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<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> EN 50264 EM 101, 102, 103 and 104</p>	<p>■ <b>Oil resistance level</b> ★★★★</p>										
<p>■ <b>Operating temperature [C°]</b> -40 to 125</p>											
<p>■ <b>Typical applications</b> <i>It is an excellent choice for single core power cable for protected, fixed installation inside and outside railway vehicles for connecting fixed parts in direct current and alternating voltage technology, especially converter technology. The Mecoline IS RDX 1231 F compound is very low temperature resistant to – 40°C and IRM 902 &amp; IRM 903 oil resistant</i></p>											
 <p>Marine, Aerospace, Defence</p>	 <p>Rolling Stock, Rapid Transit, Railways</p>										
<p>■ <b>Features</b></p> <table border="0"> <tr> <td> Flame retardant</td> <td> Halogen-free</td> <td> Low smoke</td> </tr> <tr> <td> Oil resistant</td> <td> High temperature resistant</td> <td> Flexible</td> </tr> <tr> <td> Flexible at low temperatures</td> <td></td> <td></td> </tr> </table>			 Flame retardant	 Halogen-free	 Low smoke	 Oil resistant	 High temperature resistant	 Flexible	 Flexible at low temperatures		
 Flame retardant	 Halogen-free	 Low smoke									
 Oil resistant	 High temperature resistant	 Flexible									
 Flexible at low temperatures											

## PHYSICAL PROPERTIES

Physical properties	Unit	Typical value	Test method
Density*	g/cm <sup>3</sup>	<b>1.62</b>	DIN EN ISO 1183-1A
Hardness*	Shore A	<b>85</b>	DIN ISO 7619-1
Melt Flow Index (175°C; 21,6kg)	g/10 min	<b>7.0</b>	DIN EN ISO 1133

## MECHANICAL PROPERTIES

Before crosslinking **	Unit	Typical value	Test method
Tensile strength	N/mm <sup>2</sup>	<b>&gt;9.0</b>	IEC 60811-501
Elongation at break	%	<b>&gt;200</b>	IEC 60811-501
After crosslinking ***	Unit	Typical value	Test method
Tensile strength (75kGy)	N/mm <sup>2</sup>	<b>&gt;12.0</b>	IEC 60811-501
Elongation at break (75kGy)	%	<b>&gt;180</b>	IEC 60811-501

■ After ageing in air oven 240h at 120°C***	Unit	Typical value	Test method
Variation in tensile strength	%	<25	IEC 60811-401
Variation in elongation at break	%	<25	IEC 60811-401

## THERMAL PROPERTIES\*\*\*

■ Low temperature tests	Unit	Typical value	Test method
Low temp flexibility winding on mandrel at -40°C	-	No cracks	IEC 60811-506
Elongation at break at -40°C	%	>35	IEC 60811-505
Elongation at break at -60°C	%	24	IEC 60811-505
■ Heat tests	Unit	Typical value	Test method
Penetration 4h at 140°C	%	<50	IEC 60811-508
Shrinkage test 1h at 120°C	%	<2	IEC 60811-502
■ Hot set test at 200°C / 15min / 0,2MPa	Unit	Typical value	Test method
Elongation under load	%	<40	IEC 60811-507
Residual elongation	%	< 10	IEC 60811-507

## ELECTRICAL PROPERTIES\*

■ Major electrical properties	Unit	Typical value	Test method
Electrical breakdown	-	No breakdown	EN 50264
Volume resistivity (at 23°C)	Ω cm	≥10 <sup>10</sup>	IEC 60093

## RESISTANCE\*\*\*

■ Fluid IRM 902 72h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	<30	IEC 60811-404
Variation in elongation at break	%	<40	IEC 60811-404
■ Fluid IRM 903 168h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	<30	IEC 60811-404
Variation in elongation at break	%	<40	IEC 60811-404
■ Ozone resistance	Unit	Typical value	Test method
Method A 250ppm – 24h at 25°C	-	No cracks	EN 50305
Method B 200ppm – 72h at 40°C	-	No cracks	EN 50305

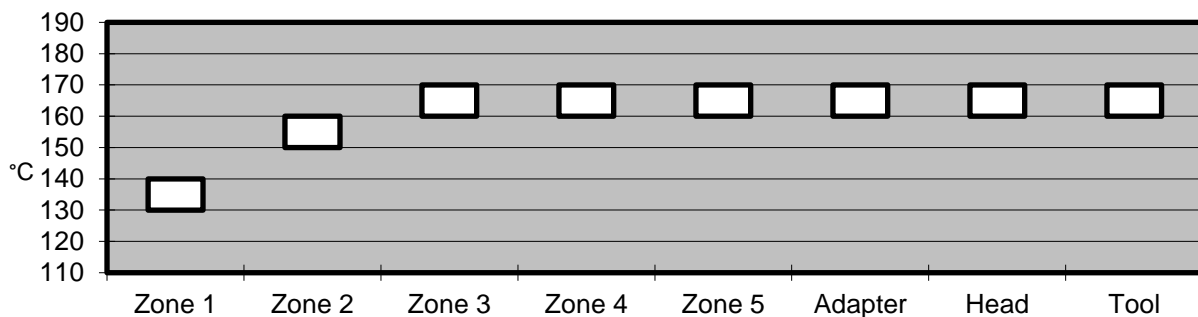
## BURNING PROPERTIES\*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	<b>40</b>	ASTM D 2863 A
Halogen content	%	<b>0</b>	IEC 754-1
Burning test (vertical)	mm	<b>&lt;540</b>	EN 60332-1-2
Temperature index	°C	<b>300</b>	ASTM D 2863 D
Toxicity index	-	<b>2</b>	EN 50305
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	<b>&gt;4.5</b>	IEC 60754-2
Conductivity (max.)	μS/mm	<b>&lt;4.0</b>	IEC 60754-2

\* pressed plaques  
 \*\* extruded tapes  
 \*\*\* cross-linked plaques or tapes

## PROCESSING GUIDE

<ul style="list-style-type: none"> <li>■ Extruder type</li> <li>■ Screw configuration</li> <li>■ Extrusion dies</li> <li>■ Die opening</li> <li>■ Temperature profile extruder</li> </ul>	<p>Standard extruders for elastomeric or thermoplastic materials.</p> <p>Good results have been achieved with ‘halogen-free’ screws, and barrier type screws (BM) having high flights and a L/D-ratio &gt; 24:1. Screws having low shear are recommended.</p> <p>For pressure extrusion, normal dies are recommended.</p> <p>Die opening should be 1 – 5% below the required OD of the wire.</p> <p>The profile shown below may vary slightly depending on extruder type, head design &amp; output.</p>
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<ul style="list-style-type: none"> <li>■ Maximum mass temperature</li> <li>■ Drying</li> <li>■ Recommended colour master batches</li> </ul>	<p>170°C</p> <p>Pre-dry the compound 4 hrs at 60°C. Dry air, which has been dried by a desiccant air-dryer’ should be used.</p> <p>Well dispersed EVA master batch 0,5-1,0%. For black jacket applications, UV resistance can be obtained by adding a higher level of master batch depending on requirements and type of carbon black master batch used.</p>
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## CROSSLINKING INFORMATION

<ul style="list-style-type: none"> <li>■ Recommended radiation dose</li> <li>■ Radiation information</li> </ul>	<p>75-100 kGy</p> <p>75 kGy is a good starting point. This can be optimized by customer for maximum result.</p>
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## STORAGE INFORMATION

<ul style="list-style-type: none"> <li>■ Form &amp; packaging</li> <li>■ Shelf life</li> </ul>	<p>Pellets in sizes 2.8mm, PE-bags (25 kg) Moisture-resistant bags (25kg) &amp; octabins (alu-innerliner, max. 1250kg)</p> <p>1 year after production</p>
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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.