



ELUVSAFE – AVB™ (Avobenzone)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White or pale-yellow crystalline powder; fine powder
Physical Form	Powder
Identification	A. Infrared Absorption <197K> B. Ultraviolet Absorption <197U> Absorptivity at 360nm do not differ by more than 3.0%
Assay (GC)	95.0%~105.0%
Loss on Drying	0.5% max
Chemical Properties	
pKa	9.74 ± 0.13 (Predicted)
Water Solubility	27µg/L (at 20°C)
Thermal Properties	
Melting Point	81°C ~ 86°C
Specific Extinction	1100.0 ~ 1180.0
Specific Extinction (E 1%, 1cm at 357nm)	1100.0 ~ 1180.0

2. Processing Methods



Sunscreen cream

Use photostabilizers like octocrylene to prevent avobenzone degradation. Maintain the formulation's pH between 5.5-7.0 for optimal avobenzone stability.

Key Ingredients	Indicative Dosage (% w/w)
Avobenzone	3%
Octocrylene	5%
Isopropyl Myristate	4%
Shea Butter	3%
Cetyl Alcohol	2%
Water	~61%
Glycerine	4%
Xanthan Gum	0.5%

Sunscreen lotion

Utilize oil-soluble emollients, such as C12-15 alkyl benzoate, to dissolve avobenzone effectively. Avoid combining avobenzone with incompatible UV filters like octinoxate, as they can destabilize each other.

Key Ingredients	Indicative Dosage (% w/w)
Avobenzone	3%
Octocrylene	7%
C12-15 Alkyl Benzoate	5%
Glyceryl Stearate / PEG-100 Stearate	4.5%
Water	~60%
Glycerine	4%
Carbomer	0.2%



Sunscreen moisturizer with SPF

Add antioxidants like tocopherol or ascorbyl palmitate to reduce avobenzone degradation. Carefully combine avobenzone with hydrating agents to ensure they don't interfere with its efficacy.

Key Ingredients	Indicative Dosage (% w/w)
Avobenzone	3%
Octocrylene	5%
C12-15 Alkyl Benzoate	4%
PEG-10 Dimethicone	2%
Water	~66%
Glycerine	3%
Niacinamide	2%
Carbomer	0.3%
Panthenol	1%
Vitamin E	0.2%

Sunscreen spray (alcohol-based)

Ensure avobenzone is dissolved in a non-volatile, film-forming solvent system to prevent crystallization. Incorporate volatile silicones, such as cyclopentasiloxane, to enhance sprayability and maintain avobenzone in solution.

Key Ingredients	Indicative Dosage (% w/w)
Avobenzone	3%
Octocrylene	10%
Ethanol	65%
Isododecane	15%
C12-15 Alkyl Benzoate	5%
Vitamin E	0.5%
Fragrance & Preservative	1.5%

3. Dosing by Application

Products	Authorized dosage
Sunscreen Lotions/ Creams/ Sprays/ Moisturizers, Self-Tanning Sunscreen Products	Up to 3%
Skincare Creams, Lotions, Gels	Up to 3%
Lipsticks (with UV Protection), Foundation with SPF, Concealer, Skin highlighters	1-3%



4. Dosing by SPF Targets

Target SPF	Avobenzone %	Suggestions
30	2.0-3.0%	Pair with ~7-10% UVB filters (e.g., Octocrylene, Homosalate)
40	3.0%	Maximize Avobenzone; boost Octocrylene/Homosalate or add Tinosorb S
50	3.0%	Add higher load of UVB filters; stabilize with antioxidants
60	3.0%	Requires strong photostabilizers + layering multiple UVB agents
70	3.0%	Use synergy: Avobenzone + Octocrylene + Ensulizole + Tinosorb M or S

5. Grade Comparison Summary

Parameter	Cosmetic Grade
Purity (%)	≥ 98.0
Particle Size	Standard (~100-500 μm)
Appearance/ Physical Form	White to pale yellow powder
Solubility (Oil phase)	High
Photostability	Low without stabilizers
Formulation Compatibility	Requires UV stabilizer (e.g., Octocrylene)

The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

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