




Halogen-free, radiation cross-linkable, flame retardant sheathing compound for power and telecommunication cables

<p>■ Compound class Sheathing</p>	<p>■ Compound category </p>	<p>■ Flame retardant ATH</p>
<p>■ Standards DIN EN 50264 EM101-104</p>	<p>IEC 60092-360 SHF 2</p>	<p>NEK 606</p>
<p>■ Operating temperature [C°] -25 to 105</p>	<p>■ Oil resistance level ★★★★★</p>	


■ **Typical applications**
Halogen-free, low smoke, highly oil and extra fuel resistant radiation cross-linkable, flame retardant compound for thin wall insulation of wire for Rolling Stock, Offshore and Marine/Aerospace applications.



Offshore, Shipboard




Marine, Aerospace, Defence




Rolling Stock, Rapid Transit, Railways


■ **Features**




Flame retardant




Halogen-free



Low smoke



High temperature resistant



Oil resistant

PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1,48	DIN EN ISO 1183-1A
Hardness*	Shore D	50	DIN ISO 48-4
Mooney viscosity, ML (1+4) 150°C	MU	29	DIN ISO 289-1
Melt Flow Index (150°C; 21,6kg)	g/10 min	8,0	DIN EN ISO 1133

MECHANICAL PROPERTIES

■ Before cross-linking **	Unit	Typical value	Test method
Tensile strength	N/mm ²	9,0	IEC 60811-501
Elongation at break	%	212	IEC 60811-501
■ After cross-linking ***	Unit	Typical value	Test method
Tensile strength (100kGy)	N/mm ²	14,3	IEC 60811-501
Elongation at break (100kGy)	%	173	IEC 60811-501

■ After ageing in air oven 240h at 120°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	+20,6	IEC 60811-401
Variation in elongation at break	%	-16,1	IEC 60811-401
■ After ageing in air oven 168h at 150°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	+24,0	IEC 60811-401
Variation in elongation at break	%	-20,1	IEC 60811-401

THERMAL PROPERTIES ***

■ Low temperature tests	Unit	Typical value	Test method
Cold bend test at -25°C	-	No cracks	EN 60811-504
■ Hot set test at 200°C / 15min / 0,2MPa	Unit	Typical value	Test method
Elongation under load	%	15	IEC 60811-507
Residual elongation	%	5	IEC 60811-507

RESISTANCE ***

■ Fluid IRM 902 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-9,4	IEC 60811-404
Variation in elongation at break	%	-9,4	IEC 60811-404
Variation in weight	%	+15,8	IEC 60811-404
■ Fluid IRM 902 60d at 75°C	Unit	Typical value	Test method
Variation in tensile strength	%	-6,3	IEC 60811-404
Variation in elongation at break	%	-12,5	IEC 60811-404
Variation in weight	%	+16,0	IEC 60811-404
■ Fluid IRM 903 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-20,5	IEC 60811-404
Variation in elongation at break	%	-22,2	IEC 60811-404
Variation in weight	%	+22,5	IEC 60811-404
■ Calcium Bromide Brine (Waterbased) 56d at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	+9,1	IEC 60811-404
Variation in elongation at break	%	-1,7	IEC 60811-404
Variation in weight	%	+0,4	IEC 60811-404
■ Carbo Sea (oil based) 56d at 70°C ¹	Unit	Typical value	Test method
Variation in tensile strength	%	-21,4	IEC 60811-404
Variation in elongation at break	%	-19,2	IEC 60811-404
Variation in weight	%	+8,6	IEC 60811-404
■ EDC 95-11 56d at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	-16,9	IEC 60811-404
Variation in elongation at break	%	-14,5	IEC 60811-404
Variation in weight	%	+6,0	IEC 60811-404

■ 1N NaOH 168h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-10,5	IEC 60811-404
Variation in elongation at break	%	-2,3	IEC 60811-404
■ 1N Oxalic acid 168h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-11,9	IEC 60811-404
Variation in elongation at break	%	-5,8	IEC 60811-404
■ 15 W 40 24h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	-1,5	IEC 60811-404
Variation in elongation at break	%	-33,5	IEC 60811-404
Variation in weight	%	+5,5	IEC 60811-404
■ Hydraunicoil (FH 3) 24h at 50°C	Unit	Typical value	Test method
Variation in tensile strength	%	-1,5	IEC 60811-404
Variation in elongation at break	%	-29,6	IEC 60811-404
Variation in weight	%	+2,6	IEC 60811-404
■ Diesel 24h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-3,0	IEC 60811-404
Variation in elongation at break	%	-38,6	IEC 60811-404
Variation in weight	%	+2,1	IEC 60811-404
■ Diesel 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-18,0	IEC 60811-404
Variation in elongation at break	%	-4,7	IEC 60811-404
Variation in weight	%	+20,7	IEC 60811-404
■ MEK 1,5h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-7,1	IEC 60811-404
Variation in elongation at break	%	-14,8	IEC 60811-404
Variation in weight	%	+0,3	IEC 60811-404
■ Cleaning Solvent 1,5h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-0,6	IEC 60811-404
Variation in elongation at break	%	-3,2	IEC 60811-404
Variation in weight	%	+0,3	IEC 60811-404
■ Water purified 672h at 50°C	Unit	Typical value	Test method
Variation in tensile strength	%	-3,2	IEC 60811-404
Variation in elongation at break	%	-37,5	IEC 60811-404
Variation in weight	%	+1,1	IEC 60811-404

1 This specified drilling fluid resistance qualification may be used as a reference for the compound properties only. No guarantee can be given for compounds and cable configurations that have been approved in this drilling fluid will also pass the requirements and operating conditions of other specific drilling fluids and/or cable configurations. Additional agreements with the cable manufacturer

will be required and additional testing in fluids and oil may be needed to guarantee safe operation in other particular conditions and environments.

BURNING PROPERTIES *

■ Main burning properties	Unit	Typical value	Test method
LOI	%	34	ASTM D 2863 A

ELECTRICAL PROPERTIES*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity (500 V, 23°C)	Ω cm	2,5*10¹³	VDE 0303-30
Volume resistivity (500 V, 90°C)	Ω cm	5,0*10¹⁰	VDE 0303-30

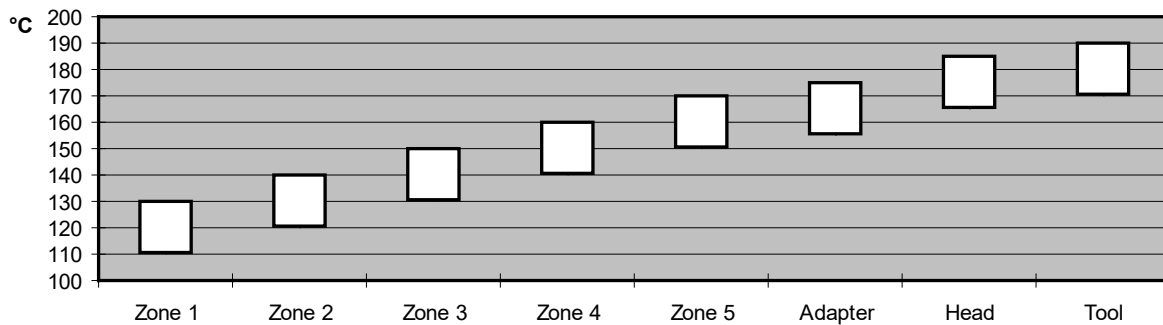
* pressed plaques, 155°C / 5 min.

** extruded tapes

*** cross-linked plaques / tapes

PROCESSING GUIDE

<ul style="list-style-type: none"> ■ Extruder Type 	Standard extruders for elastomeric or thermoplastic processing
<ul style="list-style-type: none"> ■ Screw configuration 	Low compression screw with L/D of 20 to 25 and compression ratio of 1:1.2
<ul style="list-style-type: none"> ■ Tooling 	For insulation pressure tools, for jacketing tube tools are recommended. Note: Pressure Tooling may have an effect on low temperature flexibility.
<ul style="list-style-type: none"> ■ Temperature profile extruder 	The profile shown below may vary slightly depending on extruder type, head design & output.



<ul style="list-style-type: none"> ■ Maximum mass temperature 	170-180°C
<ul style="list-style-type: none"> ■ 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

<ul style="list-style-type: none"> ■ Recommended radiation dose 	100 kGy
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STORAGE INFORMATION

<ul style="list-style-type: none"> ■ Form & packaging 	Pellets in sizes 2.8mm & 5.5mm Moisture-resistant bags (25kg) & octabins (alu-innerliner, max. 1250kg)
<ul style="list-style-type: none"> ■ Shelf life 	1 year after date of manufacturing

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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