

Octyl Methoxycinnamate



Definition	UVB-filter, that absorbs the dangerous UV-light between 280-320 nm to protect the skin from sunburn and cancer
Chemical name	2 Ethylhexyl 3-(4-Methoxyphenyl)-2 Propenoate,
Trade name	OMC
CAS No.	5466-77-3
EINECS No.	226-775-7
INCI name	Ethylhexyl Methoxycinnamate,
CN code	2918 9990
Synonyms	Octinoxate (USA), Ethylhexyl Methoxycinnamate, Octyl Methoxycinnamate, Ethylhexylcinnamate

Producer

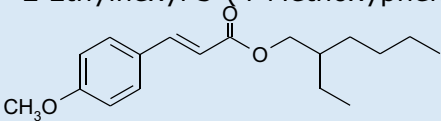
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Daiichi Fine Chemical Division

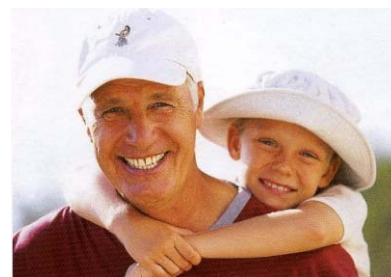
SPECIFICATION*

Chemical Name	2 Ethylhexyl 3-(4-Methoxyphenyl)-2 Propenoate	
Chemical Structure		
Empirical Formula	$C_{18}H_{26}O_3$	Molecular weight: 290.40 g/mol
Appearance	pale yellow, slightly yellow oily liquid	
Odour	Practically odourless	
Identification	A: IR absorption B: UV absorption	
Specific gravity	1.005 - 1.013	
Refractive index	1.542 - 1.548	
Acidity	max. 0.8 ml NaOH 0.1 N	
Chromatographic purity		
Purity	not less than 98.0%	
Individual impurity	not more than 0.5%	
Total impurities	not more than 2.0%	
Assay (GC)	95.0% to 105.0%	

*meets the quality requirements of the current USP Monograph for Octinoxate

Other Physico-Chemical Properties

Function	UV-B filter
Density	1.007-1.017
Freezing point	< -25°C
Boiling point	185°C - 195°C at 0.75 mm Hg



Storage and Packaging

Storage	Store at 15°C to 40°C Store away from incompatible substances. Incompatibilities: Oxidizers (strong): Fire and explosion hazard Protect from light
Standard packaging	35 kg / 200 kg packed in HDPE carboy and drums
Expiry date	2 years after production date in original packaging under adequate storage conditions

General function

Octyl Methoxycinnamate is one of the most widely used UV-B filters with very good protection potential. It is an organic compound, ideal for use in sun care and day care products for everyday protection against UV-B rays.

UV-B radiation (wavelengths between 320-400 nm) affects especially the epidermal layer of the skin, because it penetrates up to the stratum basale, where it causes the well known sun burn (erythema). Further on it induces damages on the DNA and suppresses the immune response of the skin.

Frequent and intense exposure to UV-B rays enhances the risk of fatal mutations eventually leading to skin cancer. Consequentially using sun care products, when you expose your skin to the sun is essential for a healthy and beautiful appearance.

Formulating

Due to Octyl Methoxycinnamate is a derivative of cinnamate acid (unsaturated fatty acid), an antioxidant should be added to the cosmetic composition, to guarantee the oxidative stability of the product. Antioxidant could be for example vitamin E or BHT.



Octyl Methoxycinnamate is a liquid oil-soluble UV filter and can be easily dispersed to the oil phase of cosmetic preparations. It is compatible with most cosmetic ingredients

It has furthermore excellent dissolving properties for solid UV filters like for example Butyl Methoxydibenzoylmethane. If you like to reach higher SPF values you should keep in mind, that a mixture of different UV filters would provide a solution.

With Octyl Methoxycinnamate an approximately SPF value of 1.5 can be expected for 1% of this filter.

Recommended use levels according to local regulations:

Europe	up to 10 %
US	up to 7.5 %
Japan	up to 20 %
Australia	up to 10 %

Literature: Gerd Kindl, Wolfgang Raab: Licht und Haut (1998), world wide web: Merck homepage, www.fda.gov/ohrms/dockets/dailys/00/Sep00/090600/cp00001_attachment_03.pdf, www.roche.com

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