

FORMULATION

Fabric Care Liquid Laundry Detergent

Overview

- Liquid laundry detergent that helps keep clothes looking newer longer
- Excellent soil and stain removal that keeps whites white and colors bright
- Effective in hard and cold water conditions
- 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	0.75-1.25
Linear Alkyl Benzene Sulfonic Acid	Bio-Soft S-101 (Stepan)	Biodegradable Anionic Surfactant	2-5
Sodium Oleate		Biodegradable Anti-Foamer	0.75-1.0
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 	1.0-2.5
Sodium Laureth Sulfate (60% active)	Steol CS-460 (Stepan)	Biodegradable Anionic Surfactant	6-18
Laureth-7 (100% active)	Genapol LA-070	Biodegradable Nonionic Surfactant	2-10
Lauryl/Myristyl Polyglucoside (50% active)	Glucopon 600 UP (BASF)	Biodegradable Nonionic Surfactant	0-4
Glycerin		Biodegradable Co-Solvent	2.5-8.0
Propylene Glycol		Biodegradable Co-Solvent	0-5
Ethanol		Biodegradable Co-Solvent	1.5-2.5
NaOH or Citric Acid		pH Adjuster	As Needed
NaCl		Viscosity Modifier	As Needed
Enzyme Package (Protease, Amylase, Mannanase, Lipase, Pectin-Lyase and Cellulase)	Medley Brilliant 400L (Novonesis)	Facilitates the Breakdown of Protein, Starch, Sticky Gums, Fats & Oils and Messy Fruit Stains, Reduces Fabric Pilling	2-4
CaCl2 Dihydrate		Enzyme Stabilizer	0.02-0.05
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 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 clothes looking newer longer
- 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

