



## Halogen-free, radiation cross-linkable, flame retardant insulation and sheathing compound for photovoltaic/solar cables





<p>■ <b>Compound class</b> Insulation / Sheathing</p>	<p>■ <b>Compound category</b> </p>	<p>■ <b>Flame retardant</b> ATH</p>
<p>■ <b>Standards</b> DIN/VDE DKE AK 411.2.3</p>	<p>TUV 2 PFG 1169/08.2007</p>	
<p>■ <b>Operating temperature [C°]</b> -40 to 130</p>	<p>■ <b>Oil resistance level</b> ★</p>	

■ **Typical applications**  
*Halogen-free, low smoke, UV and ozone resistant, max. operating temperature 125°C, radiation cross-linkable, flame retardant compound for photovoltaic/solar cables for Green Energy/Solar applications.*



Green Energy

■ **Features**

 Flame retardant	 Halogen-free	 Low smoke
 High temperature resistant		

## PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm <sup>3</sup>	<b>1,50</b>	DIN EN ISO 1183-1A
Hardness*	Shore D	<b>49</b>	DIN ISO 7619-1
Melt Flow Index (170°C; 21,6kg)	g/10 min	<b>27</b>	DIN EN ISO 1133

## MECHANICAL PROPERTIES

■ Before cross-linking **	Unit	Typical value	Test method
Tensile strength	N/mm <sup>2</sup>	<b>10</b>	IEC 60811-501
Elongation at break	%	<b>225</b>	IEC 60811-501
■ After cross-linking ***	Unit	Typical value	Test method
Tensile strength (175kGy)	N/mm <sup>2</sup>	<b>12,3</b>	IEC 60811-501
Elongation at break (175kGy)	%	<b>160</b>	IEC 60811-501

## THERMAL PROPERTIES \*\*\*

■ Low temperature tests	Unit	Typical value	Test method
Cold bend test at -40°C	-	Pass	IEC 60811-506
Cold impact strength at -15°C	-	Pass	IEC 60811-506
Elongation at break at -40°C	%	> 30	IEC 60811-501
■ Heat tests	Unit	Typical value	Test method
Hot pressure test: penetration 4h at 140°C	%	24	IEC 60811-508
■ Hot set test at 200°C / 15min / 0,2MPa (175kGy)	Unit	Typical value	Test method
Elongation under load	%	15	IEC 60811-507
Residual elongation	%	5	IEC 60811-507
■ Hot set test at 250°C / 15min / 0,2MPa (175kGy)	Unit	Typical value	Test method
Elongation under load	%	60	IEC 60811-507
Residual elongation	%	13	IEC 60811-507

## ELECTRICAL PROPERTIES \*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity at 20°C	Ω cm	> 10 <sup>14</sup>	EN 50395
Volume resistivity at 90°C	Ω cm	> 10 <sup>11</sup>	EN 50395

## BURNING PROPERTIES \*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	34	ASTM D 2863 A
Temperature index	°C	250	ASTM D 2863 D
■ 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  
 \*\*\* cross-linked plaques / tapes

## PROCESSING GUIDE

■ **Extruder Type**

Standard extruders for elastomeric or thermoplastic processing

■ **Screw configuration**

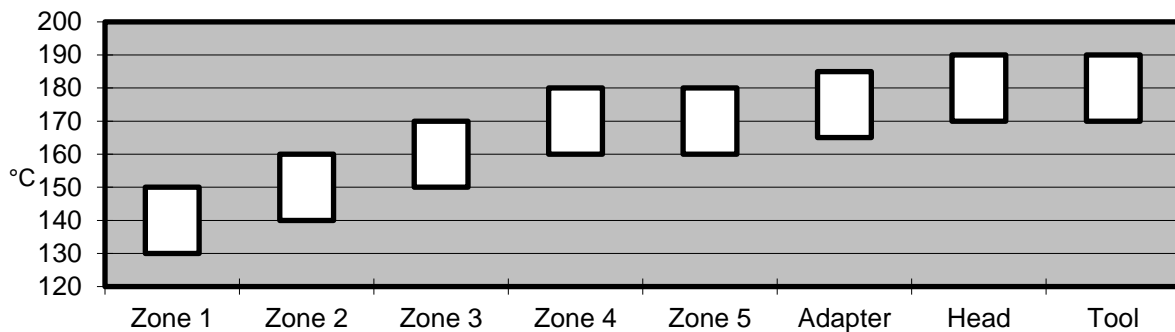
Low compression screw with L/D of 20 to 25 and compression ratio of 1:1.2

■ **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.

## CROSSLINKING INFORMATION

■ **Recommended radiation dose**

175 kGy

## 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

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