

FORMULATION

Premium Liquid Laundry Detergent

Overview

- Premium liquid laundry detergent with excellent soil and stain removal
- Effective in hard and cold water conditions
- Keeps whites white and colors bright
- Biodegradable, free from environmentally persistent ingredients such as polyacrylates, and free from phosphates

Composition

Ingredient	Trade Name	Function	% w/w
Water			QS to 100
Sodium Hydroxide (50%)		Neutralizing Agent	1.0-1.5
Linear Alkyl Benzene Sulfonic Acid	Bio-Soft S-101 (Stepan)	Biodegradable Anionic Surfactant	4-6
Sodium Coco Sulfate (90%)	Endinol SCS (Coast Southwest)	Plant-Based Biodegradable Anionic Surfactant	
Sodium Oleate		Biodegradable Anti-Foamer	1
Sodium Citrate		Biodegradable Chelant	3-5
Sodium Polyaspartate (40% active)	Soltellus 2101L (Lygos)	Biodegradable multi-functional polymer <ul style="list-style-type: none"> • Anti-redeposition agent for brighter colors and whiter whites • Anionic surfactant and enzyme booster 	2.0-3.0
Sodium Laureth Sulfate (60% active)	Steol CS-460 (Stepan)	Biodegradable Anionic Surfactant	12-14
Laureth-7 (100% active)	Genapol LA-070 SG Vita	Biodegradable Nonionic Surfactant	6-8
Glycerin		Biodegradable Co-Solvent	3-7
Ethanol		Biodegradable Co-Solvent	2-4
Propylene Glycol			
NaOH or Citric Acid		pH Adjuster	As Needed
NaCl		Viscosity Modifier	As Needed
Protease	Liquinase Eivity 3.5L (Novonesis)	Facilitates the Breakdown of Protein Stains	1
Amylase	Amplify Prime 100L (Novonesis)	Facilitates the Breakdown of Starch Stains	0.75
Mannanase	Mannaway 200L (Novonesis)	Facilitates the Breakdown of Sticky Gums	0.35
CaCl ₂ Dihydrate		Enzyme Stabilizer	0.05
Methylisothiazolinone/ Benzisothiazolinone	Acticide MBS (Thor)	Biodegradable Preservative	0.2
Fragrance/Dyes	Adjuvants	Product Aesthetics	

Directions

1. Mix Water and NaOH, then slowly add BIO-SOFT S-101 with uniform mixing
2. Add co-solvents, surfactants, chelants, anti-foamers and Soltellus 2101L while mixing
3. Add pH adjuster and viscosity modifiers to reach pH pH 7.5 to 8.5 and desired viscosity
4. If using heated process, let system cool to ambient temperature prior to adding enzymes, stabilizer, preservatives, and adjuvants

Potential Claims

- Keeps whites white and colors bright
- Excellent for cleaning in hard water
- Saves money and the environment with a cold water clean
- Safe for sensitive skin
- Free from harmful ingredients
- Free-from polyacrylates and phosphates
- Biodegradable
- Safe for septic tanks

Product Properties

Parameter	Value
Appearance	Colorless to lightly colored formulation
pH (as is)	7.5-8.5
Compatability	Limited compatability with cationic ingredients

