

## TECHNICAL DATA SHEET

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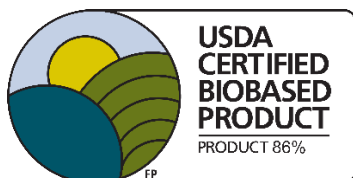
# SULAPAC LUXE FLEX – IM1024

## MATERIAL FEATURES

Sulapac Luxe Flex is a sustainable material for injection molding ideal for fragrance caps, compact powder boxes, cosmetic jars, lids, and pencils, for example. The material is resistant to temperature fluctuations, has a high density and a premium look and feel, even sound. With Sulapac Luxe both shiny and matt surface can be achieved depending on your mold selection. The material has excellent processability and it is easy to color with Sulapac masterbatches.

Sulapac Luxe Flex contains 86 % USDA certified biobased content<sup>1</sup>, sustainably sourced biodegradable biopolymers being the main raw material. Sulapac Luxe Flex is safe for people and planet<sup>2</sup>. The material is recyclable by design<sup>3</sup> and can also be made with recycled content.

For further details on sustainability, visit [sulapac.com/key-features](https://sulapac.com/key-features)



<sup>1</sup> USDA Certified Biobased Product label is a certification mark of the U.S. Department of Agriculture.

<sup>2</sup> Ecotoxicity and threshold values for heavy metals tested according to EN 13432. The material complies with the EU and US FDA food contact requirements (restrictions and specifications of use apply, further information in Declaration of Compliance).

<sup>3</sup> Can be recycled through hydrolysis back to monomers, suitable as feedstock for recycled biopolymers. Mechanical and chemical recyclability tested and proven technically feasible by third parties. Field tests have also verified that Sulapac materials can be collected and sorted out of a mixed waste stream. When collected together, Sulapac materials do not interfere with the current mechanical recycling of conventional fossil-based or bio-based non-biodegradable plastics. The technology for chemical recycling of bio-based and biodegradable materials exists, but the infrastructure is still under development.

<b>MECHANICAL PROPERTIES</b>	
<b>MATERIAL</b>	<b>SULAPAC LUXE FLEX (IM1024)</b>
<b>PHYSICAL PROPERTIES</b>	
Material density (g/cm <sup>3</sup> )	1.27
Shrinkage (%)	0.36
<b>TENSILE PROPERTIES (ISO 527-1)</b>	
Tensile strength (MPa)	55
Tensile modulus (GPa)	2.5
Tensile strain (%)	5
<b>FLEXURAL PROPERTIES (ISO 178)</b>	
Flexural strength (MPa)	80
Flexural modulus (GPa)	2.5
Flexural strain (%)	10
<b>IMPACT PROPERTIES (Unnotched, ISO 179-1)</b>	
Charpy impact strength (kJ/m <sup>2</sup> )	20
<b>RHEOLOGICAL PROPERTIES (ISO 1133)</b>	
MFI (190 °C/2.16 kg)	26 – 35

## PROCESSING INSTRUCTIONS FOR INJECTION MOLDING

<b>MOISTURE AND DRYING</b>
<b>INSTRUCTIONS</b>
<ul style="list-style-type: none"> <li>• Before processing, the granules should be dried using a dehumidifying dryer or a vacuum dryer.</li> <li>• If a dehumidifying dryer is used, the granules should be dried for at least 4 hours at 80 °C.</li> <li>• If a vacuum drying system is used, the granules should be first dried for at least 20 minutes at 60 °C and then kept in the vacuum for at least 40 minutes.</li> <li>• Avoid exposing the granules to ambient conditions after drying.</li> <li>• Moisture content can lead to hydrolysis.</li> <li>• If color masterbatch is added, the granules should be cooled down in order to avoid the agglomeration of color masterbatch granules.</li> </ul>



## PROCESSING CONDITIONS

TEMPERATURE		GENERAL INSTRUCTIONS
Throat	40 – 60 °C	<ul style="list-style-type: none"> <li>Typical settings may require optimization.</li> <li>Both cold and hot runner systems are suitable for this material.</li> <li>Valve gate systems can be used.</li> <li>Avoid using temperatures above 200 °C in order to lower the risk of material degradation.</li> <li>The dwell time of the material inside the machine shall be reduced to a minimum in order to lower the risk of thermal degradation.</li> </ul>
Feed zone	150 – 170 °C	
Compression zone	160 – 180 °C	
Homogenizing zone	175 – 200 °C	
Machine nozzle	175 – 200 °C	
Back pressure	50 – 100 bar	
Screw speed, max	< 0.2 m/s	
Hot runner nozzle and bushing	190 – 220 °C	
Tool temperature T <sub>mold</sub>	20 – 40 °C	

## PURGING INSTRUCTIONS

BEFORE PRODUCTION	DURING PRODUCTION	AFTER PRODUCTION
<ul style="list-style-type: none"> <li>Purge the plasticization unit and the hot runner with PP or PE.</li> <li>To purge the plasticization unit and hot runner from residual PP, PE or previous production recipes, at least 10 cycles should be produced from Sulapac material before starting the actual production.</li> </ul>	<ul style="list-style-type: none"> <li>The material has a tendency to degrade and therefore needs a constant melt flow.</li> <li>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 agent.</li> <li>If an extensive amount of burned material starts to appear in the products, try lowering processing temperature.</li> </ul>	<ul style="list-style-type: none"> <li>Purge the plasticization unit and hot runner with PP or PE.</li> <li>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.</li> </ul>

## STORAGE AND TRANSPORTATION INSTRUCTIONS

### STORAGE AND TRANSPORTATION CONDITIONS

#### GRANULES

- It is recommended to store the granules in their closed, original moisture barrier packaging at temperatures below 45 °C.
- Storage in dry conditions
- Storage in direct sunlight should be avoided.
- Temperatures during transportation may not exceed 60 °C
- 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.



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to be an  
ISO 9001  
and  
ISO 14001  
certified  
company**

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