

# Technical Specification

UPM Formi EcoAce WB

25.03.2021



**Material** UPM Formi EcoAce WB is renewable biocomposite made from 40-60% wood fibers and wood waste derived ISCC certified polypropylene. It is specially designed for injection moulding applications. Very high renewable content is ensured by wood fibres and renewable polypropylene. Wood fibres significantly increase stiffness and strength of polypropylene.

**Applications** UPM Formi EcoAce biocomposite material can be used in injection moulding applications instead of polypropylene, filled polypropylene or several other plastics.

**Environment** UPM Formi EcoAce is manufactured from softwood fibers and wood waste derived ISCC-certified polypropylene, which are together reducing the usage of fossil based plastics. Material is fully recyclable or can be burned for energy.

Physical and mechanical properties	Property	Test method	WB 40	WB 50	WB 60
	Density, g/cm <sup>3</sup>	ISO 1183	1.02	1.05	1.08
Tensile strength, 50mm/min, N/mm <sup>2</sup>	ISO 527-2	43	46	50	
Tensile modulus, 50mm/min, N/mm <sup>2</sup>	ISO 527-2	3550	3750	4470	
Elongation at break, 50mm/min, %	ISO 527-2	2.5	2.0	1.8	
Charpy impact strength, unnotched +23 °C, kJ/m <sup>2</sup>	ISO 179-2/1eU	16	16	16	
Dielectric constant (Dk)		2.6	2.8	2.9	
Loss tangent, tan (δ)		0.017	0.024	0.027	
Wood fibre content, weight %		40	50	60	

**Pretreatment** It is highly recommended to dry granulates before injection moulding. Recommended drying temperature and time is 115 °C and 3 hours in a desiccant air dryer.

**Injection moulding** UPM Formi does not need special equipment for processing. Recommended processing parameters for typical injection moulding machine are:

Temperature profile from nozzle	190/185/180/175 °C
Injection pressure	<1200 bar
Mould temperature	+60 - +120 °C
Injection speed	As high as possible

**Safety** Maximum recommended processing temperature is 200 °C. Overheating may cause risk for thermal degradation. Auto-ignition of UPM Formi material is possible after purging the injection moulding machine.

**Storage** UPM Formi granulates should be protected from UV-light and stored in closed packages in dry conditions at temperature below 50 °C. Air humidity can increase moisture content of the material and have negative effects on the end product properties.

All information is based on our knowledge and experience. This information has as sole purpose to act as a manual for safe handling, use, processing, transport, storage, removal and release and cannot be used as guarantee or identification of quality. You are required to comply with all rules, regulations, and guidelines applicable to the use of the UPM Formi material. In all cases, you are fully responsible for any claims or liabilities resulting from your handling, use, processing, transport, storage, removal and release of the UPM Formi material.