Polypropylene
PP4874

Description
PP4874 is a polypropylene compound intended for the solid insulation of data cables.

Applications
PP4874 is designed for high performance Unshielded Twisted Pair (UTP) data cables where short lay length and high twisting speed demand superior insulation hardness. The product exhibits high speed extrusion and provides process stability with regard to diameter and geometry, providing good conductor adhesion.

PP4874 is not intended as a telephone insulation for external applications. It is not intended for use in contact with petroleum jelly and has not been tested against the demanding high temperature (105°C) petroleum jelly ageing requirements typically specified for such cables

Specifications
PP4874 meets the following material classification:

ISO 1873-1, KGHN, 1605-D022/045

ASTM D 4101 – 11,PP0120B77000 E11

The following cable material standards are met by PP4874:

EN 50290-2-25 [1]

[1] Appropriate parts, for cold bend properties please contact your Borealis Technical Service Engineer.

Cables manufactured with PP4874 using sound extrusion practice normally comply with the following cable product standards:

EN 50288

IEC 61156

Physical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Density	912 kg/m³	ISO 1183
Melt Flow Rate (230 °C/2,16 kg)	2,8 g/10min	ISO 1133
Oxidation Induction Time (200 °C),	30 min	ISO 11357-6
Charpy Impact Strength, unnotched (-20 °C)	18,5 kJ/m²	ISO 179/1eU
Hardness, Shore D (1 s)	73	ISO 868

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Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
Dielectric constant (1 MHz) [1]	2,26	IEC 60250
Dissipation Factor (1 MHz) [1]	0,0002	IEC 60250

[1] Measured on moulded plaques.

Insulation Properties

Property	Typical Value Data should not be used for specification work	Test Method
Tensile strength [1]	55 MPa	IEC 60811-501
Tensile strain at break [1]	700 %	IEC 60811-501

[1] Measured on insulation; diameter Ø 0.94mm

Processing Techniques

As for all insulation products, the adoption of correct processing conditions is important to obtain the optimum physical and electrical properties of the insulated wire.

Conductor preheating is important to achieve the desired mechanical and electrical properties. Typical figures are given:

Conductor preheating:	130-150°C
Cooling water, first part of cooling trough:	40°C

Recommended minimum settings are below but die temperatures of up to 270°C can be used where appropriate:

Zone 1	190 °C
Zone 2	200 °C
Zone 3	210 °C
Zone 4	220 °C
Adapter	220 °C
Die	220 °C

Crosshead configuration tests have been completed using standard 4/6 crosshead tooling. The die bolt was released by one turn to slightly increase the volume of the crosshead. The use of a long format die (30mm) was found to give an improved surface compared to the more typical medium format (25mm). A slightly oversized die was found advantageous - 1,05 x insulation diameter.

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Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Please contact your local Borealis representative for such particulars.

Packaging

Package:	Bags Octabins

Storage

PP4874 The material in closed original packages should be stored indoors (10 - 30°C) in clean and dry environment. It is also recommended to ensure proper stock rotation by using first in - first out principle. Following above guidance the material and its packaging will not deteriorate within a period of up to 24 months after production.

Safety

The product is not classified as dangerous. Check and follow local codes and regulations! Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the product. For more information, contact your Borealis representative. The product is not classified as dangerous and is intended for industrial use only.

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