Technical data sheet

Mecoline S RDX 1261 F

Halogen-free, radiation cross-linkable, flame retardant compound

■ Compound class	■ Compound category	■ Flame retardant
Sheathing	RDX	ATH/MDH

■ Standards	
EN 50264 EM 101, 102, 103 and 104	IEC 60092-360 SHF2

■ Operating temperature [°C]	■ Oil resistance level
-40 to 125	★★★★

■ **Typical applications**

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.

Marine, Aerospace, Defence

Rolling Stock, Rapid Transit, Railways

■ **Features**

- 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/cm³	**1,59**	DIN EN ISO 1183-1A
Hardness*	Shore A	**87**	DIN ISO 48-4
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/mm²	**> 10,0**	IEC 60811-501
Elongation at break	%	**> 180**	IEC 60811-501
■ After crosslinking * **	**Unit**	**Typical value**	**Test method**
Tensile strength (75kGy)	N/mm²	**> 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	**> 10^{12}**	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

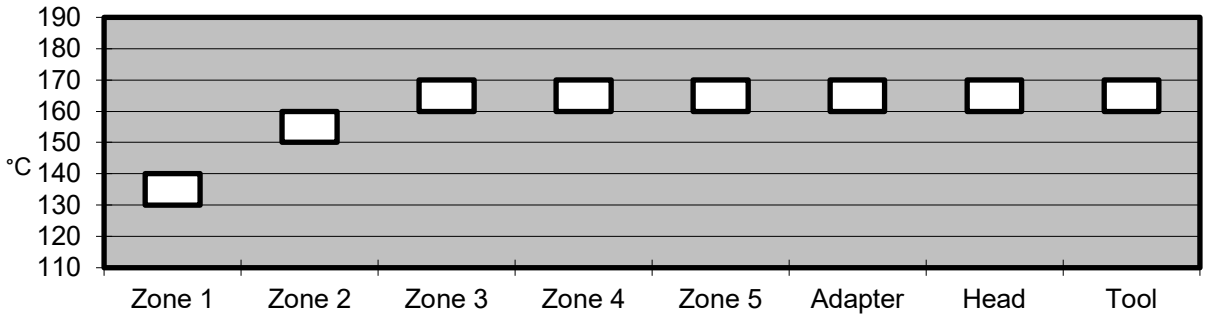
BURNING Tests*

■ 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

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