



ELUVSAFE - BzPNE4™ (Benzophenone 4)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White to yellowish solid; fine powder
Physical Form	Powder
Molecular Weight (g/mol)	308.31
Density or Specific Gravity	1.4574 (rough estimate)
Refractive Index	1.5300 (estimate)
Chemical Properties	
Water Solubility	300.92g/L at 25°C
Incompatibilities	Strong alkalis, peroxides, strong oxidizing agents
Hazardous Reactions	Stable; no hazardous decomposition if processed correctly
Thermal Properties	
Melting Point	170 °C
Boiling Point	305-491°C
Solvent	
Water	~30-32%
Ethanol	Freely Soluble
Propylene Glycol	Freely Soluble
Glycerin	Freely Soluble
Isopropanol	Freely Soluble
Methanol	Freely Soluble

2. Processing Methods



Cosmetic sunscreen cream

Dissolve Benzophenone-4 in the aqueous phase with gentle heating, as it is water-soluble. Maintain the final pH between 5-7 to ensure solubility and stability. Incorporate before emulsification for uniform distribution in the final product.

Key Ingredients	Indicative Dosage (% w/w)
Water (Purified)	70-80%
Glycerin	5.00%
Stearic Acid	3.00%
Cetyl Alcohol	3.00%
Glyceryl Monostearate	2.00%
Benzophenone-4	2.00%
Dimethicone	2.00%
Triethanolamine	1.00%
Methylparaben	0.20%
Propylparaben	0.10%
Fragrance	0.20%
Preservative (e.g., Phenoxyethanol)	0.50%

Lip balm

Since Benzophenone-4 is water-soluble and lip balm is typically anhydrous, incorporate it by pre-dissolving in a small amount of water or glycols, then emulsify into the balm using an emulsifier. Ensure uniform dispersion and compatibility with the wax/oil base.

Key Ingredients	Indicative Dosage (% w/w)
Beeswax	25%
Coconut Oil	20%
Shea Butter	10%
Joboba Oil	10%
Glycerin	5%
Benzophenone-4	2%
Vitamin E (Tocopherol)	1%
Fragrance	0.5%
Castor Oil	21.5%



Hair shampoo

Add Benzophenone-4 to the cool-down phase of hair shampoo formulations below 40°C to preserve its UV-protective properties. Maintain the shampoo's pH between 5 and 7 for optimal stability and performance. Add before surfactants to ensure even distribution and avoid precipitation.

Key Ingredients	Indicative Dosage (% w/w)
Water (Aqua)	50-80%
Sodium Laureth Sulfate (SLES)	13%
Cocamidopropyl Betaine	5%
Glycerin	3%
Benzophenone-4	0.5%
Guar Hydroxypropyltrimonium Chloride	0.2%
Citric Acid	0.3%
Phenoxyethanol	0.8%
Fragrance	0.2%
Sodium Chloride	0.5%
Disodium EDTA	0.1%



Foundation cream

Add Benzophenone-4 to the oil or cool-down phase of foundation cream formulations, ensuring it's fully dissolved to provide effective UV protection. Maintain the final pH between 5 and 7 to keep it stable and effective. Incorporate before emulsification to ensure uniform dispersion throughout the cream.

Key Ingredients	Indicative Dosage (% w/w)
Cyclopentasiloxane	8%
Caprylic/Capric Triglyceride	7%
Titanium Dioxide	5%
Iron Oxides	4.5%
Glycerin	4%
Benzophenone-4	3%
Dimethicone	3%
Cetearyl Alcohol	2.5%
Glyceryl Stearate	2%
Preservative (e.g., Phenoxyethanol)	1%
Fragrance	0.5%
Water (Aqua)	60%

3. Dosing by Application

Products	Authorized dosage %
Sunscreen Lotions, Creams	Upto 5%
Skin Care Creams, Lotions	Upto 5%
Lip stick/balm	Upto 5%

4. Grade Comparison Summary

Parameter	Technical Grade
Purity (Assay)	~95-98%
Appearance	Light yellow to brownish powder
UV Absorbance	May have reduced or variable absorbance
Solubility	May be slightly less soluble
Regulatory Compliance	TSCA listed



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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