Suga® Boost 050

Naturally-Derived Performance Surfactant

Winner of 2021 EPA Green Chemistry Challenge Award

EPA United States Environmental Protection Agency

GREEN CHEMISTRY CHALLENGE

Powerful, Natural

Powerful performance,
Naturally-derived,
EO-free, 1,4-Dioxane-free with low irritation
EPA Direct Release Qualified

CLEANGREDIENTS®

Patent Pending

Powerful, Natural Performance.

Suga®Boost 050 is a 100% naturally-derived performance surfactant that is qualified for EPA Direct Release, suitable for laundry, dish soap and naturally-based exterior cleaner formulations. Cleaning performance is higher than traditional surfactants such as DDBSA, SLES, and NP-9 in removing food soils, animal grease, and protein soil and meets demands for high-performance green cleaning formulations.

Suga®Boost 050 has mild characteristics in comparison to regulated surfactants such as sulfates, alcohol alkoxylates, Coco DEA, and betaines, with higher irritation and Prop 65 concerns.

Benefits

- Greatly enhanced performance over traditional surfactants in many HI&I applications
- Based on patent-pending technologies in synergy of naturally-derived components
- Variety of chemistries that meet different formulation and performance demands
- Compatible with majority of surfactants
- Mild to eyes, very mild characteristics for skin contact
- EO/PO Free, No VOCs
- Free of Prop 65 components (1,4-Dioxane, DEA, DCA)
- Broad regulatory approvals, globally registered in major markets
- Meets criteria for EU Detergents Regulation (EC) 648/2004.

Applications

Suga®Boost 050 may be used in the development of multiple household and industrial applications to meet demands for high-performance green formulations such as:

- Laundry (home and commercial)
- Exterior washes (siding, roofs, decks)
- Transportation cleaning (boats, trains, airplanes)
- Hand dish soap
- Agriculture and horticulture
- Emulsion polymerization

DESCRIPTION Functionalized Alkyl Polyglucoside

LISTINGS US (TSCA), EU (REACH), Canada (NDSL), Australia (AICS)

SPECIFICATIONS

Appearance (@ 25°C)	Clear Liquid
pH (10% aqueous)	6.0 – 8.0
Color Gardner '98	4 Max.
% Solids	48.0 – 51.0

WETTING AND FOAM PERFORMANCE

Draves Wetting, *1% Active, secs*	6.0
Ross-Miles Foam, *1% Active*	
Immediate	150
1 Minute	135
5 Minutes	120
Surface Tension	
1.00%	31.50
0.10%	31.03
CMC, %	0.007

Environment

BIODEGRADATION

Suga®Boost 050 is readily biodegradable per OECD 301 methods. This product meets the criteria for a surfactant under the **EU Detergents Regulation (EC) 648/2004**.

USDA Biopreferred Rating of **100**

EPA DIRECT RELEASE

The Safer Choice Program of the U.S. Environmental Protection Agency certified **Suga®Boost 050** as Acceptable for use in Safer Choice-certified products and for listing with CleanGredients® as a surfactant.

CLEANGREDIENTS

Suga®Boost 050 also meets criteria for Direct Release and the use limit for this ingredient no longer applies.

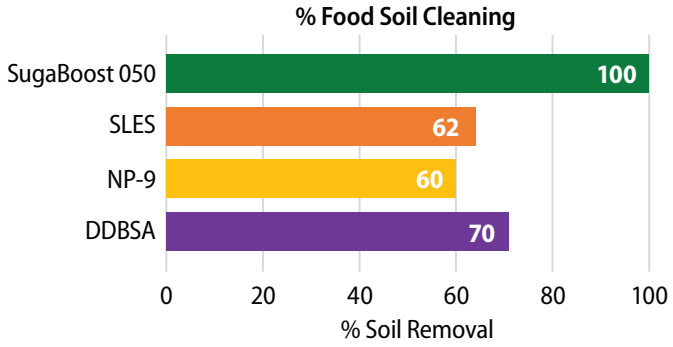
- Direct release products are intended for use in applications that do not go into a sewer or septic system, so they need to have a shorter biodegradation time. Products include home car washes, cleaners for use in power washers, boat cleaners, drilling muds, graffiti removers, fleet disinfectants, window cleaners, and the like.

Performance

The following data demonstrates superior cleaning performance of Suga®Boost 050 on tenacious soils against well-known industry benchmarks.

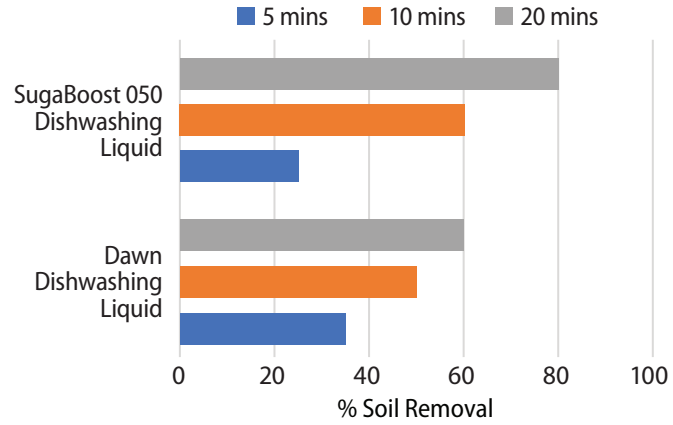
Food Soil Cleaning

Greasy Soil:	Lard, egg powder, corn oil, red dye
Testing method:	Immersion cleaning
Test temperature:	Room temperature
Test formulation:	Water (q.s.) Phosphoric Acid (0.006%) IPA (0.03%), EDTA, 40% (0.07%), Active surfactant (0.0625%)

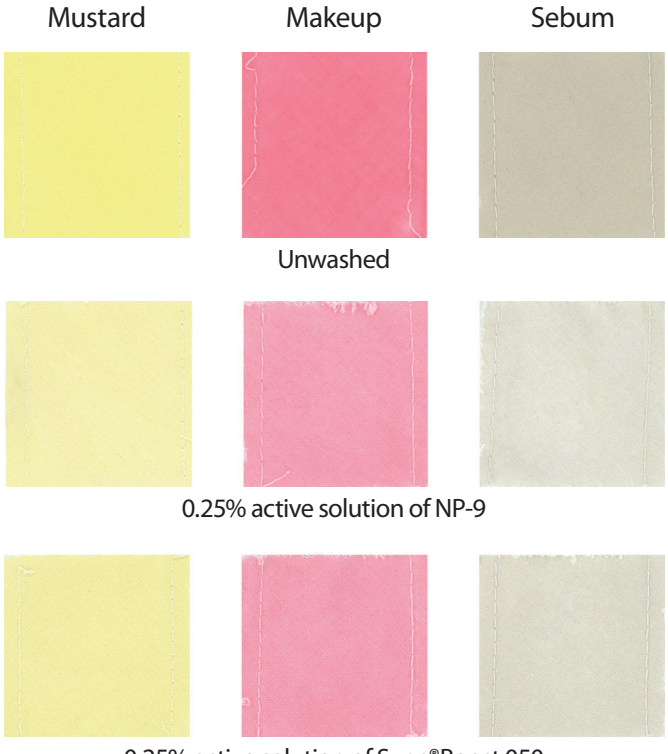


Comparison in Dish Cleaning with Dawn® Dish Soap

Greasy Soil:	Lard, egg powder, vegetable oil, dye
Testing method:	Immersion cleaning
Test formulation:	0.0375% isopropanol, 0.0075% phosphoric acid, 0.09% EDTA, 0.27% active SugaBoost 030
Reference:	Dawn® Dishwashing Liquid at 1.5% by solid

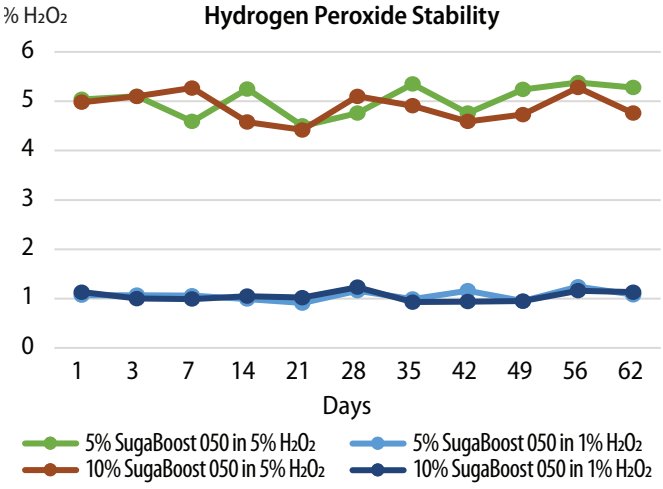


Laundry tests using Suga®Boost 050 demonstrated comparable results in comparison to nonylphenol ethoxylate. Pre-soiled fabrics used in test below.



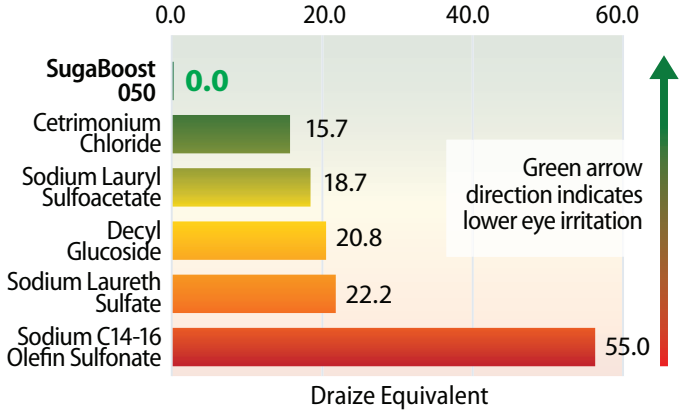
Hydrogen Peroxide Stability

Suga®Boost 050 is tested stable in hydrogen peroxide solutions, enabling formulators to develop greener cleaning products with extra biting power from peroxide in many applications, ranging from disinfecting to cleaning tough-to-clean stains on carpet, fabric, and hard surfaces.



IRRITATION STUDIES

The following data correlates to the OECD TG 405 Acute Eye Irritation/Corrosion (Draize) results of products that represent a variety of irritants. Tests are globally approved, completely cruelty-free and mathematically correlated to the Draize equivalent score.



0.0 – 0.5 / *Non-irritating*
0.6 – 2.5 / *Practically non-irritating*
2.6 – 15.0 / *Minimally irritating*
15.1 – 25.0 / *Mildly irritating*
25.1 – 50.0 / *Moderately irritating*
50.1 – 80.0 / *Severely irritating*
80.1 – 100.0 / *Extremely irritating*
100.1 – 110 *Maximally irritating*

OTHER TOXICITY

Eye Irritation: **MatTek Epi-Ocular™:** *In vitroepidermal keratinocytes:* Results indicate '**non-irritating**' classification.

Acute Skin Irritation: 48 Hour Occlusive skin patch test: On human volunteers - 53 Test Subjects: no visible skin reaction, no potential for dermal irritation.

Winner of 2021 EPA Green Chemistry Challenge Award

Colonial Chemical, Inc. is a winner in the 2021 EPA Green Chemistry Challenge Awards Program, in the focus area of The Design of Greener Chemicals. Colonial Chemical is recognized for developing Suga®Boost surfactant blends that use more environmentally friendly chemicals than traditional cleaning surfactants. Suga®Boost surfactants consume less energy to create, are biodegradable, and are derived from plant-based materials, with performance that demonstrates potential to replace EO-containing surfactants such as SLES and APEs. For more information, go to **www.epa.gov/greenchemistry.**

Green Vehicle Cleaner *(For boats, trains, and aircraft)*

	INGREDIENT / INCI	%
1	Water	qs to 100.00
2	Sodium Citrate	5-10
3	Trilon® M	3-5
4	***Suga®Boost 050***	30-40
5	***Cola®Dry DAB***	2-3
6	Preservative	q.s.

PROCEDURE:
Add components in the order listed. Mix well before next component is added.

USAGE:
Dilution at 30-100:1 at use

Ultra Mild Laundry Detergent Concentrate

	INGREDIENT / INCI	%
1	Soft Water	20-40
2	***Suga®Boost 050***	60-80
3	Citric Acid	q.s.

PROCEDURE:
Add components in the order listed. Mix well before next component is added.

USAGE:
Usage Small to Medium Load ¾ oz., Large Load or Heavy Soiled 1 oz.

STORAGE AND HANDLING

Suga®Boost 050 should be stored in closed containers. Shelf life is 24 months from date of manufacture. Suga®Boost 050 is shipped in 55-gallon drums, net weight 450 lbs (204.1 kg). Complete Safety Data Sheet may be downloaded at ***www.colonialchem.com***.

Colonial Chemical
Innovative Specialty Surfactants
www.colonialchem.com