PRODUCT DATA SHEET

POLYETHYLENE
Borstar® LE8707

BLACK BIMODAL LINEAR LOW DENSITY POLYETHYLENE JACKETING COMPOUND FOR ENERGY AND COMMUNICATION CABLES

DESCRIPTION

Borstar LE8707 is a black, linear low-density polyethylene (LLDPE) jacketing compound, which is produced with the Borealis proprietary Borstar bimodal process technology.

Borstar technology allows the manufacturing of polymers outside the traditional MFR and density range making it possible to optimize processability, reduce shrinkage and yet with excellent physical toughness and environmental stress crack resistance (ESCR) properties.

Borstar LE8707 contains 2.6% well-dispersed carbon black of nominal 20 nm particle size in order to ensure excellent weathering resistance.

APPLICATIONS

Borstar LE8707 is intended for jacketing of power and communication cables.

SPECIFICATIONS

Borstar LE8707 meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

ISO 1872-PE, KCHL, 18 D-006	ASTM D 1248, Type I, Class C, Category 4, Grade J3, E4, E5, W2-4
EN 50290-2-24	HD 620 S1, Part 1, table 4B, DMP 5,9,10,12,14,15,17
ICEA S-94-649	ICEA S-108-720
IEC 60502 ST3, ST7	HD 603 S1; A3: DMP5, DMP7, DMP8
IEC 60840 ST3, ST7	IEC 62067 ST3, ST7
IEC 60708	BS6234 Type 03C ; TS2
HD 626 TIP 3, TIP 4	HD 632 S1: ST3, ST7

SPECIAL FEATURES

Borstar LE8707 consists of specially selected components to offer:

Superior processability	Excellent environmental stress cracking resistance (ESCR)
Rather low heat deformation	Good petroleum-jelly resistance
Low coefficient of friction	Outstanding UV resistance
Low water permeability	Low shrinkage

PHYSICAL PROPERTIES

Property	Typical Value*	Test Method
Density (Base Resin)	923kg/m³	ISO 1872-2/ISO 1183
Density (Compound)	936kg/m³	ISO 1872-2/ISO 1183
Melt Flow Rate (190°C/2.16kg)	0.85g/10min	ISO 1133
Melt Flow Rate (190°C/5.0kg)	3g/10min	ISO 1133

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Tensile Strength at break (50mm/min)	> 22MPa	ASTM D 638/Type 4
Elongation at Break (50mm/min)	> 600%	ASTM D 638/Type 4
ESCR (50ºC,10% Igepal, F0 = no crack)	5000h	IEC 60811-4-1
Durometer Hardness (1/3/15 s)	55/53/51 Shore D	ISO 868/DIN 53505
Brittleness Temperature	< -76°C	ASTM D 746
Flexural Modulus	400MPa	ASTM D 790
Carbon black dispersion, Grading	2	ISO18553
Carbon black dispersion, Appearance	A2	ISO18553
Absorption Coefficient (at 375 nm)	440	ASTM D 3349

* Data should not be used for specification work

ELECTRICAL PROPERTIES

Property	**Typical Value***	**Test Method**
Dielectric constant (1MHz)	2.4	ASTM-D 150
Dissipation factor (1MHz)	0.0003	ASTM-D 150
Dielectric Strength	> 20kV/mm	ASTM-D 149

* Data should not be used for specification work

PROCESSING TECHNIQUES

Borstar LE8707 provides excellent surface finish and high output rates over a broad range of conditions. For extrusion standard PE-screws are recommended, but also screws designed for PVC can be used with good result.
A suggested temperature profile is:
Feed pocket : cooled water
Feed section : 150 °C
Metering Section : 170 °C
Head and die : 190 °C
If material preheating/pre-drying is used maximum recommended temperature is 90ºC.

To minimize shrink back hot cooling water, min 60^0C in the first cooling trough is strongly recommended.
Borstar LE8707 can be processed using either tube or pressure tooling. With tube tooling, a drawdown ratio of at least 3:1 is recommended. Higher drawdown ratios will increase jacket tightness.

PACKAGING

Form: Granules
Package: 25 kg bags (1.375 kg/pallet)
650 kg big bags
1100 kg big bags

STORAGE

The material should be stored indoors (10 - 30°C) in closed original packages in clean and dry environment. It is also recommended to ensure proper stock rotation by using first in - first out principle. Following above-mentioned conditions the material can safely be stored for a period of up to 12 months after arrival.

SAFETY

Borstar LE8707 is not classified as dangerous and is intended for industrial use only.

The products are supplied in form of free-flowing granules of approximately 3 - 4 mm sizes and can be readily handled with commercially available equipment. Handling and transport of the products may generate some dust and fines, which constitute a potential hazard for dust explosion. All metal parts in the system should therefore be properly grounded. Properly designed equipment and good housekeeping will reduce the risk. Check and follow local codes and regulations!

Inhalation of any type of dust should be avoided as it may cause irritation of the respiratory system.

The products are intended for industrial use only. A Safety Information Sheet is available on request. Please contact your Borouge representative for more details on various aspects of safety, recovery and disposal of the product.

RECYCLING

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

RELATED DOCUMENTS

The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.
Safety Data Sheet
Statement on chemicals, regulations and standards

STANDARDS

Borouge is certified to various ISO standards, please refer to Borouge.com for more information.

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