





















## Radiation cross-linkable, flame retardant compound

<p>■ <b>Compound class</b> Insulation / sheathing</p> <p>■ <b>Standards</b> SAE J1128 TXL, GXL and SXL; UL 3289, 3321</p> <p>■ <b>Operating temperature [°C]</b> -50 to 150</p>	<p>■ <b>Compound category</b></p> <p><b>RDX</b></p> <p>SAE J1127 STX and SGX CSA AWM I A/B</p> <p>■ <b>Oil resistance level</b> ★★★</p>	<p>■ <b>Flame retardant</b> Halogenated</p> <p>CSA CL 1251, 1503</p>						
<p>■ <b>Typical applications</b> <i>Motor lead wires for coil connections, class F motors and transformers, pumps, solenoids, Internal wiring of appliances, sensor wires, flexible battery cables and wire insulation of low voltage multicore cables for road vehicles.</i></p>								
 <p>General Applications</p>	 <p>Automotive</p>							
<p>■ <b>Features</b></p> <table border="0"> <tr> <td> Flame retardant</td> <td> Flexible at low temperatures</td> <td> Oil resistant</td> </tr> <tr> <td> Abrasion resistant</td> <td> High temperature resistant</td> <td> Flexible</td> </tr> </table>			 Flame retardant	 Flexible at low temperatures	 Oil resistant	 Abrasion resistant	 High temperature resistant	 Flexible
 Flame retardant	 Flexible at low temperatures	 Oil resistant						
 Abrasion resistant	 High temperature resistant	 Flexible						

## PHYSICAL PROPERTIES

Physical properties	Unit	Typical value	Test method
Density*	g/cm <sup>3</sup>	<b>1.2</b>	DIN EN ISO 1183-1A
Melt Flow Index (190°C ; 21,6 kg)	g/10 min	<b>4</b>	DIN EN ISO 1133
Hardness*	Shore D	<b>50</b>	DIN ISO 48-4

## MECHANICAL PROPERTIES

Thermoplastic / Before cross-linking **	Unit	Typical value	Test method
Tensile strength	N/mm <sup>2</sup>	<b>15</b>	IEC 60811-501
Elongation at break	%	<b>500</b>	IEC 60811-501
After crosslinking ***	Unit	Typical value	Test method
Tensile strength (120 kGy)	N/mm <sup>2</sup>	<b>17</b>	IEC 60811-501
Elongation at break (120 kGy)	%	<b>330</b>	IEC 60811-501
Abrasion resistance	-	<b>Excellent</b>	
After ageing in air oven 168h at 180°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-18.0</b>	IEC 60811-401
Variation in elongation at break	%	<b>-14.7</b>	IEC 60811-401

■ After ageing in air oven 2.160h (90d) at 158°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-13.8</b>	IEC 60811-401
Variation in elongation at break	%	<b>-25.7</b>	IEC 60811-401
■ After ageing in air oven 2.880h (120d) at 158°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-3.2</b>	IEC 60811-401
Variation in elongation at break	%	<b>-30.7</b>	IEC 60811-401

## THERMAL PROPERTIES \*\*\*

■ Low temperature tests	Unit	Typical value	Test method
Elongation at break at -55°C (100-150 kGy)	%	<b>&gt;30</b>	IEC 60811-505
■ Hot set test at 200°C / 15min / 0,2MPa	Unit	Typical value	Test method
Elongation under load	%	<b>30</b>	IEC 60811-507
Residual elongation	%	<b>&lt;10</b>	IEC 60811-507

## ELECTRICAL PROPERTIES\*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity	Ω cm	<b>10<sup>15</sup></b>	ASTM D 257
Dielectric strength	kV/mm	<b>25</b>	ASTM D 149
Dielectric constant at 50Hz 20°C	-	<b>2.9</b>	ASTM D 150

## RESISTANCE\*\*\*

■ Fluid IRM 902 4h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-16.9</b>	IEC 60811-404
Variation in elongation at break	%	<b>-0.2</b>	IEC 60811-404
■ Fluid IRM 902 24h at 50°C	Unit	Typical value	Test method
Variation in tensile strength	%	<b>-11.5</b>	IEC 60811-404
Variation in elongation at break	%	<b>-1.6</b>	IEC 60811-404
■ Ozone resistance 24h / 25°C / 250 – 300 x 10 <sup>4</sup> %	Unit	Typical value	Test method
Requirement		<b>no cracks</b>	DIN EN 50396

## BURNING PROPERTIES\*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	<b>27</b>	ASTM D 2863 A
Flammability	-	<b>Pass</b>	UL 224

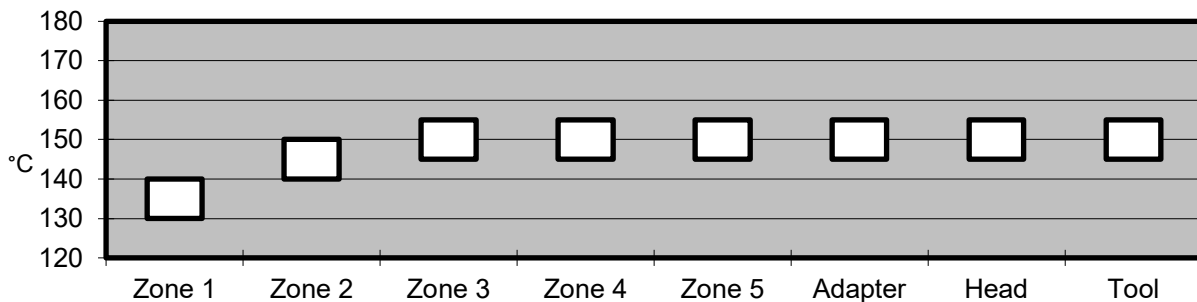
\* pressed plaques

\*\* extruded tapes

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

## PROCESSING GUIDE

■ <b>Screw configuration</b>	Barrier type screw (BM) having high flights and a L/D-ratio > 24:1
■ <b>Screw cooling</b>	For high line speeds, cooling the screw to around 80°C can be very effective although this could lead to pulsation
■ <b>Screen pack</b>	40/60/80/40 mesh
■ <b>Extrusion dies</b>	Pressure or tube. For pressure extrusion, normal dies are recommended.
■ <b>Die opening</b>	Die opening approximately slightly below the required OD of the wire.
■ <b>Temperature profile extruder</b>	The profile shown below may vary slightly depending on extruder type, head design & output.



■ <b>Maximum mass temperature</b>	170°C
■ <b>Conductor pre-heating</b>	Preheating not required, but may positively influence elongation at break
■ <b>Wire/conductor</b>	Bare copper / Tin-coated
■ <b>Quenching</b>	Warm water in the first cooling section (60-80°C)
■ <b>Drying</b>	Pre-dry at 60°C during 4 hrs.
■ <b>Recommended colour master batches</b>	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.

## CROSS-LINKING INFORMATION

■ <b>Recommended radiation dose</b>	100-150 kGy
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## STORAGE INFORMATION

■ <b>Form &amp; packaging</b>	Pellets in sizes 2.8mm & 5.5mm Moisture-resistant bags (25kg) & octabins (alu-innerliner, max. 1250kg)
■ <b>Shelf life</b>	1 year after production

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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