



ELRASA – CSL™ (Caustic Soda)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White pellets/prills; granular or flaked form
Physical Form	Pellets
Odor	Odorless
Molecular Weight (g/mol)	40
Density or Specific Gravity	1.515 g/mL at 20 °C
Refractive Index	1.473-1.475
pH (if aqueous solution)	10.98(1 mM solution);11.95(10 mM solution);12.88(100 mM solution)
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Thermal Properties	
Melting Point	681 °C(lit.)
Boiling Point	1390°C
Flash Point	176-178°C
Thermal Stability	Stable under normal conditions; protect from moisture
Chemical Properties	
Incompatibilities	Acids, alkali metals, alkaline earth metals, halogens, organic materials
Hazardous Reactions	Reacts violently with water (exothermic), acids (exothermic), and some metals (releases hydrogen)
Solvent	
Water	41.8 g/100 ml (0 °C)
Ethanol	13.9 g/100 ml
Methanol	23.8 g/100 ml
Diethyl ether	Insoluble
Ammonia	Insoluble

2. Processing Methods



Laundry Detergent

Dissolve caustic soda prills in water to form a clear solution before adding to the detergent slurry. Handle with care and ensure proper cooling before mixing with other ingredients.

Key Ingredients	Indicative Dosage (% w/w)
Caustic soda	0.65-2.60%
LABSA	5-20%
Sodium silicate	6-12%
Sodium carbonate	8-12%
Optical brightner	0.2%
Water	50-70%
Enzyme, Perfume, CMC etc.	15%

Soap

In soap production, slowly add caustic soda prills to cold water with constant stirring to form the lye solution, allowing it to cool before mixing with oils. Add the cooled lye solution gradually to the oils during soap making, maintaining temperature control.

Key Ingredients	Indicative Dosage (% w/w)
Fats/Oils (e.g., coconut, palm, olive)	70-80%
Water	15-25%
Caustic Soda Prills (NaOH)	0.5-3%
Optional additives (fragrance, color, botanicals)	



Cleanser

Dissolve caustic soda prills slowly in cold water with constant stirring in a well-ventilated area, allowing the solution to cool before adding to the formulation. Always add caustic soda to water (never the reverse) to avoid exothermic splashing and ensure safe handling.

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%
Caustic Soda Prills (NaOH)	2%
Preservative (e.g., Phenoxyethanol)	1%
Fragrance, Citric Acid	

Hair shampoo

When using caustic soda prills in hair shampoo formulation, dissolve them carefully in cold deionized water with constant stirring, then allow the solution to cool completely. Add slowly with thorough mixing, monitoring pH to keep it between 5.5 and 7 for scalp safety.

Key Ingredients	Indicative Dosage (% w/w)
Deionized Water	54%
Sodium Lauryl Sulfate (SLS)	25%
Cocamidopropyl Betaine	10%
Glycerin	2%
Sodium Hydroxide	0.5%
Sodium Chloride	0.6%
Preservative (e.g., Phenoxyethanol)	0.05%
Fragrance, Citric Acid	

3. Products

Products	Authorized dosage
Laundry Detergent	1-5%
Soap	0.5-3%



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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