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<p>■ Compound class Sheathing</p>	<p>■ Compound category </p>	<p>■ Flame retardant ATH/MDH</p>									
<p>■ Standards EN 50264 EM 101, 102, 103 and 104</p>	<p>IEC 60092-360 SHF2</p>										
<p>■ Operating temperature [°C] -40 to 125</p>	<p>■ Oil resistance level ★★★★</p>										
<p>■ Typical applications <i>Halogen-free, low smoke, flexible at low temperatures, highly oil and extra fuel resistant, radiation cross-linkable, flame retardant compound for Offshore/Shipboard and Rolling Stock applications.</i></p>											
 <p>Marine, Aerospace, Defence</p>	 <p>Rolling Stock, Rapid Transit, Railways</p>										
<p>■ Features</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 ³	1,59	DIN EN ISO 1183-1A
Hardness*	Shore A	87	DIN ISO 7619-1
Mooney viscosity, ML (1+4) 160°C	MU	65	DIN ISO 289-1

MECHANICAL PROPERTIES

Before crosslinking **	Unit	Typical value	Test method
Tensile strength	N/mm ²	> 10,0	IEC 60811-501
Elongation at break	%	> 180	IEC 60811-501
After crosslinking ***	Unit	Typical value	Test method
Tensile strength (75kGy)	N/mm ²	> 12,0	IEC 60811-501
Elongation at break (75kGy)	%	> 150	IEC 60811-501

■ After ageing in air oven 240h at 120°C***	Unit	Typical value	Test method
Variation in tensile strength	%	+ 6,5	IEC 60811-401
Variation in elongation at break	%	-10,2	IEC 60811-401

THERMAL PROPERTIES***

■ Hot set test at 200°C / 15min / 0,2MPa	Unit	Typical value	Test method
Elongation under load	%	10	IEC 60811-507
Residual elongation	%	5	IEC 60811-507
■ Low temperature tests	Unit	Typical value	Test method
Brittleness temperature (100kGy)	°C	-28	ASTM D 746-14

ELECTRICAL PROPERTIES*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity (at 23°C)	Ω cm	> 10¹²	DIN EN 62631-3-1
Dielectrical strength	MV/m	> 15	DIN EN 60243-1

Fluid 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
■ 1 N Oxalic acid solution 168h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	< 30	IEC 60811-404
Elongation at break	%	> 100	IEC 60811-404
■ 1 N NaOH 168h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	< 30	IEC 60811-404
Elongation at break	%	> 100	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 Tests*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	37	ASTM D 2863 A
Halogen content	%	< 0.5	IEC 754-1
Temperature index	°C	> 280	ASTM D 2863 D
Toxicity index	ITC	< 3.5	EN 50305
Caloric Value Hu	kJ/kg	8500	DIN 51900-2
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	6,2	IEC 60754-2
Conductivity (max.)	μS/mm	0,7	IEC 60754-2

* pressed plaques

** extruded tapes

*** cross-linked plaques or tapes (75kGy)

PROCESSING GUIDE

■ **Extruder type**

Standard extruders for elastomeric or thermoplastic materials. L/D-ratios between 20 – 24 are recommended.

■ **Screw configuration**

Good results have been achieved with low shear and low compression screws (compression ratio of 1.2 – 1.4) and having deep flow channels.

■ **Extrusion dies**

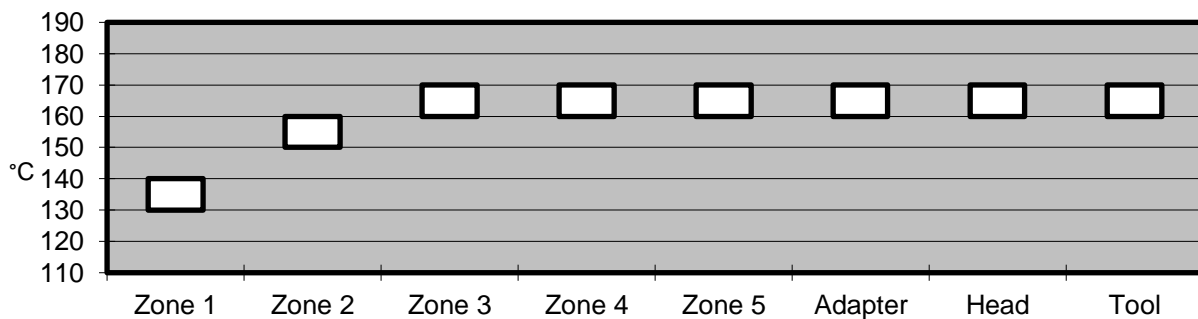
For pressure extrusion, normal dies are recommended.

■ **Die opening**

Die opening should be 1 – 5% below the required OD of the wire.

■ **Temperature profile extruder**

The profile shown below may vary slightly depending on extruder type, head design & output.



■ **Maximum mass temperature**

170-175°C

■ **Drying**

Pre-dry the compound 4 hrs at 60°C. Dry air, which has been dried by a desiccant air-dryer' should be used.

■ **Recommended colour master batches**

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.

CROSSLINKING INFORMATION

■ **Recommended deposited (1) radiation dose**

- As an outer jacket in a multicore construction: 75–100 kGy
- (1): The deposited radiation dose is the radiation dose, which is absorbed in the material and is, amongst other depending on the e-beam voltage.

STORAGE INFORMATION

■ **Form & packaging**

Pellets in sizes 2.8mm, PE-bags (25 kg)
Moisture-resistant bags (25kg) & octabins (alu-innerliner, max. 1250kg)

■ **Shelf life**

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.

S RDX 1261 F TDS ENG rev05 *06.11.2020* SK