

## TECHNICAL DATA SHEET

15.04.2025

Version 3.5

### SULAPAC FLOW 1.7 – EX1013.0NC

Sulapac Flow 1.7 is a sustainable solution for extrusion, thermoforming and injection molding. With outstanding functional properties it's ideal for thin-walled extrusion such as straws and thermoformed items, and flexible injection molded items.

TYPICAL MATERIAL PROPERTIES	
	EX1013.0NC
<b>PHYSICAL PROPERTIES</b>	
Hardness (Shore D)	84
Material density (g/cm <sup>3</sup> )	1,26
<b>TENSILE PROPERTIES (ISO 527-1)</b>	
Tensile strength at yield (MPa)	35
Tensile modulus (GPa)	2,1
Tensile strain at yield (%)	3
Tensile strain at break (%)	8
<b>FLEXURAL PROPERTIES (ISO 178)</b>	
Flexural strength at max load (MPa)	54
Flexural modulus (GPa)	2,4
Flexural strain at max load (%)	4,5
<b>IMPACT PROPERTIES (Unnotched, ISO 179-1)</b>	
Charpy impact strength (kJ/m <sup>2</sup> )	33
<b>RHEOLOGICAL PROPERTIES (ISO 1133) (190°C/2,16 kg)</b>	
MFI (g/10min)	3
<b>HEAT RESISTANCE</b>	
HDT-B (°C)	55
<b>BIOBASED CONTENT (ASTM D6866)</b>	
Biobased content (%)	72
<b>MATERIAL COLOR</b>	
Due to the natural origin of wood, color variation is possible both between and within material batches.	

## BARRIER PROPERTIES

WVTR (23 °C/85%) (g/m <sup>2</sup> /day)	3,1
OTR (23 °C/0%) (cm <sup>3</sup> /m <sup>2</sup> /day)	11,2

WVTR = water vapor transmission rate (ASTM F1249)

OTR = oxygen transmission rate (ASTM D3985)

## DRYING INSTRUCTIONS

### DRYING

- Before processing, the granules should be dried using a dehumidifying dryer or a vacuum dryer
  - Dehumidifying dryer: the granules should be dried for at least 4-6 hours at 80 °C
  - Vacuum dryer: the granules should be first dried for at least 20 minutes at 80 °C
- The best end result will be achieved if the residual moisture of the granules is < 0,2 %
- After drying, avoid exposing the material to ambient conditions
- 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

## USE OF MASTERBATCH

- Sulapac materials can be colored in the same way as conventional plastics. With Sulapac materials use color masterbatches with biodegradable carriers; PLA, PHA, PBAT, PBS. For further information, please see Sulapac color masterbatch guide.

## EXTRUSION - PROCESSING CONDITIONS

### GENERAL INSTRUCTIONS

- Typical settings may require optimization
- Avoid using temperatures above 200 °C in order to lower the risk of wood and polymer degradation
- The dwell time of the material shall be reduced to minimum in order to lower the risk of thermal degradation

### RECOMMENDED TEMPERATURES

Feed zone	20 – 40 °C
Melting zone	165 – 185 °C
Mixing and conveying zone	170 – 190 °C
Die	180 – 190 °C

## INJECTION MOLDING - PROCESSING CONDITIONS

### GENERAL INSTRUCTIONS

- Typical settings may require optimization
- Both cold and hot runner systems are suitable for these materials
- Valve gate systems can be used
- Avoid using temperatures above 200 °C in order to lower the risk of wood and polymer degradation
- The dwell time of the material shall be reduced to minimum in order to lower the risk of thermal degradation

### RECOMMENDED TEMPERATURES

Throat	40 – 60 °C
Feed zone	150 – 170 °C
Compression zone	160 – 180 °C
Homogenizing zone	175 – 190 °C
Machine nozzle	175 – 190 °C
Back pressure	5 – 10 bar
Hot runner nozzle and bushing	175 – 190 °C
Tooling temperature	20 – 40 °C

## PURGING INSTRUCTIONS

### BEFORE PRODUCTION

- Purge the extruder or plasticization unit and hot runner with PP or PE

### DURING PRODUCTION

- The material is heat sensitive. Avoid high processing temperatures and long dwell times
- If an extensive amount of burned material or fumes starts to appear in the products, try lowering processing temperature
- In case of production break flush the extruder or plasticization unit with fresh material

### AFTER PRODUCTION

- Purge the extruder or plasticization unit and hot runner with PP or PE
- Clean up the die or mold after production

## STORAGE, TRANSPORTATION AND SHELF-LIFE

### STORAGE

- In original unopened packaging at temperatures below 45 °C
- Once opened, reseal the package after each use
- In dry conditions and avoid exposure to high humidity and rain
- Away from direct sunlight

### TRANSPORTATION

- Temperatures during transportation may not exceed 60 °C

### SHELF-LIFE

- Shelf-life is from the date of manufacture, for unopened bags at room temperature (23 °C)
- Date of manufacture can be found on the label attached to the original packaging

**Sulapac Flow 1.7 – EX1013.0NC**

24 months

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.



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