Elchemy

Sodium Lauryl Sulfate (SLS)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White or cream-colored powder; needles; granules; flakes
Physical Form	Powder
Odor	Faint odor of fatty substances
Molecular Weight (g/mol)	288.38
Density or Specific Gravity	greater than 1.1 at 68 °F
pH (if aqueous solution)	9.1 at 10 g/l
Chemical Properties	
Water Solubility	15g/100ml at 20 °C
Hazardous Reactions	When heated to decomposition it emits toxic fumes of /sulfur oxides and sodium oxides
pKa	1.84 ±0.10 (predicted)
Incompatibilities	Strong oxidizing agents
Thermal Properties	
Melting Point	399 to 405 °F
Decomposition Temperature	Decomposition Temperature
Thermal Stability	Stable at ambient temperature; decomposes on strong heating

2. Processing Methods

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Shampoo

Pre-dilute Sodium Lauryl Sulfate with deionized water before adding to the shampoo batch to prevent gel formation and viscosity issues. Add it slowly under moderate stirring, ideally after amphoteric surfactants like cocamidopropyl betaine.

Key Ingredients	Indicative Dosage (% w/w)
Sodium Lauryl Sulfate (28% active)	40%
Cocamidopropyl Betaine	10%
Glycerin	3%
Sodium Chloride	1%
Preservative (e.g., DMDM Hydantoin)	0.3%
Fragrance	0.2%
Purified Water	40-50%

Body Wash

Pre-dilute Sodium Lauryl Sulfate with deionized water before adding to the body wash to avoid viscosity spikes and clumping. Add it slowly under gentle stirring, ideally after milder surfactants to improve skin compatibility.

Key Ingredients	Indicative Dosage (% w/w)
Primary surfactants (SLS)	10-20%
Secondary surfactants (CAPB, CAO, CDEA etc.)	2-8%
Thickening agents	0.1-3%
Fragrances and Essential oils	0.1-1%

Liquid Soap

In liquid soap formulation, add Sodium Lauryl Sulfate (SLS) slowly to the water phase under gentle stirring to prevent excessive foaming and ensure complete dissolution.

Key Ingredients	Indicative Dosage (% w/w)
Sodium Laureth Sulfate (SLES 70%)	5%
Sodium Lauryl Sulfate (SLS 92%)	1.5%
Cocamidopropyl Betaine	5%
Cocamide DEA (CDEA)	1%
Glycerin	1%
EDTA-2Na	0.1%
Salt	2%
Deionized Water	80-90%

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Skin cleansers

In skin cleanser formulation, add Sodium Lauryl Sulfate (SLS) to the water phase slowly with constant gentle stirring to prevent lumping and excessive foaming.

Key Ingredients	Indicative Dosage (% w/w)
Water (Aqua)	60%
Glycerin	5%
Sodium Lauryl Sulfate (SLS)	10%
Cocamidopropyl Betaine	5%
Citric Acid	0.5%
Sodium Chloride	0.5%
Phenoxyethanol	0.8%
Ethylhexylglycerin	0.2%
Fragrance	0.5%

3. Dosing by Application

Products	Authorized dosage
Shampoos	3-30%
Body washes	3-30%
Toothpaste	1-3%
Facial cleansers	5-20%

4. Grade Comparison Summary

Parameter	Liquid Grade (28–30%)
Physical Form	Clear to slightly hazy liquid
SLS Content (%)	28–30% (aqueous solution)
Appearance	Clear to yellowish liquid
Solubility in Water	Fully soluble (already in solution)
Regulatory Compliance	INCI, TSCA
Common Uses	Liquid cleansers, surfactant blends

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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