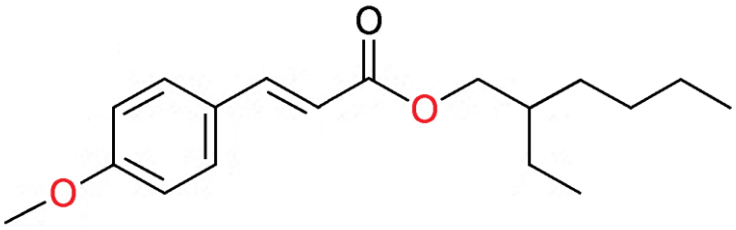
SIMPSSN™ OMC

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

Product Information

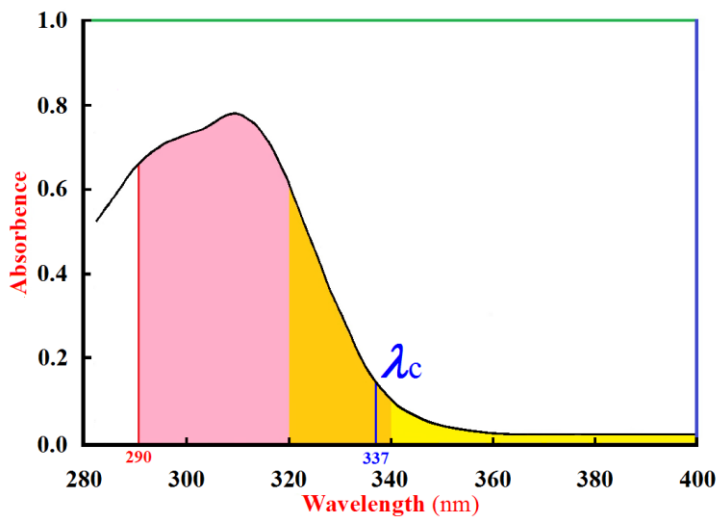
Product Name:	**SIMPSSN™ OMC**
INCI Name:	Ethylhexyl Methoxycinnamate (**EHMC / OMC**)
CTFA Name:	Octyl Methoxycinnamate (**OMC**)
USP Name:	Octinoxate
Chemical name:	2-Ethylhexyl 4-methoxycinnamate
Synonyms:	p-Methoxycinnamic acid 2-ethylhexyl ester；OMC; EHMC
CAS No:	5466-77-3 **EINECS No:** 226-775-7
Formula:	$C_{18}H_{26}O_3$ **Molecular Weight:** MW =290.40 g/mol

Structural formula:



UV Absorption spectrum:

SIMPSSN™ OMC (10mg/l in ethanol)



Definition, Properties, Benefits and Applications

Description:

SIMPSSN™ OMC is the most frequently used **UV** filter in the world. Broad **UV-B** absorbency profile. It can readily be incorporated without problem in all the usual cosmetic raw materials (fats, oils and other sunscreen actives). U.S. approved use level: up to 7.5%. E.U. and China approved use level: up to 10%. Use level in combination with other sunscreen actives: 2.0-7.5%.

Approval Status: Globally approved.

EU-Functions: (INCI)

UV FILTER

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

Key Properties:

SIMPSSN™ OMC is the liquid UV-B filter, oil soluble, Water insoluble. very good protection potential, excellent dissolving properties for other solid organic UV filters. Also, it is in specially stabilized grade.

Benefits:

SIMPSSN™ OMC is a highly effective UVB filter and UVB absorber with a specific extinction (E 1% / 1cm) of min. 830 at 308nm in Methanol and has additional absorption in the short-wave UVA spectrum.

- **SIMPSSN™ OMC** is in specially stabilized grade.
- Suitable for a wide variety of cosmetic applications.
- **SIMPSSN™ OMC** remains a liquid at temperatures as low as -10°C.
- **SIMPSSN™ OMC** can boost the SPF and PFA when used in combination with other UVB and UVA filters.
- **SIMPSSN™ OMC** is ideal for the formulation of water-resistant sunscreen products.
- **SIMPSSN™ OMC** is an excellent solubilizer for crystalline **UV** filters and absorbers.
- Approved world-wide. Concentration maximum varies according to local legislation.
- **SIMPSSN™ OMC** is a safe and effective **UVB** filter and absorber.

Solubility:

Soluble in organic solvents and cosmetic oils； Insoluble in water.

Solubility of SIMPSSN™ OMC in different solvents at 20°C

Solvent	Concentration
Water	< 0.0002 g/l
Propylene Glycol	miscible
Ethanol	miscible
Capric/Caprylic Triglyceride	miscible
C_{12-15} Alkyl Benzoate	miscible
Acetone	miscible

Note: These values are taken out of Technical Data Sheets or Material Safety Data Sheets.

Applications:

The **SIMPSSN™ OMC** is used in a large number of cosmetics to protect the skin and the hair against the harmful effects of **UV** radiation.

As an oil-soluble **UV** filter, **SIMPSSN™ OMC** is an ingredient for almost every cosmetic preparations, including emulsions, oils, gels, lipsticks, nail varnishes and the like.

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. **SIMPSSN™ OMC** 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 **SIMPSSN™ OMC** 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 inorganic **UV** filters 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 **SIMPSSN™ OMC** with other **SIMPSSN™ UV filters** in the personal care formulations is recommended.

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 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, **SIMPSSN™ OMC** and other **SIMPSSN™ UV filters** are generally not subject to legislation (though such legislation as exists must be observed), 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.

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. When **SIMPSSN™ OMC** is used together with **UV-AB** Broad-band filters such as the **SIMPSSN™ BP-3, SIMPSSN™ BP-4, SIMPSSN™ MBBT-N** and **UV-A SIMPSSN™ DHHB** filters, its formulations are particularly suitable and can be used in hair-care products such as gels, setting lotions, normal and gloss hair sprays.

Use level:
(W/W)

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

Generally：2-7 %.

(Use as a photostabilizer) 0.05-0.5%.

REGULATIONS

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

Approval status:	**EU**	**China**	**Australia**	**USA**	**Japan**
Max. amounts: (W/W)	+ (10%)	+ (10%)	+ (10%)	+ (2-7.5 %)	+ (5-10%)

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

SIMPSSN™ OMC [INCI Name: Ethylhexyl Methoxycinnamate (**EHMC / OMC**)] is approved for use in Europe by the European Union's 's Scientific Committee for Cosmetic Products & Non-Food Products. It is also approved in China, Canada by Heath 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. It's also permitted in **Japan**.

China and EU

According to the EEC Cosmetic Directive 76/768/EEC, **SIMPSSN™ OMC** (**INCI Name**: Ethylhexyl Methoxycinnamate) is permitted as UV-filter (Annex VII, part 2, reference no.12) in a maximum authorized concentration of 10%.

EU Status:

SIMPSSN™ OMC [INCI Name: Ethylhexyl Methoxycinnamate (**OMC**)] **was** approved as **UV** filter on part I of Annex VII of the European Cosmetics Directive 76/768/EEC in concentration up to 10 %.

EC (2017) Status: **EU(2017) Renew:**

EU Regulations (INCI/EC)	**Cosmetic Ingredient:** **{Cosmetics - CosIng - Ingredient [EC Regulation (v.2)] 2017}**		
Ingredient:	**INCI/EC Name:**	Ethylhexyl methoxycinnamate	
Functions:	**UV FILTER** **UV ABSORBER**		
Cosmetic Restriction:	10% **VI/12**	Regulation Regulated By	(EC) No 1223/2009 83/574/EEC
Maximum concentration in ready for use preparation:	**10%**	Reg (EU) 2017/238 of 10 February 2017- date of application from September 2017	
Other:	Not more than 0,5 % to protect product formulation		
Wording of conditions of use and warnings:	-		

USA Status: Category 1, OTC Sunscreen Monograph. Authorized concentration of 2-7.5%.

Japan: Japanese name: 2-Ethylhexyl 4-Methoxycinnamate

CLS Ingredient Code no. 500607

Monograph: JSCI

SIMPSSN™ OMC (Ethylhexyl Methoxycinnamate) is permitted to be used in cosmetic products in the following concentrations:

- ♦ Oral Preparations; Lip Preparations: max. concentration 7.5%
- ♦ Bath Preparations: max. concentration 5.0%
- ♦ Eyeliner Preparations: max. concentration 1.0%
- ♦ All other preparations: max. concentration 10.0%

The total % of UV absorbers shall not exceed 10%.

JSCI = Japanese Standards of Cosmetic Ingredients

CLS = The Comprehensive Licensing Standards of Cosmetics by Category 1998.

NOTE: The product has not been checked according to the relevant JSCI Monograph.

Toxicological Information

Toxicological Information: The **SIMPSSN™ OMC** 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_{50} / oral / rat: ≥ 8000mg/kg (BW)

LD_{50} / oral / mouse: ≥ 5500mg/kg (BW)

Local effects: Eye: non-irritants (rabbit)

Skin: Practically non-irritating to rabbit skin (20% corn oil).

Sensitization:

Primary skin irritation / rabbit / **SIMP** test: non-irritant
Primary mucous membrane irritation / rabbits'eyes / **SIMP** test: non-irritant

Other Information:

Phototoxicity: Nonphototoxic (10% in ethanol).

Safety: **SIMPSSN™ OMC** 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.

Product Technical Information

COMPOSITION

(I) Ingredient(s)	INCI Name#	Amount*
SIMPSSN™ OMC	Ethylhexyl Methoxycinnamate	**A**

(II) Additives	INCI Name#	Amount*
Solvents	-	-
Preservative (self-preserving)	-	-
Others (buffers, antioxidants, colorants)	BHT/ Octrizole	**G**

#CTFA Dictionary.

***FDA - Code** (A ≥ 50%, B = 25-50%, C = 10-25%, D = 5-10%, E = 1-5%, F = 0.1-1%, G ≤ 0.1%).

Properties & Specification:

Appearance:	Colorless to yellowish liquid, almost odorless or weak characteristic odor. (RT)	
Identity:	IR and UV spectrum	Conforms QB/USP
Assay:	≥ 98.0 (InC：≥ 99.0)	% (GC/HPLC)
Density:	1.002-1.020	g/cm^3 (25°C)
Refractive index:	1.540-1.550	n^{20}_D
Acid value:	Max. 1.0	mg KOH/g
Boiling point:	198-200	°C (@ 3hPa)
Moisture content:	≤ 0.5	% (K. Fischer)
Log POW:	~ 6.1 (Octanol / water partition coefficient)	

Note: The properties and specification in detail also can be seen on **TDS** ('**T**echnical **D**ata **S**heet') of **SIMPSSN™ OMC.** A '**T**echnical **D**ata **S**heet' (**TDS**) of the product is available upon requirement.

"**Product Specification or Quality Standards**" —— Please see the **COA** (**C**ertificate **O**f **A**nalysis) from the product **SIMPSSN™ OMC** of the **SIMP, a**nd / or ***order on agreement !***

The Quality of the product **SIMPSSN™ OMC** meets the requirements from the **STSC** [**STSC** = 《**S**afety and **T**echnical **S**tandards for **C**osmetics》 Version 2015, **China**] and / or **EU** and the like.

Other Information

Packaging: Drums of net： 200-kg / drum capacity. *or* ***order on agreement !***

Storage: Store in tightly-closed containers under normal conditions (RT).

Stability: Stable at normal conditions. The minimum storage time for the **SIMPSSN™ OMC** in the original sealed containers is at least 2 years.

Shipping / Handling: No restrictions. See **M**aterial **S**afety **D**ata **S**heet (**MSDS**).

Order Information

A. Product Trade Name: **SIMPSSN™ OMC**

B. Package: Net: 200 kg lacquer-lined drum.
or ***order on agreement !***

TDS & MSDS

The '**T**echnical **D**ata **S**heet' (**TDS**) and '**M**aterial **S**afety **D**ata **S**heet' (**MSDS**) of the product also is available on requirement.

Different reference formulations with **SIMPSSN™ OMC** 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

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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, handing, 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
《**S**afety and **T**echnical **S**tandards for **C**osmetics》(**STSC**) Version 2015, **China.**
And Regulation (EC) No. 1907/2006

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