





















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

<p>■ <b>Compound class</b> Sheathing</p> <p>■ <b>Standards</b> DIN EN 50363-8 TM7 IEC 60092-360 SHF 1 UL 1277 Oil Res I</p> <p>■ <b>Operating temperature [C°]</b> -70 to 105</p>	<p>■ <b>Compound category</b> <b>TP</b></p> <p>DIN VDE 0276-604 HM4 VDE 0207 part 24 HM2, HM4 UL 1277 Oil Res II</p> <p>■ <b>Oil resistance level</b> ★★★★★</p>	<p>■ <b>Flame retardant</b> ATH</p> <p>DIN VDE 0281 part 14 TM7 VDE 0250 part 215 HM5 IEC 60502-1 ST8</p>						
<p>■ <b>Typical applications</b> <i>Halogen-free, low smoke, thermoplastic, highly oil and extra fuel resistant, flame retardant compound for the sheathing of low and medium voltage cables for moving applications. (e. g. Green Energy/Offshore)</i></p>								
 Shipboard	 Green Energy							
<p>■ <b>Features</b></p> <table border="0"> <tr> <td> Flame retardant</td> <td> Halogen-free</td> <td> Low smoke</td> </tr> <tr> <td> Flexible</td> <td> Flexible at low temperatures</td> <td> Oil resistant</td> </tr> </table>			 Flame retardant	 Halogen-free	 Low smoke	 Flexible	 Flexible at low temperatures	 Oil resistant
 Flame retardant	 Halogen-free	 Low smoke						
 Flexible	 Flexible at low temperatures	 Oil resistant						

## PHYSICAL PROPERTIES

Physical properties	Unit	Typical value	Test method
Density*	g/cm <sup>3</sup>	<b>1,63</b>	DIN EN ISO 1183-1A
Hardness*	Shore A	<b>87</b>	DIN ISO 7619-1
Mooney viscosity, ML (1+4) 160°C	MU	<b>62</b>	DIN 53 523
Water absorption **	Unit	Typical value	Test method
Water absorption after 24h at 90°C	mg/cm <sup>2</sup>	<b>1,40</b>	IEC 60811-402
Water absorption after 240h at 70°C	mg/cm <sup>2</sup>	<b>1,21</b>	IEC 60811-402

## MECHANICAL PROPERTIES

Thermoplastic	Unit	Typical value	Test method
Tensile strength **	N/mm <sup>2</sup>	<b>11,2</b>	IEC 60811-501
Elongation at break **	%	<b>305</b>	IEC 60811-501
Pulley flexing test	Cycles	<b>&gt;30.000</b>	EN 50 396 cl. 6.2

■ After ageing in air oven 168h at 136°C **	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-10,7</b>	IEC 60811-401
Variation in elongation at break	%	<b>-2,0</b>	IEC 60811-401

## THERMAL PROPERTIES \*\*

■ Low temperature tests	Unit	Typical value	Test method
Cold bend test at -40°C	-	<b>No cracks</b>	IEC 60811-504
Brittleness temperature	°C	<b>-70</b>	ASTM D 746
■ Heat tests	Unit	Typical value	Test method
Hot pressure test: penetration 6h at 90°C	%	<b>24</b>	IEC 60811-508
Hot pressure test: penetration 6h at 100°C	%	<b>24</b>	IEC 60811-508
Hot pressure test: penetration 6h at 120°C		<b>27</b>	IEC 60811-508
Heat shock 1h at 150°C	%	<b>Pass</b>	IEC 60811-509

## RESISTANCE \*\*

■ Fluid IRM 902 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-5,4</b>	IEC 60811-404
Variation in elongation at break	%	<b>-3,0</b>	IEC 60811-404
Variation in weight	%	<b>+9,0</b>	IEC 60811-404
■ Fluid IRM 902 100h at 150°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-12,5</b>	IEC 60811-404
Variation in elongation at break	%	<b>+5,6</b>	IEC 60811-404
Variation in weight	%	<b>+19,0</b>	IEC 60811-404
■ Fluid IRM 902 1440h at 80°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-8,0</b>	IEC 60811-404
Variation in elongation at break	%	<b>-5,6</b>	IEC 60811-404
Variation in weight	%	<b>7,0</b>	IEC 60811-404
■ Fluid IRM 903 168h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-10,7</b>	IEC 60811-404
Variation in elongation at break	%	<b>-14,1</b>	IEC 60811-404
Variation in weight	%	<b>+13,0</b>	IEC 60811-404
■ Diesel 24h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-11,6</b>	IEC 60811-404
Variation in elongation at break	%	<b>-13,8</b>	IEC 60811-404
Variation in weight	%	<b>+5,0</b>	IEC 60811-404
■ Diesel 24h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-39,3</b>	IEC 60811-404
Variation in elongation at break	%	<b>-14,6</b>	IEC 60811-404
Variation in weight	%	<b>19,0</b>	IEC 60811-404

■ Water purified 168h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-2,2</b>	IEC 60811-404
Variation in elongation at break	%	<b>-4,9</b>	IEC 60811-404
Variation in weight	%	<b>2,0</b>	IEC 60811-404
■ Ozone resistance	Unit	Typical value	Test method
Method A (250 ppm, 24h, 25°C)	%	<b>no cracks</b>	EN 50396

## BURNING PROPERTIES \*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	<b>38</b>	ASTM D 2863 A
Amount of halogen acid gas	mg/g	<b>&lt;5</b>	IEC 60754-1
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	<b>6,2</b>	IEC 60754-2
Conductivity (max.)	μS/mm	<b>0,6</b>	IEC 60754-2

\* pressed plaques, 165°C / 5 min.

\*\* extruded tapes

## PROCESSING GUIDE

■ **Extruder Type**

Standard extruders for elastomeric or thermoplastic processing.

■ **Screw configuration**

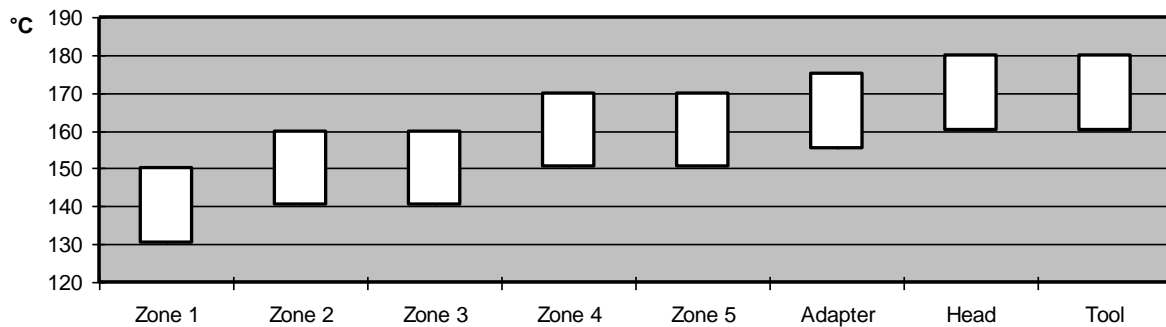
Low compression screw with L/D of 20 to 25 and compression ratio of 1:1.2

■ **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**

170 – 180°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 date of manufacturing

Note: The information given in this datasheet is believed to be accurate and reliable. However, no warranty, express or implied, or guarantee is given as to the suitability, accuracy, reliability or completeness of the information. This information does not hold us liable for damages or penalties resulting from following our suggestions or recommendations.

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