



ELSURFAC – PEG400™ (Polyethylene Glycol)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White to off-white waxy solid (low MW); flakes; granules
Physical Form	Granules
Odor	Faint, characteristic odor
Density or Specific Gravity	1.27 g/mL at 25 °C
Refractive Index	n ₂₀ /D 1.469
pH (if aqueous solution)	5.5-7.0 (25°C, 50mg/mL in H ₂ O)
Chemical Properties	
Incompatibilities	Strong oxidizing agents.
Thermal Properties	
Melting Point	58-61°C
Boiling Point	>200°C
Flash Point	360-550 °F
Autoignition Temperature	About 360 °C

2. Processing Methods



Cosmetic lotions

Add Polyethylene Glycol (PEG) to the water phase of the lotion, typically during the heating phase. Mix thoroughly to ensure uniform distribution and formulation stability.

Key Ingredients	Indicative Dosage (% w/w)
Oil phase (emollients, oils, butters)	10-20%
Water (Aqua)	65%
Glycerin	5%
Caprylic/Capric Triglyceride	8%
Cetearyl Alcohol	4%
Polyethylene Glycol	2%
Glyceryl Stearate	2%
Shea Butter	3%
Dimethicone	2%
Panthenol (Pro-Vitamin B5)	1%
Tocopheryl Acetate	0.5%
Phenoxyethanol & Ethylhexylglycerin	1%
Fragrance	0.5%
Carbomer	0.5%
Triethanolamine (TEA)	0.5%

Hair shampoo

Use PEGs compatible with anionic or nonionic surfactants to improve shampoo texture and clarity. Avoid high temperatures to maintain functional integrity and ensure compatibility with surfactants

Key Ingredients	Indicative Dosage (% w/w)
Water (Aqua)	65%
Sodium Laureth Sulfate (SLES)	15%
Cocamidopropyl Betaine	8%
Polyethylene Glycol	2%
Glycerin	3%
Polyquaternium-10	0.5%
Preservative (e.g., Phenoxyethanol)	1%
Fragrance, Citric Acid	



Makeup foundation

In makeup foundation formulation, add Polyethylene Glycol (PEG) to the aqueous phase, selecting the appropriate molecular weight for desired texture and solubility. Ensure compatibility with pigments and emulsifiers for a smooth, uniform finish.

Key Ingredients	Indicative Dosage (% w/w)
Water (Aqua)	50%
Cyclopentasiloxane	10%
Dimethicone	5%
Glycerin	3%
Polyethylene Glycol	2%
Butylene Glycol	2%
Sodium Chloride	0.5%
Titanium Dioxide	5%
Iron Oxides	5%
Phenoxyethanol	0.8%
Ethylhexylglycerin	0.2%
Fragrance	

Skin Cleansers

When using PEGs in skin cleansers, add them slowly under gentle stirring to prevent air entrapment and ensure uniform blending. Mix thoroughly to maintain a stable, homogenous formula.

Key Ingredients	Indicative Dosage (% w/w)
Water	85.6%
Glycerine	1%
Ethanol	10%
Polyethylene Glycol	1%
Salicylic acid	0.5%
Benzoic acid	0.1%
Sodium citrate	0.35%
Vitamin E acetate	0.1%
Fragrance, Colorants, others	

3. Products



Authorized dosage	Cosmetics Creams/Lotions	Hair shampoo
Authorized dosage	0.5-5%	0.5-5%

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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