BLS POLYMERS LTD.
Excellence in Compounding

TECHNICAL DATA SHEET

(Rev. No. 01, Date: 01.02.2025)

BLS MD 4507

BLACK MEDIUM DENSITY POLYETHYLENE COMPOUND

FOR POWER CABLES

DESCRIPTION

BLS Polymers Ltd. introduces a sophisticated compound for jacketing of MV, HV, EHV Power Cables – **BLS MD 4507,** a bimodal MDPE based Compound totally protected against Ultraviolet degradation and thermal degradation.

This compound is manufactured from MDPE resin, UV stabilizer and RoHS compliant that provides a balance of toughness, low shrinkage, high moisture barrier, high abrasion resistance, excellent weathering resistance, excellent chemical resistance, high ESCR, heat deformation resistance, low friction for easy pulling during installation, easy processability than conventional compounds. This compound meets the stringent quality requirements for Power Cables.

SPECIFICATIONS COMPLYING

BLS MD 4507 meets the requirements of raw material for manufacturing of Cables as per-
ASTM D 1248 Type II, Class C, Category 4, Grade E9, E8, J4 ISO 1872-PE, KCHL, 33 D-006, EN 50290-2-24 BS 6234: Type H03, TS2, IEC 60502, Type ST3, ST7, IEC 60840, Type ST3, ST7.

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNIT	TYPICAL VALUE
Density	ASTM D 792	gm / cc	0.945±0.003
Melt Flow Index (190^{0}C,2.16 Kg Load)	ASTM D 1238	gm / 10 min	0.7±0.1
Tensile Strength at Break (50mm/min)	ASTM D 638	Kg / cm^2	280
Elongation at Break (50mm/min)	ASTM D 638	%	950
Oven Ageing at 110^{0}C/ 10 days			
Elongation at Break	ASTM D 638	%	>300
Thermal Stress Cracking Resistance	ASTM D 2951	Hours	>96
Oxidative-induction time (OIT)	ASTM D 3895	Minutes	>100
ESCR (50°C,10% Igepal, F0,1000 hrs.)	ASTM D-1693	-	No Cracks observed
Moisture Content	ASTM D-817	%	0.02
Carbon Black Content	ASTM D 1603	%	2.5
Carbon black dispersion, Grading	ISO18553	-	2
Dissipation factor tan d	ASTM D 150	-	0.0003
Di-electric Constant	ASTM D 150	-	2.4
Volume Resistivity	ASTM D 257	ohm-cm	2.5 X 10^16
Dielectric Strength	ASTM D 149	kV/mm	>30
Hardness (1 sec)	ASTM D 2240	Shore D	56±1
Pressure Test at High temperature (115°C 6h)	IEC 60811-3-1	%	<10
Brittleness temperature (<-76°C)	ASTM D 746	-	Passes
Absorption Coefficient (at 375 nm)	ASTM D 3349	-	>400

*The typical values reported in the above table have been obtained from measurements made on extruded samples or pressed plates.

- Termite repellent and Rodent repellent version is also available on request

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PROCESSING GUIDELINES

Recommended Processing Condition **BLS MD 4507** provides excellent surface finish and high output rates over a broad range of conditions. For extrusion standard PE-screws are recommended, but screws designed for PVC also can be used with good result.

We recommend that material is pre-dried at 85±5^{0}C for 2-3 hours for best performance.

Temperature profile

Zone 1	Zone 2	Zone 3	Zone 4	Flange	Head	Die
170±10	180±10	180±10	200±10	200±10	200±10	200±10

To minimize shrink back hot cooling water, min 60^{0}C in the first cooling trough is strongly recommended. BLS MD 4507 can be processed using either tube or pressure tooling. With tube tooling, a drawdown ratio of at least 3:1 to 4:1 is recommended. Higher drawdown ratios will increase jacket tightness. However, actual temperature profile will depend upon the screw compression ratio, L/D ratio, type of extrusion sleeve or pressure.

PACKING

BLS MD 4507 is available in 25 kg bags, 700 kg Jumbo bags in pallet, 25 kg bags collated in a wooden pallet and stretch wrapped, 700 kg Octabin.

STORAGE & SELF LIFE

BLS MD 4507 must be stored in ambient temperature (not exceeding 50^{0}C) in a shaded area in sealed and intact bags to avoid exposure to sunlight and moisture. Long storing may affect the property of the compound and for this reason should be used within 12 months from the compounding date. It is better to measure the moisture and dry the material using dehumidifier dryer before use after long storage.

SAFETY

The product is not classified as a hazardous preparation. Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required.

Please refer to our MSDS for details on various aspects of safety, recovery, disposal and handling of the product.

RECYCLING

The product is suitable for recycling using various methods of shredding and cleaning in-house production waste should be kept clean to facilitate direct recycling.