



Halogen-free, thermoplastic, highly flame retardant insulation and sheathing compound for low and medium voltage cables




| | | |
|--|---|---|
| <p>■ Compound class Insulation / Sheathing</p> <p>■ Standards VDE 0207 part 24 HM 2, HM 4 IEC 60092-360 SHF 1 DIN EN 50363-7 T16, T17</p> <p>■ Operating temperature [°C] -30 to 90</p> <p>■ Typical applications <i>Halogen-free, low smoke, thermoplastic, highly flame retardant compound for the insulation and sheathing of low and medium voltage cables in General Installation applications and shipboard.</i></p> | <p>■ Compound category TP</p> <p>BS 7655 section 6.1 LTS 1 - LTS 4 DIN VDE 0276-604 HM4 DIN EN 50363-8 TM7</p> <p>■ Oil resistance level ★</p> | <p>■ Flame retardant ATH</p> <p>CEI 20-11 M1 VDE 0250 part 215 HM5</p> |
|--|---|---|



Installation



Shipboard

| | | |
|--|---|--|
|  <p>Flame retardant</p> |  <p>Halogen-free</p> |  <p>Low smoke</p> |
|--|---|--|

PHYSICAL PROPERTIES

| Physical properties | Unit | Typical value | Test method |
|----------------------------------|-------------------|---------------|--------------------|
| Density* | g/cm ³ | 1,49 | DIN EN ISO 1183-1A |
| Hardness* | Shore D | 52 | DIN ISO 7619-1 |
| Melt Flow Index (150°C; 21,6kg) | g/10 min | 8,2 | DIN EN ISO 1133 |
| Mooney viscosity, ML (1+4) 140°C | MU | 40 | DIN ISO 289-1 |

MECHANICAL PROPERTIES **

| Thermoplastic | Unit | Typical value | Test method |
|--|-------------------|---------------|---------------|
| Tensile strength | N/mm ² | 10,5 | IEC 60811-501 |
| Elongation at break | % | 196 | IEC 60811-501 |
| Tear strength | N/mm | 7,6 | BS 6469:99.1 |
| After ageing in air oven 168h at 110°C | Unit | Typical value | Test method |
| Variation in tensile strength | % | -2,0 | IEC 60811-401 |
| Variation in elongation at break | % | -9,7 | IEC 60811-401 |

THERMAL PROPERTIES **

| ■ Heat tests | Unit | Typical value | Test method |
|---|------|---------------|---------------|
| Hot pressure test: Penetration 6h at 90°C | % | 32 | IEC 60811-508 |

RESISTANCE **

| ■ IRM 902 4h at 70°C | Unit | Typical value | Test method |
|----------------------------------|------|---------------|---------------|
| Variation in tensile strength | % | -6,1 | IEC 60811-404 |
| Variation in elongation at break | % | 6,4 | IEC 60811-404 |
| Variation in weight | % | 6,0 | IEC 60811-404 |
| ■ Water purified 168h at 70°C | Unit | Typical value | Test method |
| Variation in tensile strength | % | -8,4 | IEC 60811-404 |
| Variation in elongation at break | % | -26,7 | IEC 60811-404 |
| Variation in weight | % | 1,0 | IEC 60811-404 |

BURNING PROPERTIES *

| ■ Main burning properties | Unit | Typical value | Test method |
|---------------------------|-------|---------------|---------------|
| LOI * | % | 38 | ASTM D 2863 A |
| ■ Acid gas emission | Unit | Typical value | Test method |
| Corrosivity: pH (min.) | - | ≥ 4,5 | IEC 60754-2 |
| Conductivity (max.) | μS/mm | ≤ 10 | IEC 60754-2 |

* pressed plaques, 155°C / 5 min.

** extruded tapes

PROCESSING GUIDE

■ **Extruder Type**

Standard extruders for elastomeric or thermoplastic processing

■ **Screw configuration**

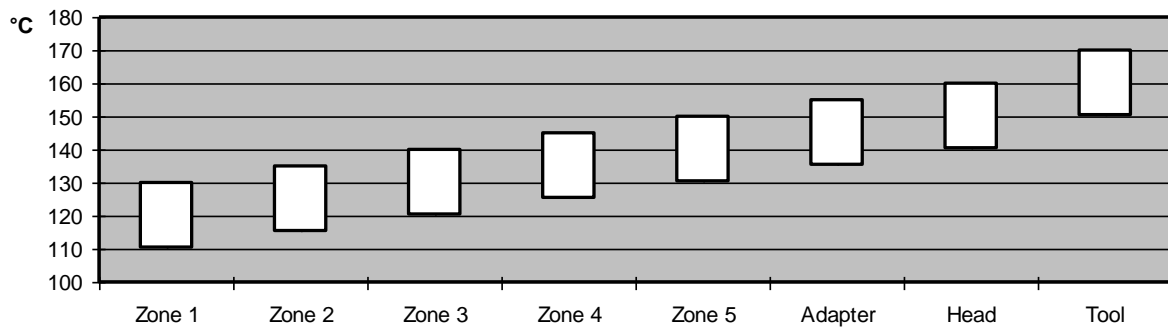
Low compression screw with L/D of 20 to 25 and compression ratio of 1:1.2

■ **Tooling**

For insulation pressure tools, for jacketing tube tools are recommended.
Note: Pressure Tooling may have an effect on low temperature flexibility.

■ **Temperature profile extruder**

The profile shown below may vary slightly depending on extruder type, head design & output.



■ **Maximum mass temperature**

165 – 175°C

■ **Drying**

Not necessary if the compound has been stored in original packing under cool (max. 30°C) and dry conditions. Mecoline compounds used from open packing require pre-drying during 4–6 hours at 60–70°C.

STORAGE INFORMATION

■ **Form & packaging**

Pellets in sizes 2.8mm & 5.5mm
Moisture-resistant bags (25kg) & octabins (alu-innerliner, max. 1250kg)

■ **Shelf life**

1 year after production

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