

FORMULATION

Safe & Sustainable Liquid Laundry Detergent

Overview

- Safe and sustainable powder unit dose laundry detergent with excellent soil and stain removal
- Free-from dioxane, high bio-based content, biodegradable, free from environmentally persistent ingredients such as polyacrylates, and free-from phosphates
- Effective in hard and cold water conditions
- Keeps whites white and colors bright

Composition

Ingredient	Trade Name	Function	% w/w
Water			QS to 100
Sodium Coco Sulfate (90%)	Endinol SCS (Coast Southwest)	Plant-Based 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 	1.5-3.0
Decyl Polyglucoside (50%)	Milcoside 303 (LG Household)	Biodegradable Nonionic Surfactant	4-8
Lauryl Polyglucoside (50%)	Glucopol 600 UP (BASF)	Biodegradable Nonionic Surfactant	6-12
Glycerin		Biodegradable Co-Solvent	2-5
Ethanol		Biodegradable Co-Solvent	1-3
NaOH or Citric Acid		pH Adjuster	As Needed
NaCl		Viscosity Modifier As Needed	
Protease	Liquinase Evtly 3.5 L (Novonesis)	Facilitates the Breakdown of Protein Stains	0.5-1.0
Amylase	Amplify Prime 100 L (Novonesis)	Facilitates the Breakdown of Starch Stains	0.25-0.5
Mannanase	Mannaway 200L (Novonesis)	Facilitates the Breakdown of Sticky Gums	0.15-0.35
CaCl ₂ Dihydrate		Enzyme Stabilizer	0.02-0.04
Methylisothiazolinone / Benzisothiazolinone	Acticide MBS (Thor)	Biodegradable Preservative	0.15
Fragrance/Dyes	Adjuvants	Product Aesthetics	

Directions

1. Add water, co-solvents, surfactants, chelants, anti-foamers, and Soltellus 2101L while mixing
2. Add pH adjuster and viscosity modifiers to reach pH 7.5 to 8.5 and desired viscosity
3. If using heated process, let system cool to ambient temperature prior to adding enzymes, stabilizer, preservatives, and adjuvants

Potential Claims

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

Product Properties

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

