

SULAPAC

**Sustainable, beautiful,
and functional materials
for cosmetic packaging
and more**



**Mission
driven.
Science
based.**



Sulapac Ltd is an award-winning material innovation company bringing solutions to the global plastic crisis.

Founded by two visionary female scientists in Helsinki, Finland, Sulapac is setting a new standard for sustainable materials replacing conventional plastic. With our materials, you can accelerate a cleaner tomorrow without compromising functionality or aesthetics.

Companies across various industries, from indie brands to global luxury icons, collaborate with Sulapac to build a better future for us all.

Join the forerunners today.



PREMIUM LOOK & FEEL

- ✔ Adaptable to your brand needs
- ✔ A way to stand out from the competition
- ✔ Can provide the same aesthetics as conventional plastic

MASS-PRODUCIBLE WITH OUTSTANDING FUNCTIONAL PROPERTIES

- ✔ No compromises, meets the highest quality requirements
- ✔ Trusted by global high-end brands
- ✔ Can be used with existing plastic converting machinery
- ✔ Excellent processability for manufacturers

SUSTAINABLE – BACKED BY SCIENCE

- ✔ Bio-based, biodegradable and recycled raw materials
- ✔ Low carbon footprint
- ✔ Responsibly sourced
- ✔ No permanent microplastics or toxic load
- ✔ Recyclable by design

All the Sulapac key features are scientifically validated and verified with third-party certificates. Find detailed info at sulapac.com/key-features

Become an ambassador for sustainability and innovation

BY ADOPTING SULAPAC, BRANDS AND MANUFACTURERS CAN:

- ✔ Reduce the use of fossil-based plastics
- ✔ Tackle microplastic pollution
- ✔ Reduce their carbon footprint
- ✔ Increase the use of recycled content
- ✔ Promote circular future
- ✔ Embrace biodiversity



Biobased and recycled: With Sulapac you can have it all

- Most Sulapac materials can be ordered with 100% recycled biopolymer content (based on mass balance allocation)
- The recycled raw material we currently use consists of both post-consumer and post-industrial waste
- Choosing Sulapac with recycled content allows an even greater reduction in carbon footprint compared to conventional plastic
- Utilizing recycled content doesn't alter the properties of Sulapac materials; the quality is on par with that of virgin material

Designed to be recycled – infinitely

- Sulapac materials can be sorted out from a mixed waste stream by utilizing standardized sorting methods like near infrared spectroscopy (NIR).
- Sulapac materials are recyclable both mechanically and chemically.
- Chemical recycling of Sulapac materials in an energy-efficient process, based on hydrolysis, is the most sustainable, circular way forward.

The chemical recycling of bio-based and biodegradable biopolymers is a highly efficient process:

- No microplastics produced
- No fossil-based raw materials needed
- Excellent yields - up to 95% vs. 30-80% for conventional plastics
- Energy efficient process ~100°C vs. 1000°C for conventional plastics
- Food contact compliance maintained
- Economically lucrative
- Even the smallest and most complex items get recycled (no sieving constraints)

Sulapac products and packaging can be disposed of with plastic waste, without interfering with the recycling process of conventional plastic.

The yields in chemical recycling of biopolymers can be as high as 95%.

Mechanical properties of the top 3 materials for cosmetic applications



	SULAPAC FLOW 1.8 (EX1014.3NC)	SOLID 2.0 (IM1026.0NC, IM1026.0BP, IM1026.0AW)	SULAPAC LUXE FLEX (IM1024.0NC, IM1024.0BP)
Density (g/cm3)	1.26	1.4	1.27
Shrinkage	Extrusion process	0.2	0.36
Certified biobased content (%)	72%	100%	86%
MFI (190°C/2.16 kg)	1-4g/10min	21-25g/10 min	28-35g/ 10min
Main components	Mix of biodegradable biopolymers and FSC certified wood flour (side steam)	Mix of biodegradable polymers and naturally occurring clay minerals	Mix of biodegradable biopolymers
Available with recycled content	Yes, up to over 50%	Yes, up to 70%	Yes, up to over 70%
Targeted replacement	ABS / AES	Thermodur / Bakelite	ABS
Application examples	Sharpenable cosmetic pencils	Fragrance caps Jars and lids Compacts	Fragrance caps Inner caps Jars and lids Compacts Brush handles Mechanical pens
Object thickness recommendations Min. – Max (mm)	Min. 0.5mm	0.5 – 9mm	0.6 – 6mm
Food contact compliance*	EU & FDA	EU & FDA	EU & FDA
Validated decoration techniques	Lacquering	Metallization, silkscreen printing, lacquering, hot stamping (ongoing trial)	Metallization, silkscreen printing, lacquering, hot stamping (ongoing trial)

*Restrictions and specifications of use apply, please ask for Declaration of Compliance for further information.



Sulapac Flow 1.8

Sustainable wood-composite for sharpenable pencils with outstanding functional properties.

- ✔ Made of FSC-certified wood and recycled biopolymers*
- ✔ Compatible with advanced and challenging formulas (both lip and eyeliner)
- ✔ Low carbon footprint: 1,1 kg CO2eq/kg**
- ✔ Typically used to replace PVC, ABS and AES



COMMERCIALLY
COMPOSTABLE ONLY.
FACILITIES MAY NOT
EXIST IN YOUR AREA.
CERT #10529195



PRODUCT 72%



*Main polymer used is 100% recycled (both PIR and PCR) based on mass balance credit method, certified by CSC Global Services.

**Cradle-to-gate carbon footprint (biogenic carbon included) based on critically reviewed study by an independent LCA consultancy.

Sulapac Solid 2.0

A ceramic-like premium composite for fragrance caps and lids.

- ✔ 100% biobased
- ✔ Heat, humidity and moisture-resistant
- ✔ Beautiful, ceramic-like look and feel
- ✔ Both velvety matte and glossy finish possible
- ✔ Low carbon footprint: 0,6 kg CO2eq/kg*
- ✔ Contains zero PFAS
- ✔ Popular replacement for thermosets



PRODUCT 100%



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Loopla

*Cradle-to-gate carbon footprint (biogenic carbon included) based on critically reviewed study by an independent LCA consultancy.





Sulapac Luxe Flex

Sustainable yet luxurious alternative for technical plastics in cosmetic packaging.

- ✓ Ideal substitute for ABS (compatible with most ABS molds)
- ✓ Good chemical resistance and excellent performance in cosmetic climatic testing
- ✓ Glossy finishing possible without varnish
- ✓ Low carbon footprint: 1,2 kg CO₂eq/kg
- ✓ The perfect choice for high-end fragrance caps



*Cradle-to-gate carbon footprint (biogenic carbon included) based on critically reviewed study by an independent LCA consultancy.

Mechanical properties of Sulapac materials for cosmetics

	Large wood chips		Small wood chips		Wood flour	Non-visible wood	No wood		
	Premium	Premium Flex 40	Universal	Universal Flex 35	Flow 1.8 & Flow 1.7	Luxe	Luxe Flex	Solid 2.0	Barrier
Natural color of the material									
Density (g/cm ³)	1.27	1.27	1.27	1.27	1.26	1.27	1.27	1.4	1.49
Shrinkage	0.2	0.2	0.2	0.3	N.A.	0.4	0.4	0.2	1
MFI (190°C/2.16 kg) (g/10min)	N.A.	N.A.	12	12	3	14	31	22	8
Flexural Strain (%)	2.0	2.1	1.9	2.5	4.5	3.0	6.5	1.3	1.1
Tensile Modulus (GPa)	4.9	4.4	4.5	3.5	2.1	3.2	2.3	7.8	8.7
Tensile strain at yield (%)	1.2	1.4	1.6	2.5	3.0	2.2	2.8	1.3	1.1
Tensile strength (MPa)	48	40	45	40	35	50	53	65	44
Charpy Impact (kJ/m ²)	6	8	10	11	33	16	19	16	9
Recommended minimum object thickness (mm)	2	2	0.6	0.6	EX: 0.25 (Flow 1.7) EX: 0.5 (Flow 1.8)	0.6	0.6	0.5	0.5
Food contact compliance*	EU & FDA	EU	EU & FDA	EU & FDA	EU & FDA	EU & FDA	EU & FDA	EU & FDA	EU
Recycled content maximum	>70%	>50%	>70%	>50%	>50%	>50%	>70%	>70%	>50%

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Trusted by
iconic brands
and industry-
leading
manufacturers





Fighting climate change and plastic pollution, together.

Join the forerunners at sulapac.com

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