








Halogen-free, radiation cross-linkable, flame retardant insulation compound for thin wall insulation of wire

<p>■ Compound class Insulation</p>	<p>■ Compound category </p>	<p>■ Flame retardant ATH</p>
<p>■ Standards SAE J 1128 GXL, SXL & TXL</p>		
<p>■ Operating temperature [C°] -40 to 125</p>	<p>■ Oil resistance level ★★★</p>	
<p>■ Typical applications <i>Halogen-free, low smoke, highly oil and extra fuel resistant, radiation cross-linkable, flame retardant, max. operating temperature 125°C, compound for thin wall insulation of wire for Automotive applications.</i></p>		
		
<p>Automotive</p>		
<p>■ Features</p>		
 Flame retardant	 Halogen-free	 Low smoke
 High temperature resistant	 Oil resistant	

PHYSICAL PROPERTIES

Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1,39	DIN EN ISO 1183-1A
Hardness*	Shore D	47	DIN ISO 48-4
Melt Flow Index (150°C; 10,0kg)	g/10 min	6,0	DIN EN ISO 1133

MECHANICAL PROPERTIES

Before cross-linking **	Unit	Typical value	Test method
Tensile strength	N/mm ²	7,0	SAE J1128
Elongation at break	%	670	SAE J1128
After cross-linking ***	Unit	Typical value	Test method
Tensile strength (75kGy)	N/mm ²	15,8	SAE J1128
Elongation at break (75kGy)	%	220	SAE J1128

■ After ageing in air oven 168h at 155°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	+5,0	SAE J1128
Variation in elongation at break	%	-10,0	SAE J1128

THERMAL PROPERTIES ***

■ Low temperature tests	Unit	Typical value	Test method
Cold bend test at -40°C	-	Pass	SAE J1128

ELECTRICAL PROPERTIES *

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity at 20°C	Ω cm	1,3 x 10¹⁴	IEC 60167
Dielectric strength	kV/mm	27	DIN EN 60243-1

RESISTANCE ***

■ Fluid IRM 902 20h at 50°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ Fluid IRM 903 20h at 50°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ Gasoline Ref. Fuel C 20h at 23°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ 85% Ethanol + 15 % Ref. Fuel C 20h at 23°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ 90% IRM 903 + 10% p-xylene 20h at 23°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ Dexron III SAE J311 20h at 50°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ 50% Distilled Water + 50% Ethylene Glycol 20h at 50°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128
■ H2SO4 (1,260 g/ml) 20h at 23°C	Unit	Typical value	Test method
No cracks or splits after mandrel test	N/mm ²	Pass	SAE J1128

BURNING PROPERTIES *

■ Main burning properties	Unit	Typical value	Test method
LOI	%	30	ASTM D 2863 A
Flame resistance		Pass	SAE J1128
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	≥ 4,5	EN 50267-2-2
Conductivity (max.)	μS/mm	≤ 10	EN 50267-2-2

* pressed plaques, 135°C / 5 min.

** extruded tapes

*** cross-linked plaques / tapes

PROCESSING GUIDE

■ **Extruder Type**

Standard extruders for elastomeric or thermoplastic processing

■ **Screw configuration**

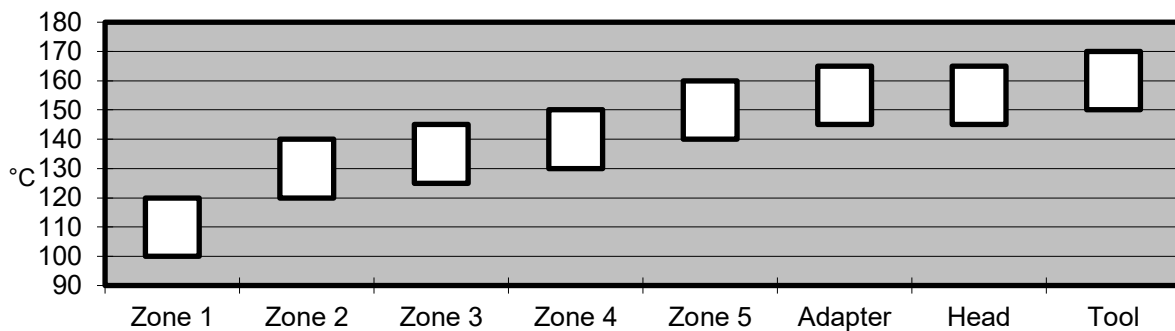
Low compression screw with L/D of 20 to 25 and compression ratio of 2:1 – 3:1

■ **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.

CROSS-LINKING INFORMATION

■ **Recommended radiation dose**

75 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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