

## TECHNICAL DATA SHEET

02.01.2023

Version 1.9

# SULAPAC FLOW V1.7 – EX1013

## MATERIAL FEATURES

Sulapac Flow v1.7 is a sustainable extrusion material with outstanding functional properties and a beautiful appearance. The main components are wood from industrial side streams and biodegradable biopolymers. All raw materials are sourced according to a strict sustainability policy and the wood originates from certified forests.

Sulapac Flow v1.7 contains 72% USDA certified biobased content, as analyzed according to ASTM D6866 standard under the USDA BioPreferred® Program.

As USDA Certified Biobased Product, Sulapac Flow v1.7 has achieved third-party verification of biobased content and has earned USDA certification and approval to display the label. The USDA Certified Biobased Product label is a certification mark of the U.S. Department of Agriculture.



Sulapac Flow v1.7 material is industrially compostable certified according to BPI (ASTM D6400) and Seedling (EN 13432).

Please check the detailed recycling instructions with local authorities.



Sulapac Flow v1.7 is safe for both people and the planet. Ecotoxicity and threshold values for heavy metals have been tested according to EN 13432. The material can be digested by naturally occurring microorganisms and does not leave permanent microplastics behind<sup>1</sup>. It complies with the food contact requirements of the FDA legislation, see Declaration of Compliance (DoC) for details.

For more details, visit [www.sulapac.com/key-features](http://www.sulapac.com/key-features)

1. *Relative biodegradation of 75.5 % in 420 days in the marine environment (30°C / 86°F) (ASTM D6691) as tested in a third-party laboratory. Not considered degradable in California.*

**MECHANICAL PROPERTIES – SULAPAC FLOW v1.7**

PROPERTY	METRIC UNIT	TYPICAL VALUE
<b>RHEOLOGICAL PROPERTIES</b>		
MFI (190°C/2.16 kg)	g/10min	1 – 4
<b>TENSILE PROPERTIES (ISO 527-1)</b>		
Tensile strength	MPa	33
Tensile modulus	MPa	2300
Tensile strain	%	11
<b>THERMAL PROPERTIES - DSC, 10°C/min</b>		
Melting point	°C	151
Glass transition temperature	°C	58
<b>OTHER PHYSICAL PROPERTIES</b>		
Material density	g/cm <sup>3</sup>	1.26
Bulk density	g/cm <sup>3</sup>	0.72
Flexural modulus (ISO 178)	MPa	3000
Impact strength (ISO 179, unnotched)	kJ/m <sup>2</sup>	34

**PROCESSING INSTRUCTIONS FOR EXTRUSION**

**MOISTURE AND DRYING**

**INSTRUCTIONS**

- Before processing the granules should be dried using a dehumidifying dryer or vacuum dryer
- If a dehumidifying dryer is used, the granules should be dried for at least 4-6 hours at 75°C
- If a vacuum dryer is used, the granules should be dried for at least 20 min at 75°C and when kept in the vacuum for at least 40 minutes.
- The best end result will be achieved if the residual moisture of the granules is < 0,2 %.
- Avoid exposing the material to the ambient conditions after drying.
- Excessive moisture content can lead to degradation of binders via hydrolysis during processing.
- 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
Feed Zone	RT - 180°C	<ul style="list-style-type: none"> <li>• Typical settings may require optimization.</li> <li>• Avoid using temperatures above 200°C to lower the risk of wood and binder degradation.</li> <li>• The dwell time of the material inside the machine shall be reduced to a minimum to lower the risk of thermal degradation. Degradation products may cause corrosion of equipment.</li> <li>• Decreasing temperature profile is recommended.</li> </ul>
Melt Zone	155 - 180°C	
Mixing and conveying zone	155 - 180°C	
Die	155 - 180°C	

## STORAGE AND TRANSPORTATION INSTRUCTIONS

STORAGE AND TRANSPORTATION
<p><b>INSTRUCTIONS</b></p> <ul style="list-style-type: none"> <li>• It is recommended to store the granules in their closed, original moisture barrier packaging at room temperature (23°C).</li> <li>• Storage in direct sunlight or in rain should be avoided.</li> <li>• Temperatures during transportation and storage may not exceed 60°C at any time.</li> <li>• 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.</li> </ul>



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

The information provided in this technical data sheet is based on our current knowledge and experience at the date of its publication. In view of the individual factors that may affect processing and application, this data does not relieve users from the responsibility of carrying out their own tests and experiments. 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.