

 **Polyethylene**  
**HE4872****Description****HE4872**

It is a HDPE compound for solid insulation of symmetric data cable at high extrusion speed.

**Applications**

**HE4872** is intended for:

High frequency data transmission cables

Outer skin of foam-skin constructions

NOTE: If using HE4872 as telephone single insulation, especially in petroleum jelly filled cables, addition of extra stabilization may be needed to ensure long-term heat stability.

**Specifications**

**HE4872** meets the following material classification:

ISO 1872-PE, KGHN, 45-D006

ASTM D 1248 Type III, Class A, Category 4, Grade E8, E9

The following cable material standards are met by HE4872:

EN 50290-2-23 <sup>1</sup>

<sup>1</sup> Appropriate parts

Cables manufactured with HE4872 using sound extrusion practice normally comply with the following cable product standards:

IEC 61156

EN 50288

**Special Features**

**HE4872** consists of specially selected components to offer:

Good conductor adhesion

Very good flow behaviour

Low die head pressure

Excellent surface finish

High output



# Polyethylene HE4872

## Physical Properties

| Property                                                       | Typical Value         | Test Method          |
|----------------------------------------------------------------|-----------------------|----------------------|
| Data should not be used for specification work                 |                       |                      |
| Density                                                        | 945 kg/m <sup>3</sup> | ISO 1183-1, Method A |
| Melt Flow Rate (190 °C/2,16 kg)                                | 0,7 g/10min           | ISO 1133-1, Method A |
| Tensile Strain at Break                                        | > 600 %               | ISO 527-2            |
| Tensile Strength                                               | 20 MPa                | ISO 527-2            |
| Oxidation Induction Time (200 °C),                             | > 60 min              | ISO 11357-6          |
| Brittleness temperature                                        | < -76 °C              | ASTM D 746           |
| Environmental Stress Crack Resistance (50 °C, Igepal 10 % F20) | > 80 h                | IEC 60811-406        |
| Hardness, Shore D (1 s)                                        | 58                    | ISO 868              |

## Electrical Properties

| Property                                       | Typical Value | Test Method |
|------------------------------------------------|---------------|-------------|
| Data should not be used for specification work |               |             |
| Dielectric constant (1 MHz)                    | 2,33          | IEC 60250   |
| DC Volume Resistivity                          | 10 PΩcm       | IEC 60093   |
| Dissipation Factor (1 MHz)                     | 0,00007       | IEC 60250   |

## Processing Techniques

The actual conditions will depend on the type of equipment used.

HE4872 can be processed using a wide range of process conditions at very high line speeds (typically up to 2400 m/min).

For normal extrusion equipments and applications, we suggest a melt and conductor preheating temperatures as outlined below. Heated water (up to 50°C) in the first cooling trough has been found beneficial to improve conductor adhesion.

### Tooling

Pressure tooling is invariably required. Typically "on size" die diameters are used.

### Extrusion

|                                  |              |
|----------------------------------|--------------|
| Barrel                           | 165 - 230 °C |
| Die head                         | 230 °C       |
| Melt temperature                 | 220 - 250 °C |
| Conductor preheating temperature | 110 - 120 °C |

Please contact your local Borealis representative for specific assistance.

 **Polyethylene**  
**HE4872****Packaging**

Package:           Bags  
                      Bulk  
                      Octabins

**Safety**

The product is not classified as dangerous. Check and follow local codes and regulations!

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the product. For more information, contact your Borealis representative.

**Disclaimer**

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