PRODUCT DATA SHEET

HIGH DENSITY POLYETHYLENE

6B Black

HIGH DENSITY POLYETHYLENE FOR JACKETING OPTICAL FIBER CABLES

DESCRIPTION

The material covered by this specification should conform to ASTM D-1248 type III; class C, category 4 or 5, grade E8 latest edition. The material should contain a non-staining antioxidant system.

The melt flow rate for processed material in cable should not show a maximum 50% increase from raw material. The material should be stabilized against thermal and shear degradation and ensure long-term aging properties. The material furnished under this specification shall be free from dust, dirt, metallic particles, chaff streamers and all other foreign materials and as uniform in appearance as good commercial practice will permit. Pellets furnished shall be approximately 3mm or less on all dimensions.

APPLICATIONS

HDPE (black) 6B is a high-density polyethylene jacketing compound in black, developed using CNB's proprietary bimodal process technology. This innovative process enables the creation of polymers with properties that exceed traditional melt flow rate and density limits, resulting in enhanced processability, minimized shrinkage, excellent mechanical strength, and high resistance to environmental stress cracking (ESCR). The compound includes 2.5% uniformly distributed carbon black to ensure exceptional protection against UV radiation and weathering.

Suitable for use as a jacketing material in optical fiber cables.

FEATURES

Superior processability	Excellent ESCR	Outstanding UV resistance
Termite resistance	Abrasion & scratch resistance	Low shrinkage
Low water permeability	Excellent surface hardness	Low heat deformation

PROPERTIES

Property	Test Method	Unit	Value
Melt index	ASTM D 1238	g/10 min	max 1
Density at 23°C	ASTM D 792	g/cm^3	0.941-0.959
Ultimate tensile strength	ASTM D 638	Mpa	min 19
Elongation at break	ASTM D 638	%	min 400
Retaining of mechanical properties after aging 48 hours at 100°C	ASTM D 638	%	min 90
Brittleness temperature	ASTM D 746	°C	max – 75
Environmental stress –crack resistance 100% "Igepal" solvent f20 condition B	ASTM D 1693	Hours	≥ 48
Thermal stress cracking at 100°C	ASTM D 2951	Hours	≥ 96
Carbon black content	ASTM D 1603	%	2.5±0.5
Carbon particle size prior to dispersion	ASTM D 1921	Nanometers	≤ 20
Carbon black absorption coefficient	ASTM D 3349	K(absorbance/m)	Min 400
Carbon black dispersion	823A or 823B of BS 2782	---	Conform to BS 6234

PROCESSING CONDITIONS

HDPE (black) 6B delivers a high-quality surface finish and supports a wide processing window. It is compatible with most extrusion equipment typically used for PVC or PE processing. To reduce shrink-back, it is highly recommended to use gradient cooling, starting with hot water at a minimum temperature of 60°C in the initial section of the cooling trough. If preheating or drying is applied, the maximum allowable temperature should not exceed 90°C.

STORAGE

Packaging: Available in bulk, octabins, and bags. HDPE (black) 6B has a shelf life of 24 months from the date of manufacture, provided it is stored in its original, unopened packaging under clean, dry conditions at temperatures between 10°C and 30°C (50°F to 85°F). Storage conditions can impact the material's quality and performance—extreme environments may degrade its properties. To maintain optimal quality, it is advisable to follow a First-In, First-Out (FIFO) stock rotation system.

SAFETY

CNB is dedicated to reducing the environmental impact of its products. We embrace Design for Circularity (DfC) and Design for Recycling (DfR) to help conserve natural resources and minimize environmental impact throughout the entire product lifecycle—from production and usage to end-of-life. DfR ensures that our materials are designed for effective recyclability while maintaining high performance and efficiency.

For more details on our sustainability initiatives and approach to Design for Recycling, please visit our website: www.cnbpetro.com .

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