

TECHNICAL DATA SHEET

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Version 1.4

SULAPAC UNIVERSAL HEAT 35 – IM1021

MATERIAL FEATURES

Sulapac Universal Heat 35 is a sustainable, beautiful, and functional injection molding material which contains 85% USDA certified biobased content. The material is ideal for single-use and reusable¹ premium cutlery with sturdy design providing excellent usability and high heat resistance.

Sulapac Universal Heat 35 is safe for people and the planet: the material is certified as industrially compostable by BPI² and leaves no permanent microplastic or toxic load behind³. Sulapac Universal Heat 35 meets the EU and US FDA requirements for food contact materials⁴.

For more details, visit sulapac.com/key-features/



1 Materials are suitable for reusable applications as per European Commission regulation (EU) No 10/2011. Dishwashability tested according to EN 12875 standard with 20 washing cycles.

2 The compostability has been tested up to the thickness of 500 µm 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.

3 Relative biodegradation of 52.5% in 140 days in simulated marine environment test (ASTM D6691 86°F / 30°C) using natural sea water. Not considered biodegradable in California.

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

MECHANICAL PROPERTIES

MATERIAL	UNIVERSAL HEAT 35
PHYSICAL PROPERTIES	
Material density (g/cm ³)	1.34
HDT-B (°C)	95
Shrinkage (%)	0.2
Hardness (Shore D)	80
TENSILE PROPERTIES (ISO 527-1)	
Tensile strength (MPa)	32
Tensile modulus (GPa)	5.8
Tensile strain (%)	1.3
FLEXURAL PROPERTIES (ISO 178)	
Flexural strength (MPa)	46
Flexural modulus (GPa)	5.3
Flexural strain (%)	1.5
IMPACT PROPERTIES (Unnotched, ISO 179-1)	
Charpy impact strength, unnotched (kJ/m ²)	5 – 7
RHEOLOGICAL PROPERTIES (ISO 1133)	
MFI (190°C/2.16 kg)	8 – 13

PROCESSING INSTRUCTIONS FOR INJECTION MOLDING

MOISTURE AND DRYING

INSTRUCTIONS

- 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.
- If color masterbatch is added, the granules should be cooled down to 50°C 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 200°C to reduce the risk of wood and polymer degradation. • The dwell time of the material inside the machine shall be reduced to a minimum to lower the risk of thermal degradation.
Feed zone	165 – 180 °C	
Compression zone	170 – 185 °C	
Homogenizing zone	180 – 190 °C	
Machine nozzle	185 – 195 °C	
Back pressure	5 – 10 bar	
Hot runner nozzle and bushing	185 – 195 °C	
T _{mold, Front}	15 – 30 °C	
T _{mold, Back}	15 – 30 °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 is sensitive to prolonged dwell time 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, if existing, the hot runner with PP or PE. • 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

GRANULES

- It is recommended to store granules in their closed, original moisture barrier packaging at temperatures below 45 °C.
- Storage in dry conditions.
- 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

GRANULES

- Sulapac color masterbatches for Sulapac Universal Heat 35 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.