

Technical Data Sheet

CEBICO TPU20 22RID016



Description

CEBICO TPU20 22RID016 is a special grade natural fibre composite developed to meet demand for more environmentally friendly alternative for standard TPU. The main polymer is thermoplastic polyurethane, where 20% of the polymer is substituted with TMP, or thermomechanical pulp. The composite is balanced and processed for improved mechanical performance. The composite is dark brown by nature and has moderate-high number of visible agglomerates. CEBICO TPU20 22RID016 is a glossy and soft material, with high strain and toughness.

Other product names/terms

Bio Composite (BC), Natural Fibre Composite (NFC)

Key features

High strength, soft and flexible, low shrinkage, good scratch resistance, very tough, low carbon footprint, glossy, visible agglomerates.

Typical characteristics

Physical properties	Value	Unit	Test method
Specific density	1200	kg/m ³	ISO 1183
Shrinkage	0.8	%	ISO 294
Moisture content	< 1.4	%	Saugbrugs
Fibre content	20	%	Saugbrugs
Melt flow rate	2.2	g/10 min	ISO 1133, 21.6 kg @190 °C

Mechanical property	Value	Unit	Test method
Tensile modulus	600	MPa	ISO 527-2
Tensile stress at yield	23	MPa	ISO 527-2
Tensile strain at yield	20	%	ISO 527-2
Tensile stress at break	23	MPa	ISO 527-2
Tensile strain at break	20	%	ISO 527-2
Flexural modulus	550	MPa	ISO 178
Flexural strength	18	MPa	ISO 178
Charpy impact strength	15.4	kJ/m ²	ISO 179-2, 1eA @ 23 °C
Hardness Shore D	61		ISO 868, initial
Hardness Shore D	53		ISO 868, @ 15 sec

Processing

Before use the material should be dried at 100 °C for minimum 2 hours. It is recommended to process the material at 190 °C or lower. It is important that the composite is not processed at temperatures above 190 °C. Injection speed and pressure should be at a moderate level to minimize generated shear heat in the material to maintain correct melt temperature. Processing above recommended temperature will affect negatively on mechanical properties and colour.

Chemical composition

Primary component in CEBICO TPU20 22RID016 is virgin thermoplastic polyurethane. 20% of the total weight is substituted with thermo-mechanical pulp. Dispersed into the polymer, the TMP reinforces the polymer matrix for improved mechanical properties and thermal stability.

Address: Norske Skog Saugbrugs Tistedalsgata 9-11 1772 Halden - Norway	Contact info: Tel.: + 47 69 17 40 00 Email: cebico@norskeskog.com	Doc: Version: Nov2022-1.0A File: CEBICO TPU20 22RID016 Technical Data Sheet
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Packaging

Big bags (< 1% m.c) or 25 kg bags (< 1% m.c), or in bulk.

Recycling

CEBICO TPU20 22RID016 can be grinded, melted and remoulded.

Environment

Comparing CEBICO TPU20 22RID016 to average virgin TPU, the carbon footprint is reduced by up to 20%. CEBICO TPU20 22RID016 can replace normal TPU as a more environmentally friendly alternative. The TMP fibres are produced from renewable and certificated raw materials and has very low carbon footprint additional to being processed using clean electric energy.

Contact us for more in-depth information about environmental impact of CEBICO natural fibre composites.

Storage

Avoid prolonged exposure to UV-light, extreme temperatures and high humidity. Store in ambient room temperature. Improper storage can have negative effects on physical, visual and mechanical properties.

Shelf life

Follow CEBICO storage instructions will maximize the shelf life of the material, maintain optimal properties and minimize degradation.

Disclaimer

The information in this document is provided in good faith and to the best of our knowledge accurate and reliable as of the date of publication. We do not assume any liability, direct or indirect with respect to shelf life, performance, suitability or fitness for intended use in any application. Each customer must determine the suitability of the material for their particular use through appropriate testing and analysis. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

Contact:

For any inquires, technical or sales, please contact by sending email to cebico@norskeskog.com

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