

Stepan 
Personal Care



Strengthen Your Brand's Sustainability Story:

*High-Active Ingredients
for Formulating
Sustainable Products*

Presented by

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Stepan Company

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Agenda

Stepan's Sustainability Commitments

Sustainability in the Personal Care Market

Formulation Inspiration

Package-Free, Water-Free
Unit Dose & Concentrated

Delivering Sustainable Value

People, Planet, Practices, Products

Stepan Ranks 45th Among the Wall Street Journal's Most Sustainable Managed Companies in the World



Investing in People



Efficiency for the Planet



Responsible Practices



Advantageous Products



RSPO- 1106255

Stepan Sustainability Targets

Water Conservation and Sustainable Ingredients



Goal 2023

Water Conservation

100%

Conduct risk assessments/establish water management plans at all sites

Goal 2025

Water Conservation

Reduce global water usage by

40%



Goal 2023

Sustainably Advantaged Products

80%

of our R&D investment toward sustainable process and products

Supporting Sustainability Efforts

Stepan's Naturally Derived, High-Active Ingredients for Eco-Friendly Formulations

Mild Cleansers

Conditioners and Emollients

100%

ISO 16128

Natural Origin Content

STEPANOL® DCFAS

Sodium Coco-Sulfate

STEPANOL ME-DRY

Sodium Lauryl Sulfate

STEPAN-MILD® GCC

Glyceryl Caprylate/Caprate

STEPAN-MILD L3

Lauryl Lactyl Lactate

NEOBEE® M-5 COSMETIC

Caprylic/Capric Triglyceride

WECOBEE® M, S

Hydrogenated Vegetable Oil

>85%

ISO 16128

Natural Origin Content

ALPHA-STEP® PC-48

Sodium Methyl 2-Sulfolaurate and Disodium 2-Sulfolaurate

LATHANOL® LAL

Sodium Lauryl Sulfoacetate

NINOL® CAA

Dimethyl Lauramide/Myristamide

STEPANQUAT® DC1

Quaternary Blend

STEPANQUAT Helia

Disunfloweroylethyl Dimonium Chloride and Sunflower Seed Oil Glycerides and Lauryl Lactyl Lactate



Sustainability in the Personal Care Market

Sustainability at the Consumer Level

Sustainability and Environmental Awareness are Top of Mind

65% of consumers look for products that can help them live a more sustainable and socially responsible lifestyle

Source: Barkley Research via Forbes, Nov 2020

60% of consumers buy products from companies that are socially and/or environmentally responsible

Source: Barkley Research via Forbes, Nov 2020



Sustainability at the Brand Level

Efforts Support Trend of Conscious Consumerism



Source: Euromonitor International's Voice of the Industry Sustainability Survey, June 2020



73%

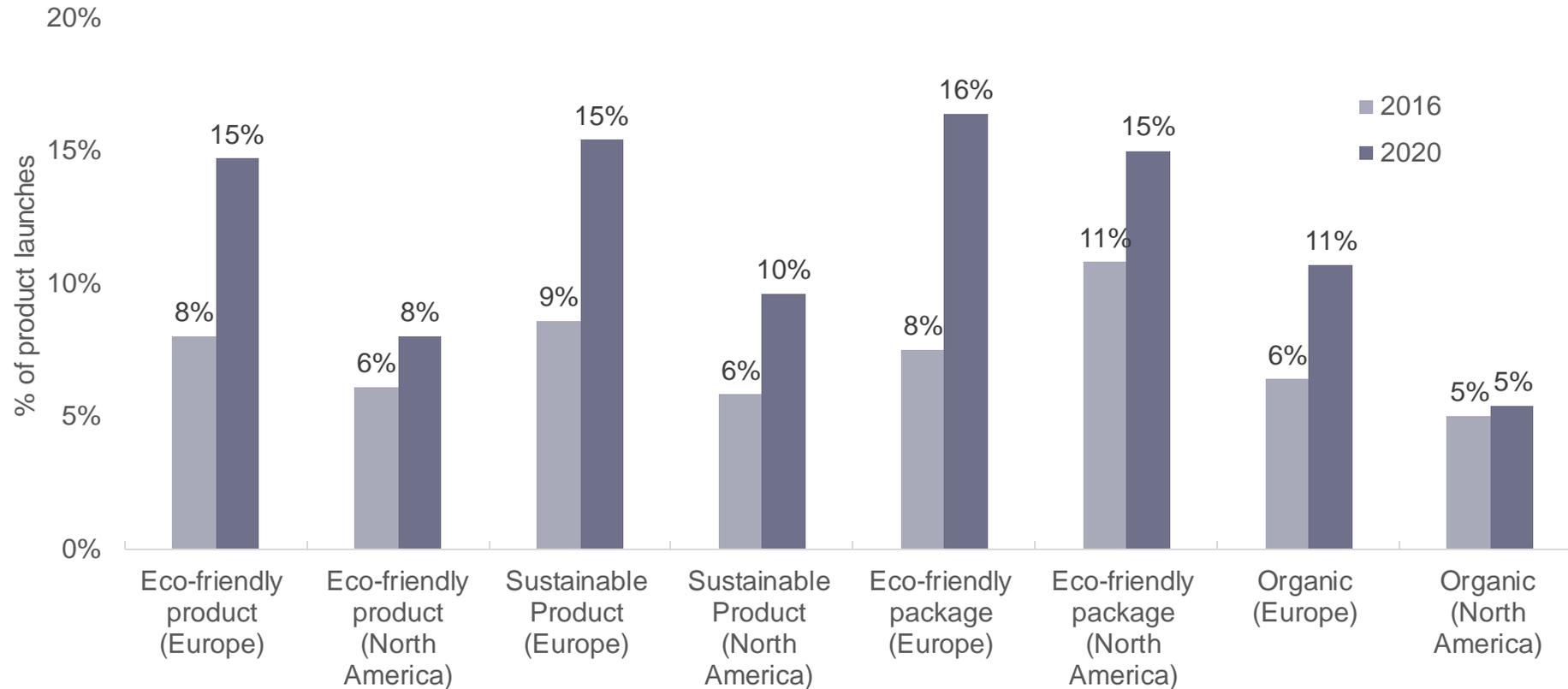
of brand senior decision-makers see sustainability as an opportunity for their brand

Source: API Group 2018

Sustainability at the Brand Level

Efforts Support Trend of Conscious Consumerism

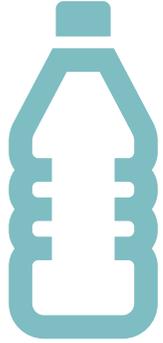
Europe and North America:
BPC Launches by Select Eco Claims 2016 vs 2020



Consumer scrutiny for sustainable products means brands are including more eco claims on label

Sustainability at the Industry Level

Eliminating Plastic Waste is a High Priority



Today, over **300 Million Tonnes** of plastic waste is produced every year, **50%** of which is single-use. The beauty industry creates **120 Billion Units** of packaging every year.

Source: United Nations Environment Program, National Resources Defense Council, Inc., and Commercialwaste

Creative, Sustainable Products as the “New Normal”?



Package-Free Inspiration

Improve your eco footprint!
These solid bar formulations:

- 🌿 Use no water to make (water-savings up to 95%!)
- 🌿 Require no plastic packaging
- 🌿 Last for many uses
- 🌿 94-100% Natural Origin Content (ISO 16128)*

Natural
Shampoo
Bar

Smoothing
Conditioner
Bar

Solid
Moisturizing
Lotion

Natural Shampoo Bar

Formulation No. 1333

100%

ISO 16128

Natural Origin Content

	Ingredient	Wt. %	Function
A	Jojoba Oil	5.0	Natural Oil
	Sunflower Seed Oil	5.0	Natural Oil
	Rosehip Seed Oil	0.5	Natural Oil
	STEPAN-MILDGCC <i>Glyceryl Caprylate/Caprates</i>	5.0	Natural Emollient
	STEPAN-MILD L3 <i>Lauryl Lactyl Lactate</i>	5.0	Natural Silicone Alternative
	Fragrance and Dye	q.s.	Aesthetics
	B	STEPANOL DCFAS-N <i>Sodium Coco-Sulfate</i>	50.0
Agar Agar		15.0	Thickener
Glycerin		14.0	Humectant

A high-foaming,
silicone-free
shampoo and body
cleansing bar



Make it Sulfate Free!

Use LATHANOL LAL in place of STEPANOL DCFAS-N
(ISO 16128: 0.93)

Natural Shampoo Bar

Formulation No. 1333



Softening Conditioner Bar

Formulation No. 1332

94%

ISO 16128

Natural Origin Content

	Ingredient	Wt. %	Function
A	STEPAN-MILDGCC <i>Glyceryl Caprylate/Caprates</i>	5.0	Natural Emollient
	WECOBEE M <i>Hydrogenated Vegetable Oil</i>	5.0	Natural Emollient
	Shea Butter	20.0	Natural Moisturizer
	Cetearyl Alcohol (and) Ceteareth-20	3.0	Emulsifier
	Stearyl Alcohol	42.8	Carrier
	STEPANQUAT Helia <i>Disunfloweroylethyl Dimonium Chloride (and) Sunflower Seed Oil Glycerides (and) Lauryl Lactyl Lactate</i>	14.0	Naturally Derived Conditioning Agent
	STEPAN-MILD L3 <i>Lauryl Lactyl Lactate</i>	1.0	Natural Silicone Alternative
	Jojoba Oil	9.0	Natural Oil
B	Lactic Acid, Fragrance, Dye	q.s.	Aesthetics

Easily modify to include other natural oils and butters for a unique story



Powered by STEPANQUAT Helia

Smooths hair and tames frizz

Treated with
**STEPANQUAT
Helia**
2% Active



Untreated
Shampoo Only

Solid Moisturizing Lotion

Formulation No. 1376

97%
ISO 16128
Natural Origin Content

	Ingredient	Wt. %	Function
A	NEOBEE M-5 COSMETIC/MB <i>Caprylic/Capric Triglyceride</i>	8.0	Natural Emollient
	STEPANQUAT Helia <i>Disunfloweroylethyl Dimonium Chloride (and) Sunflower Seed Oil Glycerides (and) Lauryl Lactyl Lactate</i>	17.0	Naturally Derived Skin Conditioner
	WECOBEE S <i>Hydrogenated Vegetable Oil</i>	8.0	Natural Emollient
	WECOBEE M <i>Hydrogenated Vegetable Oil</i>	38.0	Natural Emollient
	Shea Butter	22.7	Natural Moisturizer
	Candelilla Wax	0.8	Natural Structurant
B	Silica	4.5	Mattifying Agent
	Fragrance, Dye	q.s.	Aesthetics

WECOBEE M:
an economical
alternative to cocoa
butter (similar
melting point!)



Solid Moisturizing Lotion

Formulation No. 1376



Concepts for Unit-Dose Tablets or Concentrated Liquids

Prepared-at-home products offer unique sustainability benefits:

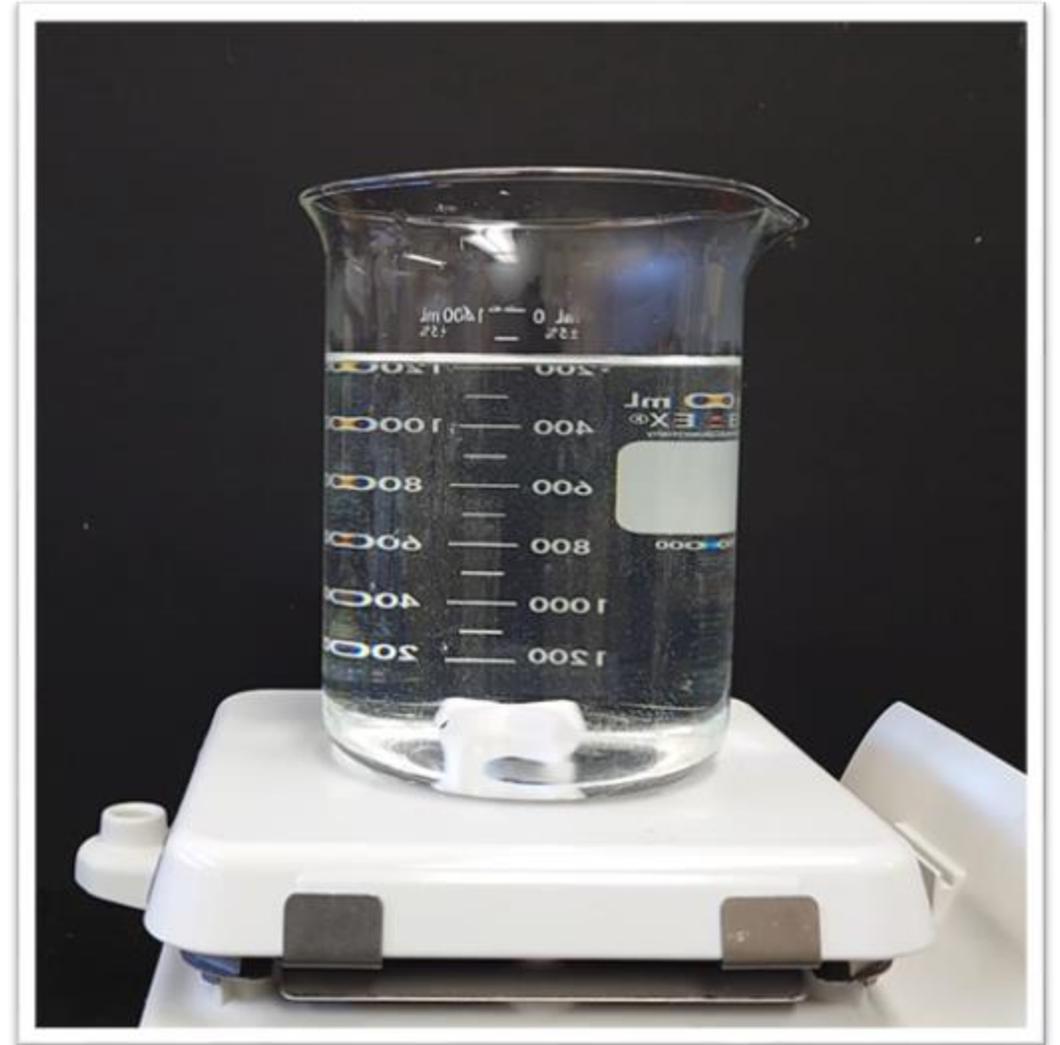
- 🌿 Less water to ship
- 🌿 Can use paper packaging (powders)
- 🌿 Consumers feel involved
- 🌿 Offers ability for customization

Cleansing
Powder

Dilutable
Concentrates

Cleansing Powder

Formulation Concept



Cleansing Powder Concept

Ingredient Toolbox

1

Foaming Cleansers

Solid or high active formats work best

2

Bulking Agents

Sodium (bi)carbonate and citric acid – also adjust pH

3

Preservatives

Solid organic acids (sodium benzoate, potassium sorbate, sodium salicylate); glycols also possible

4

Enhancers

“Sinkage” and dissolution aids; emollients/humectants; fragrance

Cleansing Powder Concept

Formulation Considerations

Loose Powder or
Compressed
Tablet?



- ✓ Solids Handling
- ✓ Tableting Equipment

Flow (Powder) and
Dissolution

Consider Customer Input



Flow Aids/Anti-Caking Agents
Glycols (PG, 1,3-Propanediol)
Solubilizers (PEG-based)

Final pH



Ratio of Citric Acid to
Sodium (Bi)Carbonate



Appropriate for
Preservative Package

Cleansing Powder

Stepan Offers High-Foaming, Solid Anionic Cleansers for Powdered Concepts



STEPANOL DCFAS-N

STEPANOL ME-DRY

LATHANOL LAL

INCI Name	Sodium Coco-Sulfate	Sodium Lauryl Sulfate	Sodium Lauryl Sulfoacetate
Product Form	Needles	Powder	Coarse, Powder or Flake
NOI*	1.0	1.0	0.86

Foam Profile



Small bubbles,
dense foam



Larger bubbles,
loose foam

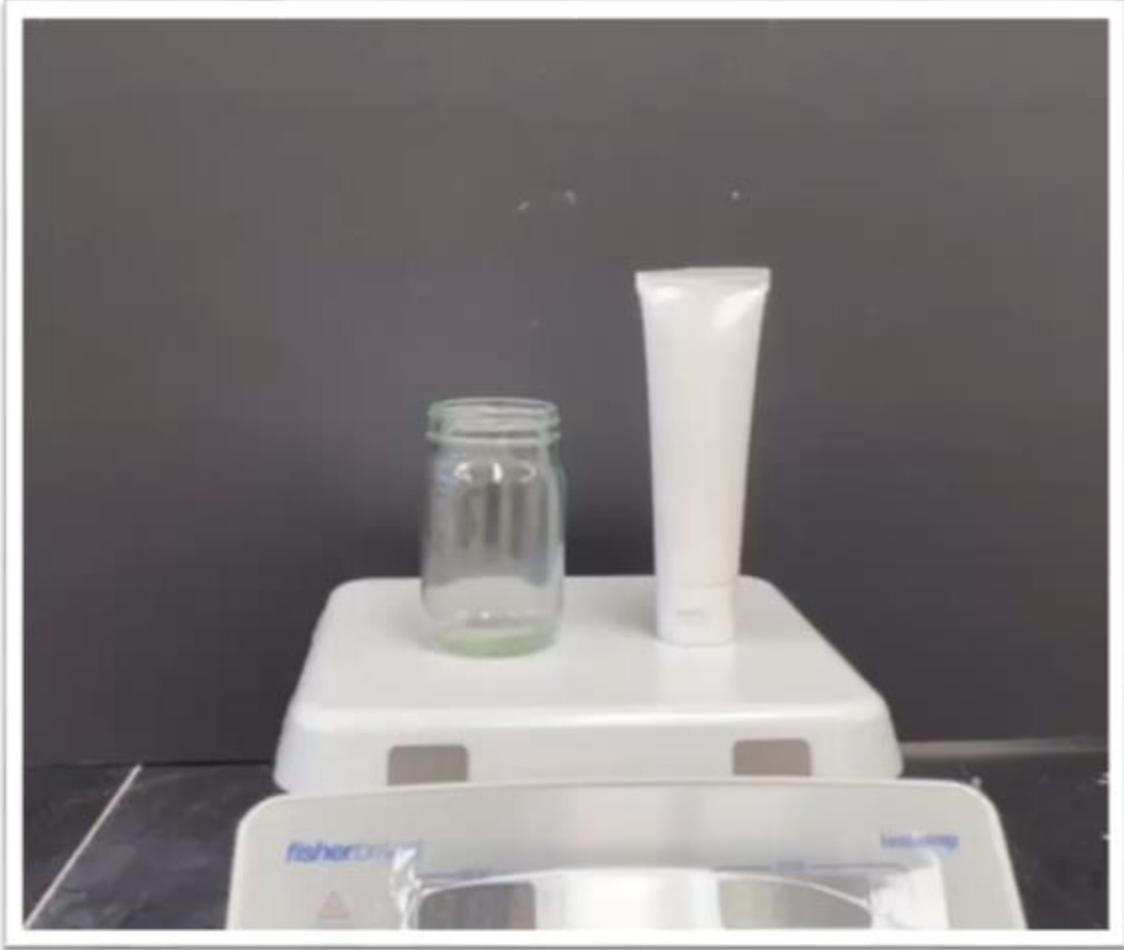


Small bubbles,
creamy foam

*NOI = Natural Origin Index (ISO 16128). Stepan calculates NOI based on biorenewable carbon content and excludes balance water and impurities/by-products.

Dilutable Concentrates

Easy-to-Personalize Washes, Shampoos, and Hair Conditioners



Dilutable Concentrates

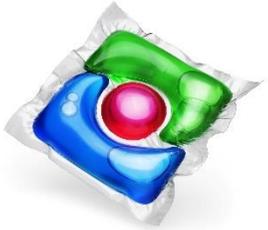
Ingredient Toolbox

	Washes & Shampoos	Conditioners	
1	Cleansers	Higher-active, foaming surfactants that dilute easily	Cationic conditioners to soften hair
2	Bulking Agents	Water, glycols, nonionic solubilizers, salts/viscosity adjusters	Long-chain alcohols, salts/viscosity adjusters
3	Preservatives	Must be at proper use level once diluted	Must be stable at low pH and dilute to use level
4	Enhancers	Humectants, emollients, extracts	Silicones, proteins, extracts

Dilutable Concentrates

Formulation Considerations

Packaging



PVA Film (Pods)

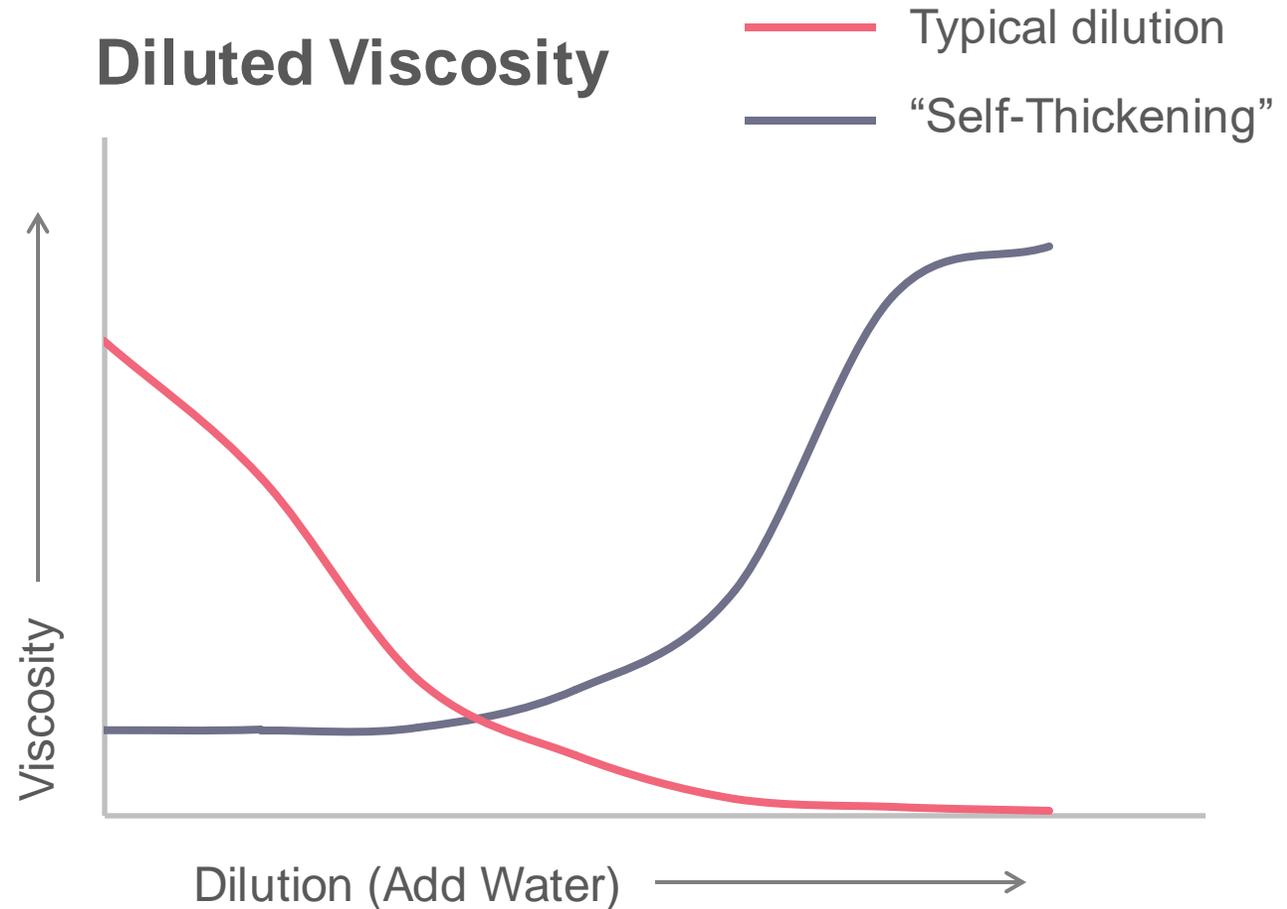
- Water constrained (<10%)
- Glycols, glycerin added (<15%)



Pouches/Tubes

- Flexible water content
- Metal (aluminum) tubes face pH and electrolyte constraints
- “Squeezable” viscosity

Diluted Viscosity



Dilutable Concentrates

Stepan Performance Concentrates Allow for Easy Formulating

- 1** Choose the Best Performance Concentrate for Your Application
- 2** Enhance with Moisturizers, Extracts, Proteins, Vitamins
- 3** Add Your Preferred Fragrance, Dye and Final Preservative Package



Dilutable Concentrates

Stepan Performance Concentrates Allow for Easy Formulating

STEPANBLEND® FF40

ALPHA-STEP HWC

STEPANQUAT DC1

Ingredients

Sodium C14-16 Olefin Sulfonate
Cocamide MIPA
Cocamidopropyl Betaine

Sodium Methyl 2-Sulfolaurate
Disodium 2-Sulfolaurate
Cocamidopropyl Betaine
Lauramide MEA
Cetrimonium Chloride
PEG-150 Distearate

Stearyl Alcohol
Cetyl Alcohol
Ethylhexyl Isononanoate
Quaternium 82
Stearamidopropyl Dimethylamine

Suitable for

Shampoo, body and facial
washes, hand soaps,
feminine hygiene

Shampoo, body and facial
washes, hand soaps

Hair conditioners,
hair masks

Recommended Dilution

2 – 3 oz concentrate
in a 12 oz bottle

2 – 3 oz concentrate
in a 12 oz bottle

4 oz concentrate
in a 12 oz bottle

Viscosity of Concentrate

4,000 cps

7,000 cps

17,000 cps

pH of Concentrate

11.5

5.5

4.5



Strengthen Your Sustainability Story



Product concepts will continue evolving to meet consumers' sense of environmental obligation



Solid product concepts and prepare-at-home solutions offer unique benefits to cut down on single-use plastic packaging



Stepan offers sustainable ingredients to maintain key performance attributes in new product formats

Take Advantage of Stepan's Virtual Lab

Stepan's **Virtual Collaboration Lab** is available to you for live demonstrations or formulation troubleshooting!

- Reach out to your local sales representative
- [Submit an inquiry](#) via [stepan.com](#)
- Contact NA Technical Service via techserv@stepan.com or 1-800-745-7837



Stepan
Personal Care



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- **Request Samples**
- **Access Formulations**

Thank you!

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