## sappi Valida

Your cosmetics, the natural way





# sappi | Valida

# From nature to your cosmetics

Across the cosmetics landscape, consumers are seeking more natural ingredients that make them feel good about themselves and their environmental footprint. Although the demand is clear, companies still struggle to find a suitable replacement that provides viscosity and other benefits associated with artificial compounds. That's where Valida comes in. Valida is a renewable material that performs as an opacifier and stabiliser for a wide range of cosmetic applications, as well as supporting a more sustainable lifecycle.



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Valida is natural cellulose, the most abundant organic material on earth.

## The power of cellulose. Enhanced by Sappi.

Sappi is a global diversified woodfibre group, focused on dissolving pulp, paper-based solutions and high quality functional biomaterials.

Manufacturing operations can be found on 3 continents with sales in over 150 countries. We are using our global leadership position and significant investment in Research and Development in coated graphics papers, speciality packaging grades, dissolving pulp and biorefinery processes, to respond to the growing global demand for high quality functional biomaterials.

#### **CELLULOSE IS THE SOURCE OF OUR INSPIRATION**

As we focus on creating value for our shareholders from relevant, sustainable woodfibre products, we take cognisance of our impact on the planet and our stakeholders to ensure that all benefit in the long term. Our commitment to sustainability is based on being a trusted, transparent, and innovative partner in building a bio-based circular economy. Sustainability is entrenched in the way we manage our daily business activities, mitigate risk, leverage opportunities, and plan for the future. We hold ourselves accountable for global sustainability and best practice standards by transparently measuring, monitoring, and communicating our economic, social, and environmental performance. We further use innovative technology to contribute to a thriving world through reliable and relevant solutions by extracting more value from each tree.

## Sustainability and collaboration

At Sappi, we believe that building a thriving, sustainable world is a moral and business imperative, affecting each and every decision we make.

We are known for our challenge-driven innovation in natural solutions and are continuously looking for strategic partnerships in the quest for a sustainable future.



#### WHAT IS VALIDA?

### Valida contains the smallest component of cellulose – cellulose fibrils.

Dispersed in water, cellulose fibrils form an extensive network through hydrogen bonding and mechanical entanglement. The formed network stabilises particles in suspension and oil-in-water emulsions without an emulsifier.





#### VALIDA'S RHEOLOGY PROPERTIES

Valida is highly thixotropic with excellent shear thinning properties. This allows formulations to be stabilised without increasing viscosity, providing easy to spray products. When the product is applied, the shear is removed and viscosity is immediately restored, resulting in no dripping of the formulation and more importantly, no waste!



## Valida in Personal Care – Performance from a natural material



#### STABILISE FORMULATION WITHOUT THICKENING

- No phase separation
- Increases additive efficiency
- Stabilises particles from UV filters to fragrance capsules to AHAs

#### THIXOTROPIC RHEOLOGY

- Sprayable with no drip
- Easily spreadable
- Synergy with co-thickeners

#### MOISTURISING

- Fresh skin-feel
- Quick break
- Eliminate greasy and tacky feel





#### VALIDA IN SUNSCREENS

- Stabilises highly loaded mineral and chemical sunscreens
- Boosts SPF of mineral and chemical UV filters
- Creates non-whitening formulation that is easy to spread

#### VALIDA IN FOAMING APPLICATIONS

- Valida stabilises foam due to its high yield stress
- Increases foam stability, creating dense and creamy foam

#### VALIDA VS INCUMBENT MATERIALS

		Valida S+	Xanthan Gum	Cellulose Gum	Carbomer
Ires	COSMOS approved	✓	✓	✓	
	Bio-based	✓	✓	✓	
Feat	Network formation	\$\B\$ \$\B\$			
	Water retention		٢	• •	٢
	Thixotropic rheology	✓	✓		✓
Ņ	Fresh skin feel	✓			✓
enefit	Unique texture	✓			
Ō	Improved pickup	✓			
	Stabilisation at low viscosity	✓			
Applications	Skin care, Body care, Sun care, Dental care, Baby care, other leave-on formulas	<b>√</b>	✓	✓	✓
	Hair care, other rinse-off formulas	✓	✓	✓	✓
	Fragrance formulas	✓	✓	✓	✓





#### VALIDA'S ENHANCED RHEOLOGY & SYNERGIES WITH XANTHAN GUM

Valida's hydrating property counters the greasy and sticky skin feel of Xanthan Gum, whilst improving formulation pickup and providing a unique texture.



At low dosage, Valida is a stabiliser with minimal impact on viscosity. At increased dosage, Valida can act as a thickener.



#### VALIDA'S ENHANCED RHEOLOGY & SYNERGIES WITH XANTHAN GUM CONTINUED



Valida also synergises with Xanthan Gum for significantly improved viscosity and stabilising performance.

#### VALIDA SHOWS ROBUST PERFORMANCE

Valida shows robust performance in high electrolyte concentrations, pH and (largely) polar solvents capable of hydrogen bonding as well.



#### VALIDA S+ GRADES

Grade name	INCI of cellulose	Preservative
Valida S+, 3% gel	Cellulose	Hydroxyacetophenone, Hexanediol
Valida S+ (8% paste)	Cellulose	Hydroxyacetophenone, Hexanediol
Valida S+ CS-3 (cosmos certified)	Cellulose & cellulose gum	Sodium benzoate, citric acid
Valida S+ CS-8 (cosmos certified)	Cellulose & cellulose gum	Sodium benzoate, citric acid
Valida S+ K8	Cellulose	Pentylene glycol, glyceryl caprylate



3% active, gel



8% active, paste

## Guideline formulations

#### AN APPLICATION EXAMPLE: EYE CREAM

Ingredient	INCI-Name	Function	Valida formulation, %	Reference formulation, %
Phase A				
Purified water	Aqua	Solvent	To 100	To 100
Pricerin 9091	Glycerin	Humectant	3	3
Valida S+ (as received)	Cellulose	Stabiliser, co-thickener, skin feel enhancer	3,8	0
Xanthan Gum		Thickener	0	0,3
Phase B				
Crodamol GTCC	Caprylic/Capric Triglyceride	Emollient	4	4
Avocado Oil	Persea Gratissima (Avocado) Oil	Emollient	2	2
Jojoba Oil	Simmondsia Chinensis Seed Oil	Emollient	0,10	0,10
Cetiol SB45	Butyrospermum Parkii (Shea) Butter	Emollient	1	1
Cetyl Stearyl Alcohol	Cetearyl Alcohol	Emulsifier	3	3
Stearic Acid	Stearic Acid	Emulsifier	1	1
Olivern 1000	Cetearyl Olivate, Sorbitan Olivate	Emulsifier	4	4
Phase C				
Vitamin E	Tocopheryl Acetate	Antioxidant	0,50	0,50
Aloe Extract	Aloe Barbadensis Leaf Extract	Soothing agent	0,10	0,10
Preservative	Phenoxyethanol	Preservative	0,50	0,50
Sodium Hydroxide	Sodium Hydroxide	pH adjuster	q.s.	q.s.

#### **PREPARATION METHOD**

- 1. Combine Phase A ingredients and heat to 75°C. Do the same for Phase B.
- 2. Combine Phase A with B and emulsify until homogeneous and glossy. Homogenise at 3000 rpm for 3 minutes.
- 3. Let it cool to 40°C. When cooled, add Phase C one by one and mix well.
- 4. Adjust pH to 5.5-5.6.

#### **GENTLE SULPHATE-FREE SHAMPOO**

Phase	Ingredient	INCI-Name	Function	% w/w
А	Deionized water	Aqua	Solvent	Up to 100
	Dissolvine GL-47-S	Tetrasodium Glutamate Diacetate	Chelating Agent	0.10
	Valida S+ 3% gel	Cellulose	Conditioning Agent	3.00
	Perlastan L30	Sodium Lauroyl Sarscosinate	Surfactant	5.00
	Sodium Methyl Cocoyl Taurate	Sodium Methyl Cocoyl Taurate	Surfactant	14.00
	Plantacare L30	Decyl Glucoside	Surfactant	14.00
	Dehyton PK45	Cocamidopropyl Betaine	Surfactant	8.00
	Disodium Cocoamphodiacetate	Disodium Cocoamphodiacetate	Surfactant	2.00
	Microcare PHG	Phenoxyethanol and Caprylyl Glycol	Preservative	1.00
	Sodium Chloride	Sodium Chloride	Thickener	q.s
В	Citric Acid Solution (20%)	Citric Acid Solution (20%)	pH adjuster	0.50

This formulation provides a mild, natural shampoo base with conditioning effect.

#### **SPECIFICATION**

Appearance: Opaque gel. pH-value: 5.50 – 6.50. Viscosity: 3500 - 4000 cPS at 25°C. Stability: Stable for 1 month at 5°C, 20°C and 40°C and 45°C.

- 1. Add Valida 3% gel into warm Deionized Water (40°C) under homogenisation to activate the fibre network.
- 2. Add the remainder of Phase A ingredients one at a time until well incorporated and homogenous.
- 3. Add Phase B to adjust pH.

#### SUNSCREEN SPF 20 FORMULATION (MINERAL UV FILTER)

Phase	Ingredient	INCI-Name	Function	% w/w
А	Hallbrite	Butyloctyl Salicylate	Emollient and dispersing agent	3.5
	Amphisol K	Potassium Cetyl Phosphate	Emulsifier	0.5
	Olivem LV Flex	PEG-8 Stearate, Glyceryl Stearate, Cetearyl Alcohol, Sorbitan Oleate	Emulsifier	4.0
	Dermofeel GSC SG	Glyceryl Stearate Citrate	Emulsifier	2.0
	Kobo SO60MZJ	Zinc Oxide and Helianthus Annuus (Sunflower) Seed Oil (and) Jojoba Estera	UV-Filter	30
	Sunsil-Tin50 Ultra AS	Silica (and) Titanium Dioxide	UV-Filter	3.5
	Vitamin E	DL-A-Tocopherol	Antioxidant	0.5
В	Deionised Water	Aqua	Solvent	46.2
	Valida S+	Cellulose	Stabilising agent, rheology modifier and sensory agent	5.0
	Propylene Glycol	1,2-propanediol	Humectant	1.0
	Xanthan Gum	Xanthan Gum	Thickener	0.1
	Glycerin	Glycerin	Humectant	3.0
	Sharomix AM 25	Phenoxyethanol (and) Chlorphenesin (and) Caprylyl Glycol (and) Didecyldimonium Chloride	Preservative	0.7

- 1. Add Amphisol K to Hallbrite BHB into a vessel. Heat to 85°C under stirring.
- 2. Add remainder of Phase A ingredients, heat to 70°C. Mix until homogenous.
- 3. In a separate vessel, heat water from Phase B to 75°C.
- 4. Add Valida S+ to water, homogenise for 5 min at 8000 rpm.
- 5. Premix Xanthan Gum into glycerine.
- 6. Add remainder of Phase B ingredients to the water and Valida S+ after the homogenisation of Valida S+.
- 7. Heat Phase B to 70°C.
- 8. Add Phase A to Phase B.
- 9. Homogenise at 3000 4000 rpm for 5 minutes until homogenous and emulsion forms.
- 10. Cool down batch with propeller mixing. When batch is below 50°C add Phase C ingredients one at a time.
- 11. Mix until batch is homogenous.

#### SUNSCREEN – MINERAL AND CHEMICAL UV FILTER SPF 30

Phase	Ingredient	INCI-Name	Function	% w/w
А	Water	Aqua	Solvent	58.50
	Eusolex 232	Phenylbenzimidazole Sulfonic Acid	UVB Absorber	3.00
	NaOH Solution	Sodium Hydroxide	Neutraliser	0.60
	Valida S+	Cellulose	Stabiliser	5.00
	Rheocare XGN	Xanthan Gum	Thickener	0.10
	Glycerin	Glycerin	Humectant	3.00
В	Cetiol AB	C12-15 Alkyl Benzoate	Emollient	10.00
	Parsol EHS	Ethylhexyl Salicylate	UVB Absorber	3.00
	Uvinul A Plus	Diethylamino Hydroxybenzoyl Hexyl Benzoate	UVA Absorber	4.00
	Tinosorb S	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	UV Absorber	2.00
	Montanov L	C14-22 Alcohols & C12-20 Alkyl Glucoside	Emulsifier	3.00
	SUNZnO-OLEO 200	Zinc Oxide (and) Cetyl Alcohol	UV filter	5.00
С	Sepinov EMT-10	Hydroxyethyl Acrylate/Sodium Acryloyldimethyl Taurate	Thickener	0.50
	Simulgel INS 100	Hydroxyethyl Acrylate/Sodium Acryloyldimethyl Taurate Copolymer (and) Isohexadecane (and) Polysorbate 60	Stabiliser	0.80
D	Vitamin E	dl-a-Tocopheryl Acetate	Antioxidant	0.50
	Microcare PHG	Phenoxyethanol and Caprylyl Glycol	Preservative	1.00



#### VITAMIN C ENERGISING SERUM FORMULA

Phase	Ingredient	INCI-Name	Supplier	% w/w
A	Deionised Water	Aqua	Pure Klenz	86.20
	Ascorbyl Glucoside AA2G	Ascorbyl Glucoside	GfN Selco/ DKSH	2.00
В	Sodium Citrate	Sodium Citrate	Special Ingredients	2.00
С	Valida S+ 3% Gel	Aqua, Cellulose, Hydroxyacetophenone, 1,2-Hexanediol	Sappi	1.00
D	Vegetable Glycerin	Glycerin	The Soap Kitchen	2.00
	Zemea Propanediol	Propanediol	IMCD	2.00
	Solagum AX	Acacia Senegal Gum (and) Xanthan Gum	Seppic	0.30
	PrincipHYAL® Cube3	Sodium Hyaluronate	Infinity Ingredients	0.30
	Agascalm	Propanediol (and) Glycerin (and) Agastache Mexicana Flower/ Leaf/Stem Extract	Azelis	1.00
	Superox C AF	Glycerin (and) Water (and) Terminalia Ferdinandiana Fruit Extract	Infinity Ingredients	2.00
	Sodium Gluconate	Sodium Gluconate	Surfachem	0.20
	Microcare <sup>®</sup> PEHG	Phenoxyethanol, Ethylhexylglycerin	Thor Chemicals	1.00

#### **SPECIFICATION**

Appearance: Transluscent Serum. pH (Metler Toledo 5 Easy): 5.0 - 5.5. Viscosity (Ametek-Brookfield) T-BAR C @10 rpm: 100 - 200.

- 1. Combine Phase A in main vessel. Homogenise to uniformity.
- 2. Add Phase B to main vessel. Homogenise to uniformity.
- 3. Add Phase C to main vessel. Homogenise to uniformity under high shear.\*6000 rpm
- 4. Add Phase D to main vessel. Homogenise to uniformity.
- 5. Add Phase E to main vessel. Homogenise to uniformity.
- \* Mixing speed during homogenisation will vary depending on batch size range will be from 3000 6000 rpm approximately.
- \* Sodium Citrate has been used to make pH adjustments and levels may vary slightly between batches, therefore best to check levels during each batch production.

#### AHA NATURAL GLOW CLEANSER

Phase	Ingredient	INCI-Name	Supplier	% w/w
A	Deionised Water	Aqua	Pure Klenz	55.30
	Vegetable Glycerine	Glycerin	The Soap Kitchen	2.00
	Valida S+ 3% Gel	Cellulose, Aqua, Hexanediol, Hydroxyacetophenone	Sappi	2.00
	Evicare Aquarex 14	Xanthan Gum	Infinity Ingredients	0.50
	Sodium Gluconate	Sodium Gluconate	Surfachem	0.20
В	AHA Extract 44 Glycerin	Aqua, Glycerin, Citric Acid, Lactic Acid, Glycolic Acid, Malic Acid, Tartaric Acid, Citrus Medica Limonum Fruit Extract, Pyrus Malus Fruit Extract, Saccharrum Officinarum Extract, Vaccinium Myrtillus Fruit Extract, Vitis Vinifera Fruit Extra	Infinity Ingredients	2.00
С	Cocamidopropyl Betaine	Cocamidopropyl Betaine	Naturally Thinking	7.00
	Coco Glucoside	Coco Glucoside	Naturally Thinking	30.00
D	Geogard ECT	Benzyl Alcohol, Salicylic Acid, Glycerin, Sorbic Acid	Bay House Ingredients	1.00

#### **SPECIFICATION**

Appearance: White Translucent Gel. pH (Metler Toledo 5 Easy): 4.0-4.5. Viscosity (Ametek-Brookfield) T-BAR C @10rpm: 3500 - 4500.

- 1. Combine Phase A in main vessel. Homogenise to uniformity at 5000 rpm for approximately 2 minutes, this is to ensure the cellulose matrix has formed throughout the whole batch.
- 2. Add Phase B to main vessel. Homogenise to uniformity.
- 3. Add Phase C to main vessel. Homogenise to uniformity.
- 4. Add Phase D to main vessel. Homogenise to uniformity.
- 5. Adjust pH with 30% Citric Acid solution or 30% Sodium Hydroxide solution if needed.
- \* Mixing speed during homogenisation will vary depending on batch size-range will be from 3000 6000 rpm approximately.
- \* Sodium Hydroxide and/or Citric Acid levels required to make pH adjustments may vary slightly between batches therefore best to check levels during each batch.

#### PREBIOTIC INULIN CREAM

Phase	Ingredient	INCI-Name	Function	% w/w
A	Deionised Water	Aqua	Solvent	61.60
	IPD	Isoprene Glycol	Humectant	3.00
В	Valida S+	Cellulose	Stabiliser	3.80
С	GMS-35-SE	Glyceryl Stearate	Emulsifier	4.00
	Silbase 9806 cPs 100	Dimethicone	Emollient	3.00
	Radia 7104	Caprylic/Capric Triglyceride	Emollient	3.50
	Babassu (Aldivia) oil	Obrignya Oleifera Seed Oil	Emollient	0.50
	Stearic Acid	Stearic Acid	Co-emulsifier	2.00
	Cetyl Alcohol 95	Cetyl Alcohol	Co-emulsifier	3.00
	Biodine V	Macadamia Integrifolia Seed Oil, Phospholipids, Glycine Soja Sterols, Stearic Acid, Glycerin, Safflower Oil/Palm Oil Aminopropanediol Esters, Squalane	Emollient blend	1.00
	Inutec SL1	Glycerin, Inulin Lauryl Carbamate	Stabiliser	0.80
D	Euxyl PE9010	Phenoxyethanol, Ethylglycerin	Preservative	0.80
E	Deionised water	Aqua	Solvent	5.00
	Biolin/P	Inulin, Alpha-glucan, Oligosaccharide	Prebiotic	2.00
F	Deionised water	Aqua	Solvent	5.00
	Prebiulin FOS	Inulin, Fructose	Prebiotic protection	1.00
G	Fragrance	Fragrance	Fragrance	q.s.

- 1. Add ingredients of Phase A and heat to 70-75°C.
- 2. Add Phase B into Phase A and mix with homogenizer at 5 min.
- 3. Premix Phase C and heat to 70-75°C.
- Add Phase C to Phase A and mix with homogenizer at 5 min.
  Premix Phase E and add to Phase A, mix with homogenizer at 5-10 min.
  Premix Phase F and add to Phase A, mix with homogenizer at 5-10 min.
- 7. Add Phase G into Phase A and mix with homogenizer at 5 min.

#### HYDRATING ANTI-AGEING SERUM

Phase	Ingredient	INCI-Name	Function	% w/w
А	Deionized water	Aqua	Solvent	Up to 100
	Valida CS-8 (Cosmos certified)	Cellulose and Cellulose gum	Stabilising Agent and Conditioning Agent	5.00
В	Xanthan Gum	Xanthan Gum	Thickener	0.25
	Glycerin	Glycerin	Humectant	5.00
С	Aloe Vera Organic PhytaPure Juice Extract	Aloe Barbadensis Leaf Extract, Glycerine Citric Acid, Sodium Benzoate, Potassium Sorbate	Active	1.00
	Sytoin	Ectoin	Active	0.50
	Easy Ageing	Glycerin, Aqua, Gigartina Stellata Extract	Active	1.00
	Organic Sweet Almond Oil	Prunus amygdalus dulcis oil	Emollient	3.00
	Organic MCT Oil	Caprylic/Capric Triglyceride	Emollient	1.00
	Rosybloom Ecocert	Parfume	Parfume	0.50
D	Carephos N	Sodium Polyphosphate	Complexing Agent	0.20
	Sodium Benzoate	Sodium Benzoate	Preservative	0.50
	Potassium Sorbate	Potassium Sorbate	Preservative	0.10
E	Citric Acid	Citric Acid	pH adjuster	q.s

#### **SPECIFICATION**

Appearance: White viscous liquid. pH-value: 5.20 - 5.50. Viscosity: Approx. 1500 mPas at 20°C. Stability: Stable for 3 months at 4°C, 20°C and 40°C. 1 month at 45°C.

- 1. Mix components of Phase A and homogenise for 5 minutes at 10,000 rpm.
- 2. Mix Phase B and add to Phase A, stir until lumps are dissolved.
- 3. Add Phase C and homogenise for 1 minute at 10,000 rpm.
- 4. Add Phase D.
- 5. Add Phase E to adjust pH.

# Working together for sustainable impact

We believe the best ideas and innovations spring from diverse partnerships, so we invite you to help us accelerate meaningful change. We are committed to investing resources to develop applications which progress the commercial realisation of the unique benefits which Valida has to offer.

#### CONTACT DETAILS TO REQUEST A SAMPLE

Sappi Biotech sappi.com/valida valida@sappi.com



For further product details please scan the QR code.

## Sappi unlocks the power of trees to make every day more sustainable

Sappi is a leading global provider of powerful everyday materials made from woodfibre-based renewable resources. As a diversified, innovative and trusted leader focused on sustainable processes and products, we are building a more circular economy by making what we should, not just what we can.

Our raw material offerings (such as dissolving pulp, wood pulp and biomaterials) and end-use products (packaging and speciality papers, graphic papers, casting and release papers, and forestry products) are manufactured from sustainably-sourced production facilities powered with bio-energy. Together with our partners, Sappi will continue to build a thriving world by acting boldly in support of the planet, people and prosperity.

