

## Initial Material Data Sheet

EDITION: I

Date: 05.2021

<b>SPECIFICATION</b>	<p>Thermoplastic starch - thermoplastic material, produced from renewable raw materials, 100% biodegradable, intended for processing by injection moulding and extrusion. Can be processed as a raw material or as a base in blends. Suitable for blending with conventional petroleum and synthetic polymers and biodegradable/compostable polymers.</p> <p>Dedicated to the manufacture of disposable products.</p> <p><b>The time of complete biodegradation in the natural environment does not exceed 6 months.</b></p> <p>The product is hygroscopic and dissolves in hot water.</p>
<b>PROCESSING</b>	<p><b>Injection:</b> (cylinder zone settings:140-160°C), example: zone I: 145°C; zone II: 145°C; zone III: 150°C; orifice: 160°C Mould temperature: 30-35°C, Injection pressure: 60-250 MPa Plasticization pressure: 5-20 bar Screw rotation: 20-150 rpm Injection speed : average</p> <p><b>Extrusion:</b> Extrusion temperature: 120-165°C</p> <p><b>Before and after TPS processing, clean the plasticizing system of the injection molding machine or extruder with general purpose LDPE with medium to high melt index.</b></p>
<b>DRYING</b>	<p>TPS is delivered as ready for processing, without need of drying. If drying necessary there is recommended to use dehumidifier dryer and temperature should not exceed 50°C. Processing moisture content should be : &lt; 3%. Granules must be stored in hermetic, tightly closed containers.</p>
<b>COLOUR</b>	<p>Natural colour - from off-white to slightly yellow, transparent</p>
<b>PACKAGING</b>	<p>ALU/PE barrier bags with a net weight of 25 kg</p>

This information is based on the best of our knowledge and has been posted to provide general information about our product and its applications. This information cannot be considered a guarantee of the technical parameters of the product, as well as its suitability for the designated application. The quality of the product is guaranteed in the General Conditions of Sale and/or in the sales contract.

PROPERTIES	STANDARD METHOD	TEST CONDITIONS	UNIT	VALUE
<b>PHYSICAL PROPERTIES</b>				
Granulate size	-	-	mm	2-5
Density	1183	-	g/cm <sup>3</sup>	1,35
Mass melt flow rate (MFR)	1133	210°C/5 kg/ 5 min	g/10min	12
Water content	-	own method	% [m/m]	<3
<b>MECHANICAL PROPERTIES</b>				
Yield stress	527-1,-2	50 mm/min	MPa	25
Elongation at yield	527-1,-2	50 mm/min	%	2,5
Tensile strength at break	527-1,-2	50 mm/min	MPa	18
Elongation at break	527-1,-2	50 mm/min	%	6
Tensile modulus	527-1,-2	1 mm/min	MPa	1600
Flexural modulus	178	2 mm/min	MPa	30
Modulus of elasticity under bending	178	2 mm/min	MPa	1500
Charpy impact strength	179-1	1 eU	kJ/m <sup>2</sup>	30
Charpy notched impact strength	179-1	1 eA	kJ/m <sup>2</sup>	5

*The test pieces were prepared by injection moulding.  
Mechanical properties measured at 23 °C, unless otherwise stated.*

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