

FORMULATION

Value Liquid Laundry Detergent

Overview

- Value-driven 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	1.25
Linear Alkyl Benzene Sulfonic Acid	Bio-Soft S-101 (Stepan)	Biodegradable Anionic Surfactant	5
Sodium Oleate		Biodegradable Anti-Foamer	0.75
Sodium Citrate		Biodegradable Chelant	2.5
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 	1.5 - 2.5
Sodium Laureth Sulfate (60% active)	Steol CS-460 (Stepan)	Biodegradable Anionic Surfactant	2
Laureth-6 (100% active)	Eco Brij L6 (Croda)	Biodegradable Nonionic Surfactant	4
Glycerin		Biodegradable Co-Solvent	2.5
Sodium Hydroxide or Citric Acid		pH Adjuster	As needed
Sodium Chloride		Viscosity Modifier	As needed
Protease	Liquinase Evity 3.5 L (Novonesis)	Facilitates the Breakdown of Protein Stains	0.5
Amylase	Amplify Prime 100 L (Novonesis)	Facilitates the Breakdown of Starch Stains	0.25
CaCl ₂ Dihydrate		Enzyme Stabilizer	0.02
Methylisothiazolinone/ Benzisothiazolinone	Acticide MBS (Thor)	Biodegradable Preservative	0.15
Fragrance/Dyes	Adjuvants	Product Aesthetics	

Directions

1. Mix Water and NaOH, then slowly add BIO-SOFT S-101 with uniform mixing
2. Add surfactants, chelants, anti-foamers, co-solvents, and Soltellus 2101L while mixing
3. Add pH adjuster and viscosity modifiers to reach 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
- Save money and the environment using cold water
- 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

