

TECHNICAL DATA SHEET

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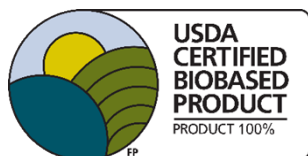
SULAPAC SOLID 2.0 – IM1026

MATERIAL FEATURES

Sulapac Solid is a sustainable injection molding material ideal for kitchenware used on a daily basis, such as plates, mugs, bowls and containers. The material contains 100% USDA certified biobased content. It has high impact strength and it is dishwasher¹ and microwave safe. Sulapac Solid has low carbon footprint², and it is certified as industrially compostable by BPI³. It doesn't leave permanent microplastics or toxic load behind⁴.

The unique combination of raw materials: responsibly sourced biodegradable biopolymers and naturally occurring clay minerals, gives Sulapac Solid its beautiful ceramic look and feel, even sound, that makes it stand out. Sulapac Solid meets the EU requirements for food contact materials⁵.

For further details on sustainability, visit sulapac.com/key-features/



¹ Material is suitable for repeated use as per European Commission regulation (EU) No 10/2011. Dishwashability tested according to EN 12875 standard with a minimum of 125 washing cycles.

² 0,57 kg CO₂ eq/kg based on cradle-to-gate LCA performed by an independent third-party consultancy (biogenic carbon included).

³ The compostability has been tested up to the thickness of 150µm according to BPI (ASTM D6400). As the compostability of an end product is also dependent on the geometry of product, it is the responsibility of the manufacturer of the end product to ensure compliance with the regulations.

⁴ Relative biodegradation of 77,3% in 420 days in simulated marine environment test (ASTM D6691 86 °F / 30 °C) using natural sea water. Not considered biodegradable in California

⁵ Restrictions and specifications of use apply, please refer to the relevant Declaration of Compliance for further information.



MECHANICAL PROPERTIES	
MATERIAL	SULAPAC SOLID 2.0
PHYSICAL PROPERTIES	
Hardness (Shore D)	91
Material density (g/cm ³)	1.4
Shrinkage (%)	0.1-0.2
Heat deflection temperature (HDT-B) (°C)	135
TENSILE PROPERTIES (ISO 527-1)	
Tensile strength (MPa)	65
Tensile modulus (GPa)	7.8
Tensile strain (%)	1.3
FLEXURAL PROPERTIES (ISO 178)	
Flexural strength (MPa)	83
Flexural modulus (GPa)	8.5
Flexural strain (%)	1.3
IMPACT PROPERTIES (Unnotched, ISO 179-1)	
Charpy impact strength (kJ/m ²)	15-18
RHEOLOGICAL PROPERTIES (ISO 1133)	
MFI (190°C/2.16 kg)	21-25 g/10 min

PROCESSING INSTRUCTIONS FOR INJECTION MOLDING

MOISTURE AND DRYING
INSTRUCTIONS
<ul style="list-style-type: none"> • Before processing, the granules should be dried using a dehumidifying or vacuum dryer. • If a dehumidifying dryer is used, the granules should be dried for at least 4 hours at 100°C. • If a vacuum drying system is used, the granules should be first dried for at least 20 minutes at 100°C and then kept in the vacuum for at least 40 minutes. • Avoid exposing the material to ambient conditions after drying. • Moisture content can lead to hydrolysis. • Dried granules should be mixed with the color masterbatch after the granules have cooled down in order to avoid the agglomeration of color masterbatch granules.



PROCESSING CONDITIONS		
	TEMPERATURE	GENERAL INSTRUCTIONS
Throat	40-60°C	<ul style="list-style-type: none"> • Typical settings may require optimization. • Both cold and hot runner systems are suitable for this material. • Valve gate systems can be used. • Avoid using temperatures above 210°C in order to lower the risk of polymer degradation. • The dwell time of the material inside the machine shall be reduced to minimum in order to lower the risk of thermal degradation.
Feed zone	150-165°C	
Compression zone	180-200°C	
Homogenizing zone	185-200°C	
Machine nozzle	185-210°C	
Back pressure	5-10 bar	
Screw speed, max	< 0,25 m/s	
Hot runner nozzle and pushing	180-210°C	
Tooling temperature T _{mold}	100°C	

PURGING INSTRUCTIONS		
BEFORE PRODUCTION	DURING PRODUCTION	AFTER PRODUCTION
<ul style="list-style-type: none"> • Purge the plasticization unit and the hot runner with PE (or PP). • To purge the plasticization unit and hot runner from residual PE (or PP) or previous production recipes, at least 10 cycles should be produced from Sulapac material before starting the actual production. 	<ul style="list-style-type: none"> • The material has a tendency to degrade and therefore needs a constant melt flow. • The condition of the mold should be regularly monitored and, if necessary, the mold should be cleaned using e.g. a glass fiber brush or mold cleaning agents. • If an extensive amount of burned material starts to appear in the products, try lowering processing temperature 	<ul style="list-style-type: none"> • Purge the plasticization unit and the hot runner with PE (or PP). • Clean up the mold after production. The temperature of the mold is recommended to be elevated to 70°C. Generally used mold cleaning agents can be utilized.

STORAGE AND TRANSPORTATION INSTRUCTIONS

STORAGE AND TRANSPORTATION CONDITIONS

GRANUELS

- It is recommended to store granules in their closed, original moisture barrier packaging.
- Storage in direct sunlight or in rain should be avoided.
- Temperatures during transportation and storage may not exceed 60°C at any time.
- Material shelf-life is 12 months from the manufacturing date when stored at room temperatures (23 °C). Manufacturing date can be found on the label on material packaging.

SULAPAC COLOR PALETTE

GRANUELS

- Sulapac color masterbatches for Sulapac Solid are currently under development.



Sulapac is proud to be an ISO 9001 and ISO 14001 certified company.

The information provided in this safety data sheet is based on our current knowledge and experience at the date of its publication and describe the material only with regards to safety requirements. No representation or warranty is made as to the truth or accuracy of any data, information or opinions contained herein or as to their suitability for any purpose, condition, or application. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.