

# Sun Care Portfolio – UV Filters

## Overview

Products	INCI	USAN	Range of Absorption			Absorbance Maximum Wavelength (nm)	Phase in Application	Appearance	Possible Application		Remarks
			UVB	UVA II	UVA I				Skin Protection	Product Protection	
<b>Tinosorb® A2B</b>	<b>TBPT</b> Tris-Biphenyl Triazine (nano)	—	■	■		310	Water	Dispersion of organic Particles	Yes	No	<ul style="list-style-type: none"> <li>Most efficient UVB/A II filter</li> <li>Application in all market segments</li> <li>Boosting effect in UVA I range</li> </ul>
<b>Tinosorb® M</b>	<b>MBBT</b> Methylene Bis-Benzo-triazolyl Tetramethylbutylphenol (nano)	Bisoc-trizole	■	■	■	305, 360	Water	Dispersion of organic Particles	Yes	No	<ul style="list-style-type: none"> <li>Unique photo-stable broad-spectrum UV filter for the water phase</li> <li>High contribution to UVA-PF and critical wavelength (CW)</li> <li>Synergy effect with oil soluble UV filters due to triple action</li> <li>The only white-colored UVA-absorber</li> </ul>
<b>Tinosorb® S</b>	<b>BEMT</b> Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	Bemo-trizinol	■	■	■	310, 345	Oil	Powder	Yes	No	<ul style="list-style-type: none"> <li>Most efficient oil soluble broad-spectrum UV filter</li> <li>Excellent photo-stability for long lasting protection</li> <li>Highest contribution to SPF and UVA-PF already at low concentration</li> <li>Outstanding stabilizer for photo-unstable UV filters</li> <li>Tinosorb® S Aqua: water-dispersible form of Tinosorb® S for more formulation flexibility.</li> </ul>
<b>Tinosorb® S Aqua</b>	...(and) Polymethyl Methacrylate						Water	Polymer Dispersion	Yes	No	
<b>Uvinul® A Plus</b>	<b>DHMB</b> Diethylamino Hydroxybenzoyl Hexyl Benzoate	—		■	■	354	Oil	Granular	Yes	Yes	<ul style="list-style-type: none"> <li>Photo-stability for reliable and long-lasting protection</li> <li>Efficient shielding against UVA radiation</li> <li>Excellent formulation flexibility and solubility</li> <li>Easy achievement of EU recommendation (UVA-PF/SPF≥1/3)</li> </ul>
<b>Univul® Easy</b>	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine (and) Diethylamino Hydroxybenzoyl Hexyl Benzoate (and) Ethylhexyl Methoxycinnamate (and) Ethylhexyl Triazone	—	■	■	■	310, 314, 345, 354	Oil	Liquid	Yes	No	<ul style="list-style-type: none"> <li>The easy way to achieve SPF and broad-spectrum UV protection</li> <li>Simply adding water to Univul® Easy gives a fine O/W emulsion</li> <li>Make your unique product by adding only thickener, preservatives and fragrances</li> <li>Cold processable</li> </ul>
<b>Uvinul® MC 80</b>	<b>EHMC</b> Ethylhexyl Methoxycinnamate	Octinoxate	■			310	Oil	Liquid	Yes	No	<ul style="list-style-type: none"> <li>Excellent solvent for other crystalline UV filters</li> <li>UVB filter with high cosmetic elegance</li> <li>Odorless, colorless, suitable for perfume-free formulations</li> </ul>
<b>Uvinul® N 539 T</b>	<b>OCR</b> Octocrylene	Octocrylene	■			302	Oil	Liquid	Yes	Yes	<ul style="list-style-type: none"> <li>Photo-stable UVB filter with good solvent properties</li> <li>Efficient stabilizer for photo-unstable UV filters</li> <li>Broad UVB absorbance for balanced UV protection</li> </ul>
<b>Uvinul® T 150</b>	<b>EHT</b> Ethylhexyl Triazone	Octyltriazone	■			314	Oil	Powder	Yes	No	<ul style="list-style-type: none"> <li>Best efficiency even at lowest UV filter concentration</li> <li>Highest photo-stable absorption of all available UVB filters</li> <li>Odorless, colorless, suitable for perfume-free formulations</li> </ul>
<b>Z-Cote®</b>	Zinc Oxide (nano)	ZnO	■	■	■	370	Water	Powder	Yes	No	<ul style="list-style-type: none"> <li>Inorganic broad-spectrum UV absorption</li> <li>Synergistic with organic UV filters</li> <li>enabling elegant and gentle formulations</li> </ul>
<b>Z-Cote®-HP1</b>	Zinc Oxide (and) Triethoxycaprylylsilane (nano)						Oil				

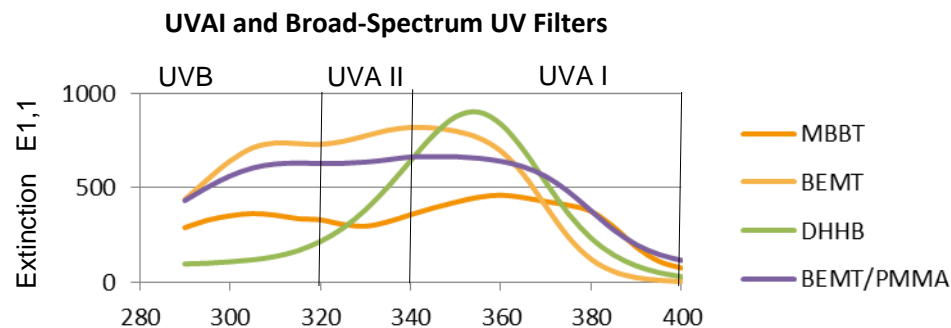
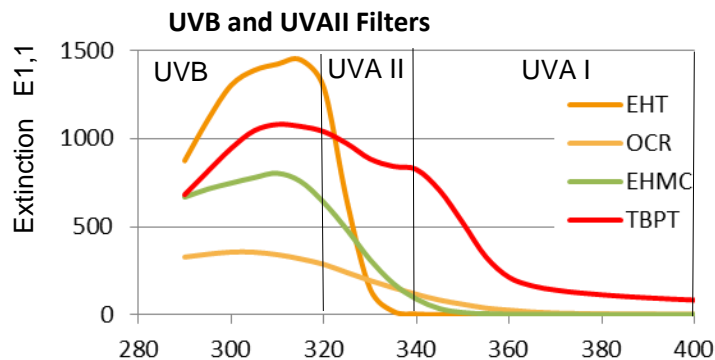
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## Regulatory Status and Extinction Spectra

Products	EU & Switzerland	India	Taiwan	Korea	Japan <sup>5)</sup>	China	Australia	ASEAN	USA	Canada	Brazil	Mexico
Tinosorb® A2B <sup>1)</sup>	10%	-	-	-	10%	-	10%	10%	-	-	10%	-
Tinosorb® M <sup>1)</sup>	10%	10%	10%	10%	10%	10%	10%	10%	2)	3)	10%	10%
Tinosorb® S	10%	10%	10%	10%	3%	10%	10%	10%	2)	3)	10%	10%
Tinosorb® S Aqua <sup>1)</sup>	10%	10%	10%	10%	3%	10%	10%	10%	2)	3)	10%	10%
Uvinul® A Plus	10%	10%	10%	10%	10%	10%	10%	10%	-	-	10%	10%
Uvinul® Easy	50%	50%	50%	37%	50%	50%	50%	50%	-	-	50%	50%
Uvinul® MC 80	10%	10%	10%	0.5-7.5%	20%	10%	10%	10%	7.5%	8.5%	10%	10%
Uvinul® N 539 T	10%	10%	10%	0.5-10%	20%	10%	10%	10%	10%	12%	10%	10%
Uvinul® T 150	5%	5%	5%	0.5-5%	5%	5%	5%	5%	2)	-	5%	5%
Z-Cote®, Z-Cote® HP 1	25%	25%	20%	25%	No limit	11%	25%	25%	25%	25%	No limit	25%

Explanation: 1) Approval as active, e.g. 10% Tinosorb® M active = 20% Tinosorb® M; 10% Tinosorb® A2B active = 20% Tinosorb® A2B; 10% Tinosorb® S active = 50% Tinosorb® S Aqua

2) TEA (Time and Extend Application) pending at FDA 3) Via DIN application 4) TEA (Time and Extend Application) intended 5) Japan: limit except for cosmetics coming into contact with mucous membranes



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