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BPD4720

Product Technical Information

BPD4720 is a natural high density polyethylene grade designed for the extrusion of jackets for power cables.

Benefits & Features

BPD4720 offers a unique balance of properties combining the following features:

- Excellent extrudability
- Outstanding stress-cracking resistance
- Good toughness and resistance to heat deformation
- Good abrasion resistance
- Low shrinkage

Applications

BPD4720 is well-suited to the extrusion of colorable jackets for power cables.

BPD4720 is formulated with an antioxidant package that delivers excellent ageing properties. However, it does not contain light stabilizer, and an anti-UV additive package needs to be added to lead to a complete outdoor weatherability.

We recommend that you consult your INEOS technical representative for further advice on the use of **BPD4720**.

Specifications

BPD4720 meets the following raw material specifications:

- ISO1872 – PE KHN 45 D-006
- ASTM D 1248 – type III, Class A, Category 4, Grade E10, J5

Compliance to Regulations

When adequately processed with relevant additive package, **BPD4720** will allow producing a jacket meeting the following industry cable specifications:

- IEC 60502-2, Class ST7

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Properties	Conditions	Test Methods	Values	Units
Physical				
Melt Flow Rate	190°C/5.0 kg	ISO 1133-1	2.0	g/10min
Melt Flow Rate	190°C/ 2.16 kg	ISO 1133-1	0.60	g/10 min
Density		ISO 1183-1 & ISO 1872-1	945	kg/m^3
Vicat Softening Temperature	10 N	ISO 306 - A50	119	°C
Shore D hardness, 1 s		ISO 868	62	-
Shore D hardness, 15 s		ISO 868	61	-
Tensile Modulus	23°C, 1 mm/min	ISO 527-1,-2	1000	MPa
Tensile Strength at Yield	23°C, 50 mm/min	ISO 527-1,-2	22	MPa
Tensile Strength at Break	23°C, 50 mm/min	ISO 527-1,-2	27	MPa
Elongation at Break	23°C, 50 mm/min	ISO 527-1,-2	700	%
Retention of mechanical properties after ageing in oven	10 days/100°C	IEC 811-1-2	>75	%
BTT Environmental Stress Cracking Resistance, F_0	10% Igepal, 50°C	ASTM 1693	> 1000	h
Full Notch Creep Test	2% Arkopal N100, 4 MPa, 80°C	ISO 16770	> 40	h
Electrical				
Volume resistivity	50 Hz	ASTM D 257	> 10^{13}	Ω.m
Dielectric constant	1 MHz, 23°C	ASTM D 1531	2.6	-

Data should not be used for specification work

Processing guidelines

The good processing characteristics of **BPD4720** allow wide latitude of both equipment and process conditions. It is recommended to set an extrusion temperature profile resulting in a melt temperature in the range of 210 - 230°C. Processing above 230°C should be avoided to prevent heat degradation.

BPD4720 in its original packaging is ready for use, but for outdoor applications an anti-UV package should be added during extrusion.
Extreme temperature changes and a high percentage of atmospheric humidity can lead to condensation within the packaging. Pre-drying of the material is advisable in this case.

On a commercial line 150mm - 20 L/D a typical temperature profile would be:

- Barrel: 180 - 190 - 200 - 200 °C
- Head: 210 °C
- Die: 210°C

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Storage

BPD4720 should be stored in a dry and dust free environment at temperature below 50°C. Exposure to direct sunlight should be avoided as this may lead to product deterioration. It is advised to process the product within maximum one year after delivery.