

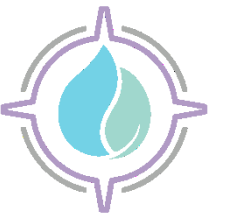


Formulating for Health and Sustainability

with Carbopol® Aqua SF-1 and
SF-1 OS polymers

July 2020

www.carbopol.com



Balancing Performance with Sustainability

Consumers' need for performance (efficacy, convenience, etc.) balanced with safety (for both the self and the environment) is fueling the clean beauty movement.

SAFETY



COVID-19 has heightened consumers' awareness of the importance of safety, which is often equated to clean and sustainable products.¹

VIRTUAL = VISUAL



As retail e-commerce sales grow at an exponential rate,² the visual appeal of products, often enabled by suspending aids, is becoming increasingly important as a differentiator.

POSITIONING



Vegan, sulfate-free, and on-the-go are some of the fastest growing claims for new beauty launches.¹



Carbopol® Aqua SF-1 and SF-1 OS polymers

Alkali-swelling rheology modifiers that suspend, stabilize, thicken and enhance the appearance of skin care, hair care and skin cleansing products.



INCI

Acrylates
Copolymer

CFDA compliant



SUSTAINABILITY BENEFITS

Uses 10 of 12 green
chemistry principles

Readily dispersible liquid
reduces energy use
during manufacture

Halal-certified*, vegan, GMO-free,
paraben-free, gluten-free,
no added preservative



RECOMMENDED USE LEVEL

5 – 10%
as supplied
(30% TS)



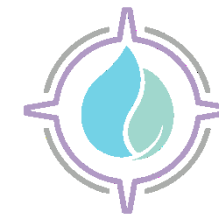
PROCESSING TEMPERATURE

Cold processable

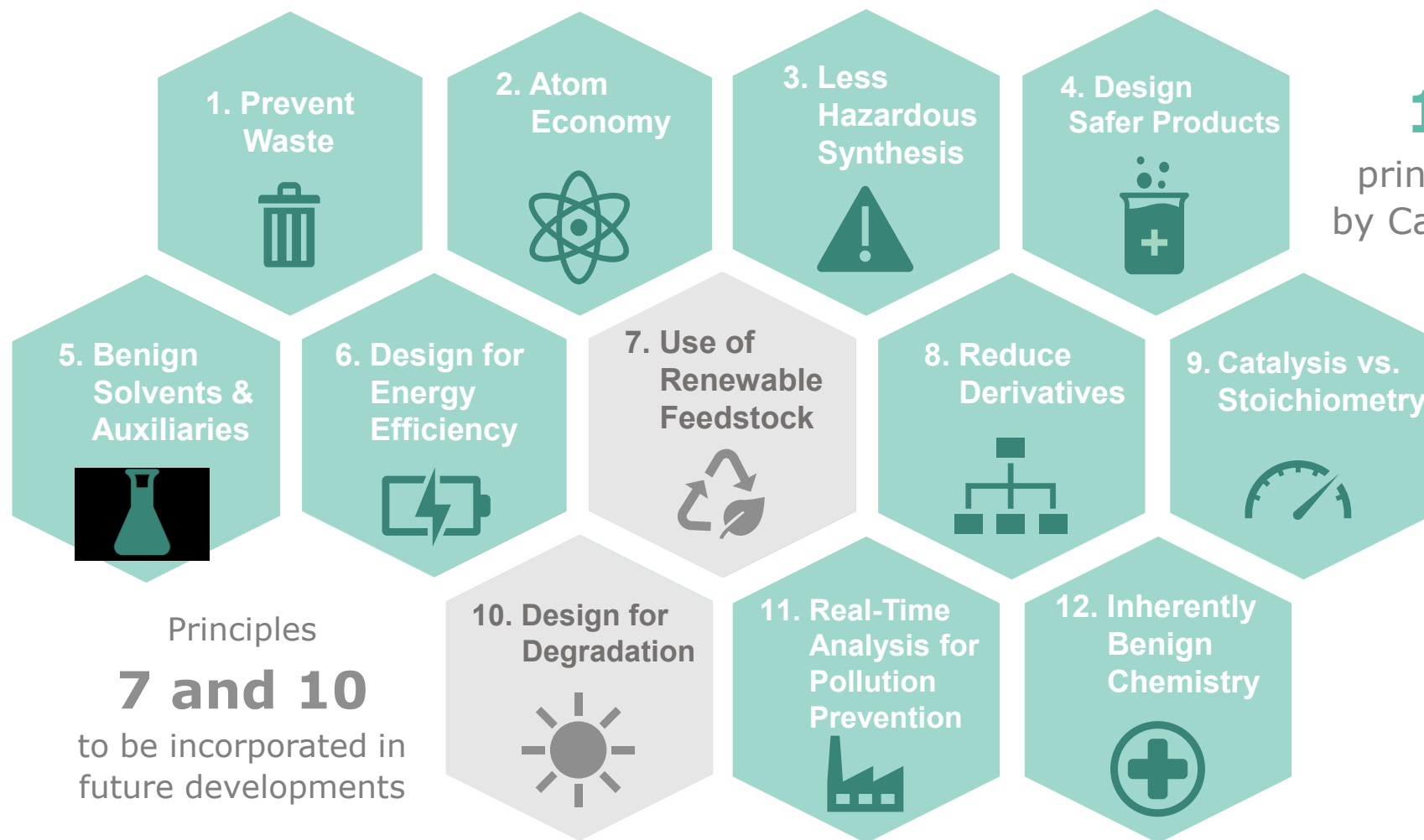


SHELF LIFE

12 months

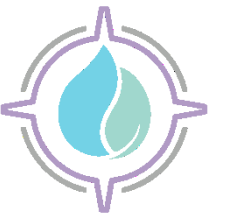


The 12 Principles of Green Chemistry



10 of 12
principles addressed
by Carbopol® polymers

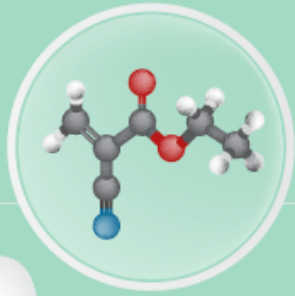
Principles
7 and 10
to be incorporated in
future developments



What About Microplastics?



Lubrizon's acrylic-based polymers are a collection of **bound molecules** which form a gel.



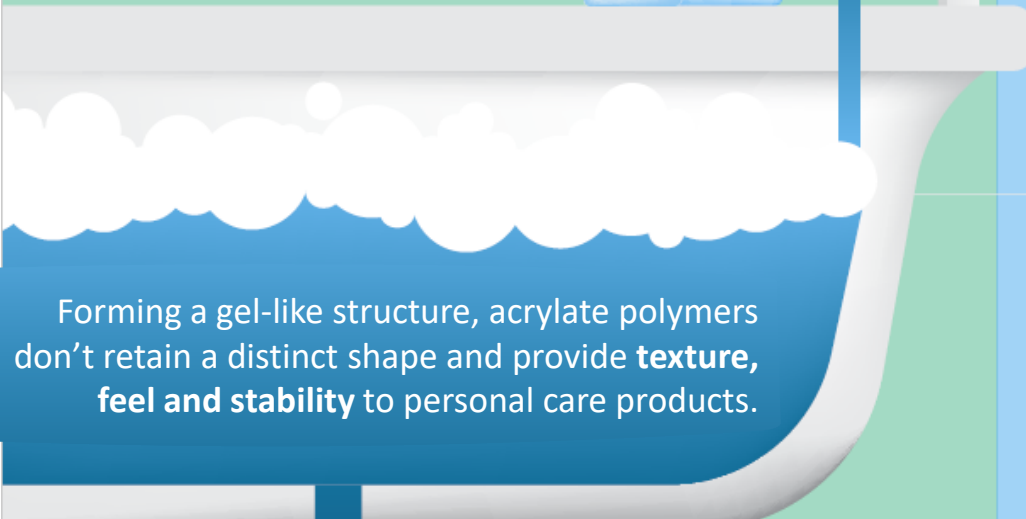
They have **no distinct size or shape** ...



... and **consist of 90% water** when used as thickeners in products such as shampoos or body washes, etc.



Forming a gel-like structure, acrylate polymers don't retain a distinct shape and provide **texture, feel and stability** to personal care products.



Microplastics and microbeads are **solid plastic particles** ...



... typically **up to 5 mm** in diameter.



They **retain a solid structure** when used in exfoliating scrubs and cleansers ...



... and retain their solid shape **even when rinsed down the drain.**



What Happens Next?

Lubrizol acrylate polymers are effectively captured by wastewater treatment plants **resulting in very low levels in the effluent.**



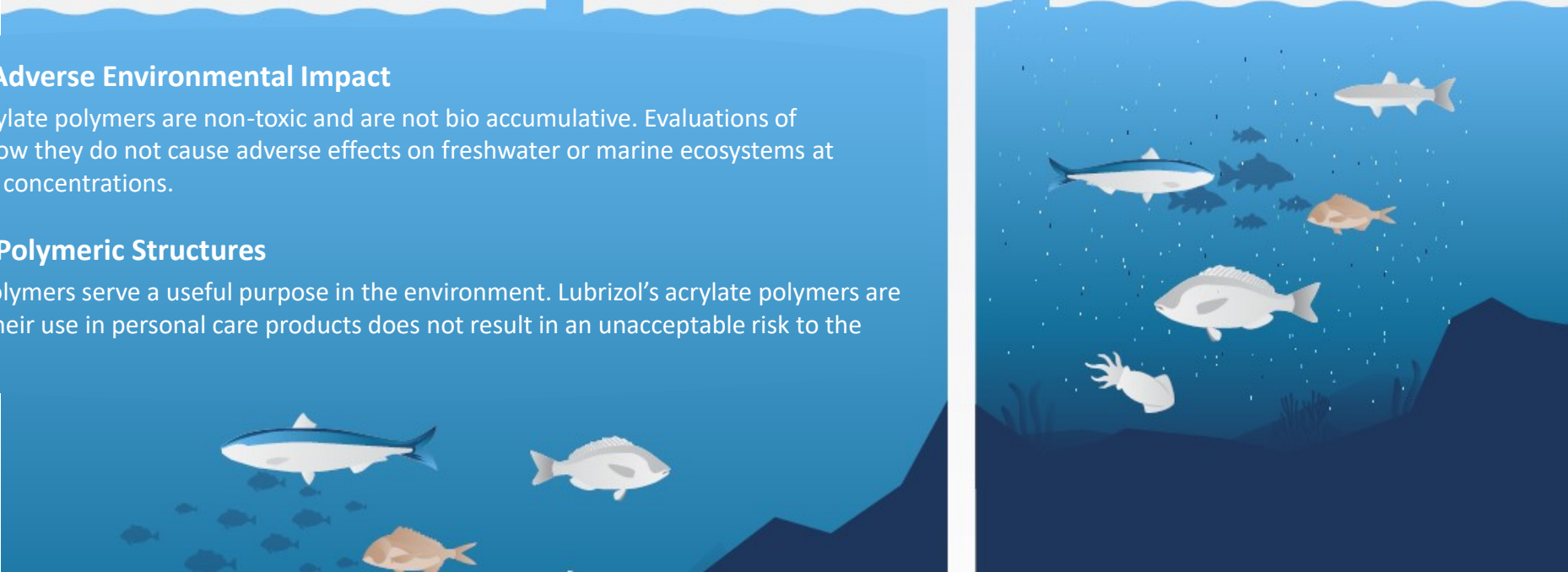
If not caught by wastewater treatment plants, they could be **ingested by marine life.**

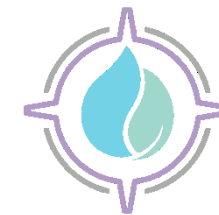
Studies Prove No Adverse Environmental Impact

Studies show that acrylate polymers are non-toxic and are not bio accumulative. Evaluations of environmental risk show they do not cause adverse effects on freshwater or marine ecosystems at typical environmental concentrations.

Naturally Existing Polymeric Structures

Naturally occurring polymers serve a useful purpose in the environment. Lubrizol's acrylate polymers are similar to these and their use in personal care products does not result in an unacceptable risk to the environment.

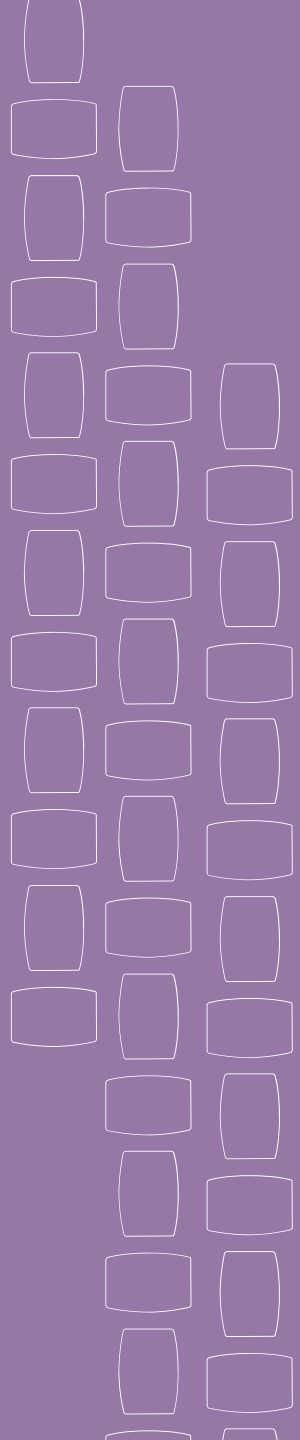




The New Self-Care Routine

With the global coronavirus death toll rising every day, consumer concerns around safety, health and hygiene have prompted new attitudes, behaviors and habits around self-care.



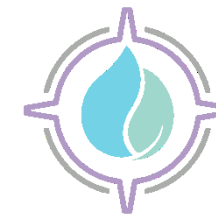


CLEANSE + CARE

Almond Yogurt Hand Cleanser & Conditioner

Nourish and soothe hands all in one step with this unique, 2-in-1 cleanser-conditioner containing the superfoods goodness of sweet almond oil with a soothing yogurt texture.





Almond Yogurt Hand Cleanser & Conditioner

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	71.72	
	2. Tetrasodium EDTA	0.10	
	3. Acrylates Copolymer (29.6% TS)	7.60	Carbopol® Aqua SF-1 polymer
	4. Sodium Laureth Sulfate (68.1% active)	7.35	Sulfochem™ ES-70DXS surfactant
B.	5. Sodium Hydroxide (18%)	1.38	
	6. Cocamidopropyl Betaine (30% active)	4.00	Chembetaine™ CAD surfactant
	7. Methyl Gluceth-10	2.00	Glucam™ E-10 humectant
C.	8. Prunus Amygdalus Dulcis (Sweet Almond) Oil	2.50	
	9. BHT	0.05	
D.	10. Acrylates/Beheneth-25 Methacrylate Copolymer (30.5% TS)	1.64	Novethix™ L-10 polymer
	11. Phenoxyethanol	0.80	
	12. Fragrance	0.60	
	13. Sodium Hydroxide (18%)	0.26	

- Work in synergy to stabilize the natural almond oil
- Thicken the formula

- Excellent foam performance
- Mild cleansing

- Unique slippery rinse-off sensory
- Retains moisture on the skin for a pleasant afterfeel

Product Properties

Appearance Opaque, white cream
 pH 6.5 – 7.0
 Viscosity* (mPa·s) 7,000 – 11,000

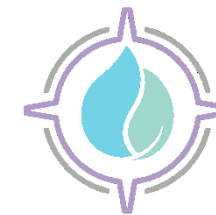
*Brookfield® RVDVII Viscometer, spindle #5 at 20 rpm, 25°C after 24 hours

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Clear Hand Sanitizer

Sanitize hands on-the-go with this crystal clear hand sanitizer thickened with a liquid rheology modifier. With alcohol content ranging from 60-80%, you can rest assured it will dissolve the bad bugs away.





Clear Hand Sanitizer

INCI Name	Wt% (A)	Wt% (B)	Trade Name
A. 1. Deionized Water	34.50	24.68	
2. Acrylates Copolymer	5.00	5.00	Carbopol® Aqua SF-1 polymer
3. Aminomethyl Propanol	0.50	0.32	
4. Alcohol Denat, Ethanol	60.00	70.00	

- Stabilizes the formula
- Thickens for ease of use

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Product Properties

Appearance	Clear gel
pH	7.3 – 7.6
Viscosity* (mPa·s)	2,100 – 2,600 (A) 1,300 – 1,700 (B)
Turbidity** (NTU)	9 (A) 17 (B)

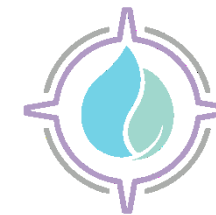
**Brookfield® DV-II+ Pro Viscometer, spindle #4 at 20 rpm, 25°C after 24 hours*

***Micro 100 Turbidimeter (HF Scientific, Inc.)*

Color Care Mild Conditioning Shampoo

Keep hair color looking fresh, whether from the salon or a DIY at-home hair dyeing session, with this gentle, color safe conditioning shampoo free of sulfates and silicones.





Color Care Mild Conditioning Shampoo

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	52.15	
	2. Acrylates Copolymer (30% TS)	10.00	Carbopol® Aqua SF-1 polymer
	3. Disodium Laureth Sulfosuccinate (and) Cocamidopropyl Betaine (and) Sodium Cocoyl Isethionate (and) Sodium Lauroyl Sarcosinate (32% TS)	31.00	Chemoryl™ SFB-4SB surfactant
B.	4. Cocamidopropyl Betaine (35% TS)	2.00	Chembetaine™ CAD surfactant
	5. Polyquaternium-22 (37% TS)	0.40	Merquat™ 295 polymer
	6. Polyquaternium-53 (21% TS)	0.40	Merquat™ 2003PR polymer
C.	7. Phenoxethanol (and) Caprylyl Glycol	0.50	
	8. Glycol Distearate (and) Laureth-4 (and) Cocamidopropyl Betaine (41% TS)	2.00	Quickpearl™ PSB3 pearlizing agent
	9. Yellow 5 (0.1%)	0.15	
	10. Sodium Hydroxide (20%)	0.50	
	11. Sodium Chloride	0.80	
	12. Citric Acid (50%)	0.10	

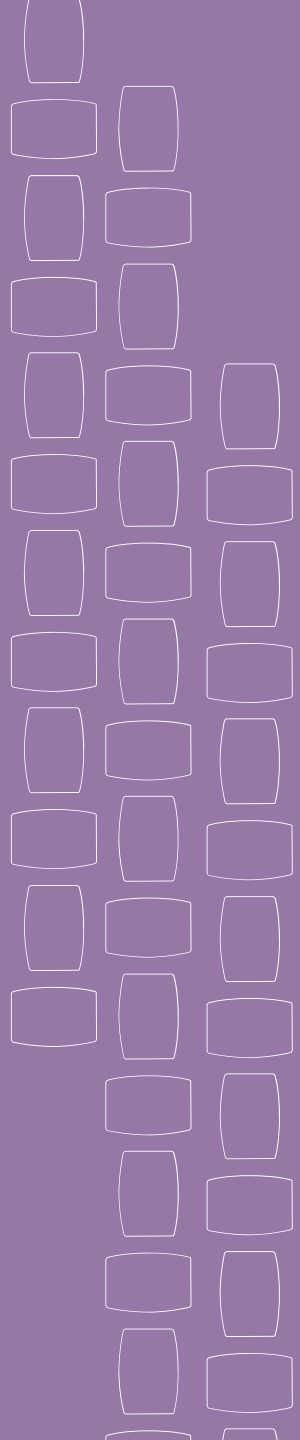
- Luxurious flow aesthetics
- Gentle cleansing
- Foam boosting
- Gentle and effective conditioning

Product Properties

Appearance	Yellow, pearlescent viscous liquid
pH	6.3 – 6.7
Viscosity* (mPa·s)	4,500 – 8,000

*Brookfield® RV Viscometer, spindle #4 at 20 rpm, 1 minute, 20°C after 24 hours

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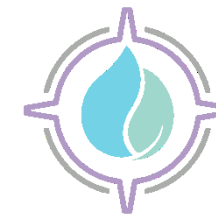


PROTECT

Radiant Blue Light Protection Facial Cream

Protect delicate facial skin from photoaging caused by the blue light emitted from devices while working from home. Enjoy the creamy sensory and soft, silky afterfeel of this hydrating facial cream.





Radiant Blue Light Protection Facial Cream

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	66.15	
	2. Polyurethane-62, Trideceth-6	0.80	Avalure™ Flex-6 polymer
	3. Butylene Glycol	5.00	
	4. Disodium EDTA (10%)	1.00	
	5. Phenoxyethanol	0.50	
	6. Titanium Dioxide, Mica, Tin Oxide (Red)	2.00	
	7. Titanium Dioxide, Mica, Tin Oxide (Gold)	2.00	
	8. Acrylates Copolymer	2.00	Carbopol® Aqua SF-1 OS polymer
B.	9. Neopentyl Glycol Diethylhexanoate	10.00	Schercemol™ NGDO ester
	10. Methyl Glucose Sesquistearate	1.00	Glucate™ SS emulsifier
	11. Isododecane	5.00	
C.	12. Sodium Hydroxide (18%)	0.45	
D.	13. Butylene Glycol, Aqua, Plankton Extract	2.00	Brighlette™ marine ingredient

- Long-lasting performance due to film formation
- Enhances smooth skin feel

- Stabilizes emulsion
- Enhances pearlizing effect

- Silky soft, silicone-like skin feel

- Enhances pick-up and creamy texture

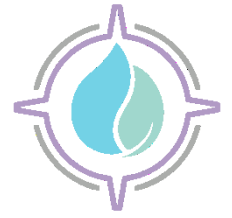
- Helps to even skin tone

Product Properties

Appearance	Off white, pearlized, glossy lotion
pH	6.8 – 7.3
Viscosity* (mPa·s)	25,000 – 35,000

*Brookfield® RVT Viscometer, spindle #7 at 20 rpm, 25°C after 24 hours

(Continued on next slide)



Radiant Blue Light Protection Facial Cream

	INCI Name	Wt%	Trade Name
14.	Glycerin, Water, Hydrolyzed Pea Protein, Glucose, Sodium Chloride, Sodium Succinate	2.00	Lumicease™ blue ingredient
15.	Fragrance	0.10	

- Improves the skin's response to light
- Reduces the appearance of photo-induced damage

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Product Properties

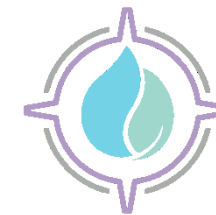
Appearance Off white, pearled, glossy lotion
 pH 6.8 – 7.3
 Viscosity* (mPa·s) 25,000 – 35,000

*Brookfield® RVT Viscometer, spindle #7 at 20 rpm, 25°C after 24 hours

Skin Defense Face & Hand Cream

Reinforce the skin's natural barrier to pathogens while caring for dry, flaky or cracked skin on the face or hands with this microbiome-friendly cream.





Skin Defense Face & Hand Cream

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	69.15	
	2. Polyurethane-62, Trideceth-6	0.80	Avalure™ Flex-6 polymer
	3. Butylene Glycol	5.00	
	4. Disodium EDTA (10%)	1.00	
	5. Phenoxyethanol	0.50	
	6. Titanium Dioxide, Mica, Tin Oxide (Red)	2.00	
	7. Titanium Dioxide, Mica, Tin Oxide (Gold)	2.00	
	8. Acrylates Copolymer	2.00	Carbopol® Aqua SF-1 OS polymer
B.	9. Neopentyl Glycol Diethylhexanoate	10.00	Schercemol™ NGDO ester
	10. Methyl Glucose Sesquistearate	1.00	Glucate™ SS emulsifier
	11. Isododecane	5.00	
C.	12. Sodium Hydroxide (18%)	0.45	
D.	13. Water, Acetyl Heptapeptide-4, Caprylyl Glycol	1.00	Fensebiome™ peptide
	14. Fragrance	0.10	

- Long-lasting performance due to film formation
- Enhances smooth skin feel

- Stabilizes emulsion
- Enhances pearlizing effect

- Silky soft, silicone-like skin feel

- Enhances pick-up and creamy texture

- Promotes microbiota balance, helping to boost the skin's own defense system

Product Properties

Appearance	Off white, pearlized, glossy lotion
pH	6.8 – 7.3
Viscosity* (mPa·s)	25,000 – 35,000

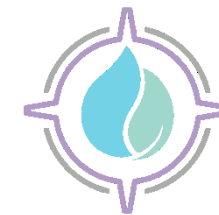
*Brookfield® RVT Viscometer, spindle #7 at 20 rpm, 25°C after 24 hours

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Ultra Black Liquid Eyeliner

Highlight the eyes while wearing your mask with this ultra black liquid eyeliner meant to maintain a captivating cat-eye all day long.





Ultra Black Liquid Eyeliner

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	32.70	
	2. Disodium EDTA	0.20	
	3. Propanediol	5.00	
	4. Butylene Glycol, Water, Citric Acid, Acetyl Hexapeptide-49	2.00	Delisens™ peptide solution
	5. Phenoxyethanol	0.50	
	6. Acrylates Copolymer (30% TS)	3.00	Carbopol® Aqua SF-1 OS polymer
B.	7. Sodium Hydroxide (20%)	0.60	
C.	8. Alcohol Denat.	10.00	
D.	9. PPG-17 / IPDI / DMPA Copolymer	10.00	Avalure™ UR 450 polymer
E.	10. Iron Oxides, Aqua, Glycerin, Xanthan Gum, Sodium Citrate	36.00	

- Reduces skin discomfort and sensitivity
- Imparts viscosity
- Excellent pigment suspension
- Reduces pigment migration for wear resistance

Product Properties

Appearance	Black gel
pH	7.0 – 7.8
Viscosity* (mPa·s)	4,000 – 5,000
Yield Value (dyn/cm ²)	150 – 300

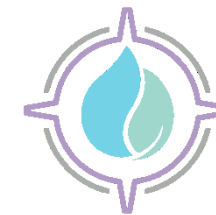
*Brookfield® RVDV-1 Viscometer, spindle #4 at 20 rpm, 25°C after 24 hours

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Skin Tightening Eye Serum Gel

Not sleeping well due to anxiety or stress related to life changes from the pandemic? Let this eye serum be your best friend to combat dark circles and eye bags, while reducing the appearance of fine lines and wrinkles.





Skin Tightening Eye Serum Gel

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	43.50	
	2. Lithium Magnesium Sodium Silicate, Tetrasodium Pyrophosphate	4.00	
B.	3. Deionized Water	47.00	
	4. Disodium EDTA	0.20	
	5. Polyurethane-62, Trideceth-6	1.00	Avalure™ Flex-6 polymer
	6. Acrylates Copolymer (30% TS)	2.00	Carbopol® Aqua SF-1 OS polymer
C.	7. Silica	0.30	
	8. Butylene Glycol, Water, Plankton Extract	1.00	Eyedeline™ marine ingredient
	9. Phenoxyethanol	0.50	
	10. Red 40	0.10	
	11. Citric Acid (50%)	0.40	

- Film former that helps prepare skin for color cosmetic application
- Light sensory skinfeel

- Flow aesthetics
- Overall product stability

- Helps to combat dark circles and eye bags

Product Properties

Appearance	Viscous serum
pH	6.0 – 8.5
Viscosity* (mPa·s)	30,000 – 75,000
Yield Value (dyn/cm ²)	1,500 – 5,000

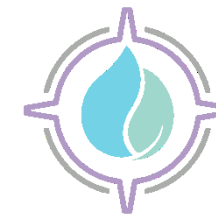
**Brookfield® RVT Viscometer, spindle #7 at 20 rpm, 25°C after 24 hours

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Light, Mattifying BB Lotion Spray

Quickly refresh your complexion and prepare to look your best on that next Zoom call with this light, mattifying BB lotion spray.





Light, Mattifying BB Lotion Spray

	INCI Name	Wt%	Trade Name
A.	1. Deionized Water	77.35	
	2. Disodium EDTA	0.20	
	3. Propanediol	5.00	
	4. Potassium Sorbate	0.10	
	5. Phenoxyethanol	0.50	
	6. Acrylates Copolymer (30% TS)	3.00	Carbopol® Aqua SF-1 OS polymer
	7. Acrylates / Beheneth-25 Methacrylate Copolymer (30% TS)	1.00	Novethix™ L-10 polymer
B.	8. Sodium Hydroxide (20%)	0.80	
C.	9. Boron Nitride	5.00	
	10. Mica, Titanium Dioxide, Iron Oxides	1.50	
	11. Mice, Iron Oxides	0.25	
	12. Glycerin, Pseudoalteromonas Ferment Extract	5.00	Matmarine™ blue ingredient
	13. Fragrance	0.30	

- Optimum shear-thinning spray rheology
- Pigment suspension
- High stability

- Transfer resistance for a long-lasting effect

- Improves the appearance of combination and oily skin
- Helps minimize visible pores

Product Properties

Appearance	Beige, golden gel
pH	7.0 – 7.5
Viscosity* (mPa·s)	8,000 – 9,000
Yield Value (dyn/cm ²)	650 – 800

*Brookfield RV DV-1 Viscometer, spindle #5 at 20 rpm, 25°C after 24 hours

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Versatility in a Variety of Formulas

CLEANSE + CARE

- Hand Cleanser & Conditioner
- Color Care Shampoo
- Hand Sanitizer

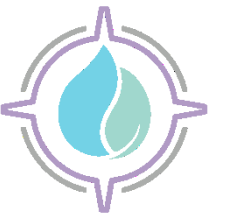
PROTECT

- Blue Light Protection Cream
- Skin Defense Cream

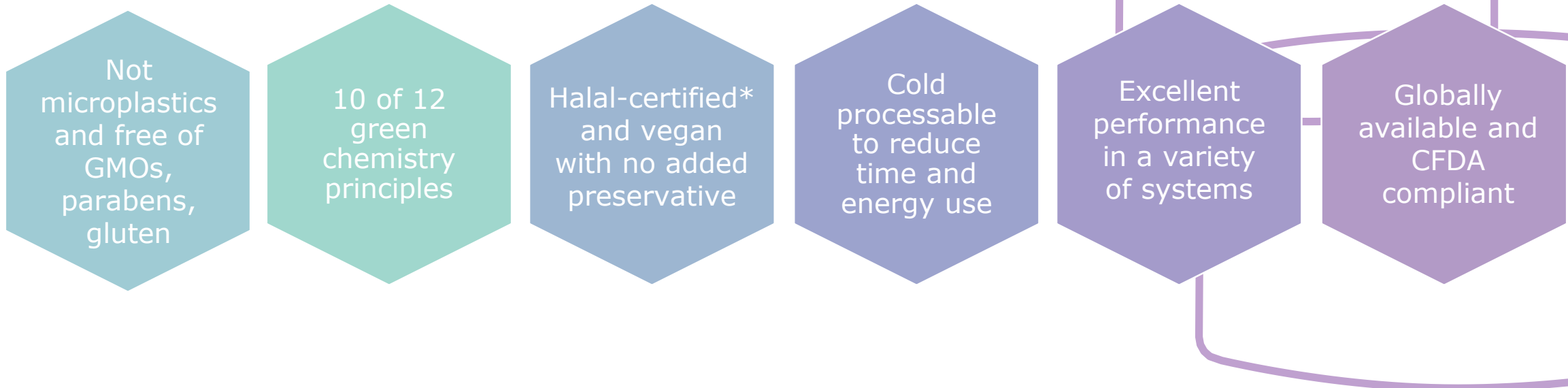
CREATE

- Liquid Eyeliner
- Eye Serum Gel
- BB Lotion Spray

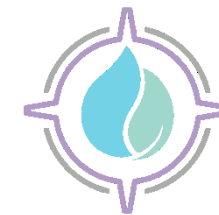
Carbopol® Aqua SF-1 and SF-1 OS polymers **stabilize**, **suspend** and enable **beautiful flow aesthetics** in COVID-19 relevant formulas



Summary of Benefits of Carbopol® Aqua SF-1 and SF-1 OS polymers



Our technical team is ready to assist you in today's formulating challenges
Please contact our sales team or distributor partners for more information or samples



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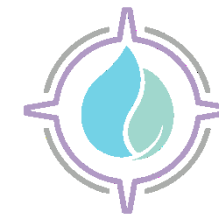
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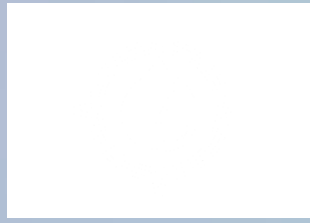
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Thank You

For more information, samples and/or starting formulations with complete processing instructions and supplier references please contact:

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Thank you for
your attention

