Manufacturer website: https://www.ineos.com/businesses/ineos-olefins-polymers/

BPD3801

Product Technical Information

BPD3801 is a polyethylene copolymer containing hexene-1 as the comonomer produced with a metallocene catalyst. **BPD3801** represents an interesting balance of properties for Wire & Cable applications.
When compounded with suitable additives, is designed for use in silane crosslinking processes (Monosil®). It has been developed for LV insulation or jacketing applications.

Benefits and Features

- Suitable Melt Index and Density for Wire & Cable applications
- High X-link efficiency
- Higher output and productivity
- High flexibility
- Very good Mechanical Properties and Stress Cracking Resistance
- Very good smoothness

Packaging

BPD3801 is sold in pellet form and is available in the following packages: 25 kg bags, 1.1 ton holbins or bulk tankers.

Processing Data

BPD3801 is a LLDPE base resin. A suitable antioxidant package should therefore be added to the product in order to meet heat ageing requirements.
The adoption of correct extrusion conditions and silane addition levels are of paramount importance for BPD3801.
Since LLDPE compounds exhibit different extrusion performance from conventional materials, modifying some extrusion parameters may be necessary to achieve optimum throughput rates.
BPD3801 can be run on existing Monosil equipment.
Correctly extruded insulations have a smooth surface with minimal gel defects. BPD3801 must be extruded in conjunction with 1.0 – 1.2 % of vinyl trimethoxysilane, a suitable peroxide and a crosslinking catalyst. Commercial mixtures can be used for this purpose.
Typical melt temperature to give satisfactory extrudates will be in the region of 225-235 °C
On a commercial line 150mm - 30 L/D a typical temperature profile would be:
Barrel: 150-160-170-180-190-200-210°C Head: 210-220-230°C Die: 270°C
Screw cooling: 80°C

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Properties:

Properties		Test Method	Value	Units
Physical				
Melt flow rate	2.16 kg load	ISO 1133-1	5.5	g/10min
Conventional density		ISO 1872-1	916	kg/m³
Electrical				
Volume Resistivity		ASTM D 257	$>10^{16}$	ohm.cm
Dielectric constant	@ 50 Hz	ASTM D 150-2.2	2.3	
Dissipation factor	@ 50 Hz	ASTM D 150	< 0.004	-

***** Data should not be used for specification work

Physical properties of grafted BPD3801

BPD3801 when grafted in the laboratory with 1.1 % of a suitable silane/peroxide mixture and 0.05 % of a tin condensation catalyst, typically gives the following results on a 1.5 mm² cable after curing 4h in water at 80 °C.

Properties		Test Method	Value	Units
Tensile strength	@ break	IEC 811-1-1	20	MPa
Elongation	@ break	IEC 811-1-1	>300	%
Hot set test		IEC 811-2-1	60	%

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Storage

The product 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.

Regulatory Information

The product and uses described herein may require global product registrations and notifications for chemical inventory listings, or for use in food contact or medical devices. For further information, send an email to psnohreg@ineos.com. Unless specifically indicated, the products mentioned herein are not suitable for applications in the medical or pharmaceutical sector.

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