

FORMULATION

Safe & Sustainable Powder Unit Dose 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
Sodium Carbonate		Buffering Agent/Mineral Based Cleaner	20-30
Sodium Percarbonate		Peroxygen Safe Bleach	4-8
TAED		Bleach Activator	0-2
Zeolite		Mineral-Based Chelant/Water Softener	10-20
Disilicate	Britesil H20 (PQ Corp)	Metal Corrosion Inhibitor	2-4
Sodium Sulfate		Process Aid	QS to 100
Sodium Coco Sulfate (90%)	Endinol SCS (Coast Southwest)	Plant-Based Biodegradable Anionic Surfactant	4-6
Sodium Oleate		Biodegradable Anti-Foamer	0.5
Sodium Citrate		Biodegradable Chelant	2
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 	1.0-2.0
Laureth-7 (100% active)	Genapol LA-070	Biodegradable Nonionic Surfactant	2-4
Protease	Liquinase Evity 3.5L (Novonesis)	Facilitates the Breakdown of Protein Stains	0.5
Amylase	Amplify Prime 100L (Novonesis)	Facilitates the Breakdown of Starch Stains	0.25

Directions

1. Add sodium carbonate, zeolite and sulfate with uniform mixing (twin shell blender or ribbon mixer)
2. Spray the surfactants onto ingredients above while mixing until no clumps are present.
3. Slowly add any remaining chelants, anti-foamers and Soltellus 2101S with continuous mixing to ensure homogeneity
4. If the temperature of the powder remains below 95°F (35°C), add sodium percarbonate, silicate and bleach activator (when present) and mix until homogeneous with no clumps
5. If the powder exceeds 95°F (35°C) during or after blending in sodium percarbonate, stop blending and undertake standard safety procedures to cool and isolate the powder
6. Slowly blend in the enzymes 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 (1% Solution)	10.0-10.5
Compatability	Limited compatability with cationic ingredients