

## TECHNICAL DATA SHEET

07.10.2024

Version 3.2

### SULAPAC FLOW 1.7

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	
	SULAPAC FLOW 1.7
<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 AND MASTERBATCH 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

### MASTERBATCH

- If color masterbatch is added, the granules should be cooled down to 50 °C in order to avoid the agglomeration of color masterbatch granules

## 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**

24 months

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