

01 August 2008

## Borstar<sup>®</sup> HE3366

### NATURAL BIMODAL HD POLYETHYLENE COMPOUND FOR SOLID INSULATION FOR TELEPHONE SINGLES

#### DESCRIPTION

**Borstar HE3366** is a high density insulation compound designed for high extrusion speeds.

**Borstar HE3366** is produced with a Borouge Borstar technology process and is characterised by:

- \* Good processability
- \* High tensile strength and elongation
- \* Excellent heat-ageing performance
- \* Good petroleum jelly resistance
- \* Very stable against environmental stress-cracking (ESCR)

The excellent properties of **Borstar HE3366** will give advantages in manufacturing, installation and performance of telephone cables.

**Borstar HE3366** contains a special metal deactivator to ensure excellent long-term heat stability.

#### APPLICATIONS

**Borstar HE3366** is intended for insulation in dry core and petroleum jelly filled cables. It is also suitable as outer skin in “foam-skin” constructions.

#### SPECIFICATIONS

Borstar HE3366 meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

- ASTM D 1248 Type III, Class A, Category 4, Grade E8, E9
- BS 6234: Type H03
- EN 50288
- EN 50290-2-23
- IEC 60708
- ISO 1872-PE, KHN, 50-D006
- NF C 32-060
- US MIL SPEC LP 390 C, Type II, Class H, Grade 1, Category 4

| PHYSICAL PROPERTIES                  |                  | Typical Value* | Unit              | Test Method           |
|--------------------------------------|------------------|----------------|-------------------|-----------------------|
| Density, Base Resin                  |                  | 952            | kg/m <sup>3</sup> | ISO 1872-2/ISO 1183-D |
| Melt Flow Rate                       | (190°C. 2.16 kg) | 0.70           | g/10 min          | ISO 1133              |
| Melt Flow Rate                       | (190°C. 5.0 kg)  |                | g/10 min          | ISO 1133              |
| Tensile Strength                     | (50 mm/min)      | >20            | MPa               | ISO 527               |
| Elongation                           | (50 mm/min)      | >600           | %                 | ISO 527               |
| ESCR (50°C, 10% Igepal), (no crack)  |                  | >500           | h                 | IEC 60811-4-1/B       |
| Oxygen Induction Time, 200°C, Al-pan | (115°C, 6 h)     | >100           | min               | IEC 60811-4-2/B       |
| Flexural Modulus                     |                  | 400            | MPa               | ASTM D 790            |
| Petroleum Jelly Absorption           |                  | 7              | %                 | IEC 60811-4-2         |
| Durometer Hardness                   | (1 sec)          | 55             | Shore D           | ISO 868               |
| Brittleness Temperature              |                  | <-76           | °C                | ASTM D 746            |

\* Data should not be used for specification work

| ELECTRICAL PROPERTIES |         | Typical Value*         | Unit  | Test Method |
|-----------------------|---------|------------------------|-------|-------------|
| Dielectric Constant   | (1 MHz) | 2.34                   | -     | IEC 60250   |
| Dissipation Factor    | (1 MHz) | 0.000                  | -     | IEC 60250   |
| DC Volume Resistivity |         | 05<br>10 <sup>16</sup> | Ω cm  | IEC 60093   |
| Dielectric Strength   |         | 22                     | kV/mm | IEC 60243   |

\* Data should not be used for specification work

## PROCESSING GUIDELINES

**Borstar HE3366** provides very good surface finish and high output rates over a broad range of conditions. For normal extrusion equipments and applications we suggest a melt temperature and conductor preheating according to the table below:

Conductor preheating temperature: 90-120°C  
 Melt temperature: 200-230°C  
 Cooling water temperature of the first part of the cooling trough: 50° C

Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Please contact your local Borouge representative for such particulars.

#### DELIVERY

Form: Granules  
Package: 25 kg bags - 1.375 ton loads  
650 kg bigbags

#### SAFETY

**Borstar HE3366** is not classified as a dangerous preparation.

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 Data 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.

#### Disclaimer

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