



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


■ Compound class Sheathing	■ Compound category 	■ Flame retardant ATH
■ Standards EN 50264 EM101-104	IEC 60092-360 SHF2	NEK 606
■ Operating temperature [°C] -60 to 125	■ Oil resistance level ★★★★★	

■ 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 Marine/Aerospace applications.



Offshore










Rolling Stock, Rapid Transit, Railways



Shipboard

■ Features

 Flame retardant	 Halogen-free	 Low smoke
 High temperature resistant	 Oil resistant	 Flexible
 Flexible at low temperatures		

PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1,60	DIN EN ISO 1183-1A
Hardness*	Shore A	83	DIN ISO 7619-1
Hardness*** (100 kGy)	Shore A	88	DIN ISO 7619-1
Melt Flow Index (175°C; 21,6kg)	g/10 min	15	DIN EN ISO 1133

MECHANICAL PROPERTIES

■ Before crosslinking **	Unit	Typical value	Test method
Tensile strength	N/mm ²	8,4	IEC 60811-501
Elongation at break	%	379	IEC 60811-501
■ After crosslinking ***	Unit	Typical value	Test method
Tensile strength (100kGy)	N/mm ²	13,0	IEC 60811-501
Elongation at break (100kGy)	%	206	IEC 60811-501

■ After ageing in air oven 168h at 121°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	+12,7	IEC 60811-401
Variation in elongation at break	%	-1,9	IEC 60811-401

THERMAL PROPERTIES ***

■ Low temperature tests	Unit	Typical value	Test method
Brittleness temperature (100kGy)	°C	-61,8	ASTM D 746-14
■ 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 60d at 75°C	Unit	Typical value	Test method
Variation in tensile strength	%	-5,8	IEC 60811-404
Variation in elongation at break	%	-12,7	IEC 60811-404
Variation in weight	%	+6,0	IEC 60811-404
■ Fluid IRM 902 168h at 90°C	Unit	Typical value	Test method
Variation in tensile strength	%	+4,6	IEC 60811-404
Variation in elongation at break	%	-9,7	IEC 60811-404
Variation in weight	%	+6,0	IEC 60811-404
■ Fluid IRM 902 24h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	+19,8	IEC 60811-404
Variation in elongation at break	%	+2,9	IEC 60811-404
Variation in weight	%	+7,4	IEC 60811-404
■ Fluid IRM 902 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	+19,8	IEC 60811-404
Variation in elongation at break	%	+8,0	IEC 60811-404
Variation in weight	%	+8,2	IEC 60811-404
■ Fluid IRM 903 24h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-5,6	IEC 60811-404
Variation in elongation at break	%	-15,0	IEC 60811-404
Variation in weight	%	+13,2	IEC 60811-404
■ Fluid IRM 903 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-19,7	IEC 60811-404
Variation in elongation at break	%	-13,3	IEC 60811-404
Variation in weight	%	+13,0	IEC 60811-404

■ Carbo Sea (oil based) 56d at 70°C ¹	Unit	Typical value	Test method
Variation in tensile strength	%	-0,9	IEC 60811-404
Variation in elongation at break	%	-11,2	IEC 60811-404
Variation in weight	%	+5,0	IEC 60811-404
■ EDC 95-11 56d at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	-14,3	IEC 60811-404
Variation in elongation at break	%	-18,6	IEC 60811-404
Variation in weight	%	+2,0	IEC 60811-404
■ Water purified 240h at 70°C	Unit	Typical value	Test method
Absorption	mg/cm ²	1,9	IEC 60811-402

- 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	%	42	ASTM D 2863 A
Caloric Value Hu	kJ/kg	11700	DIN 51900-2

* pressed plaques, 165°C / 5 min.

** extruded tapes

*** cross-linked plaques / tapes

PROCESSING GUIDE

■ **Extruder Type**

Standard extruders for elastomeric or thermoplastic processing

■ **Screw configuration**

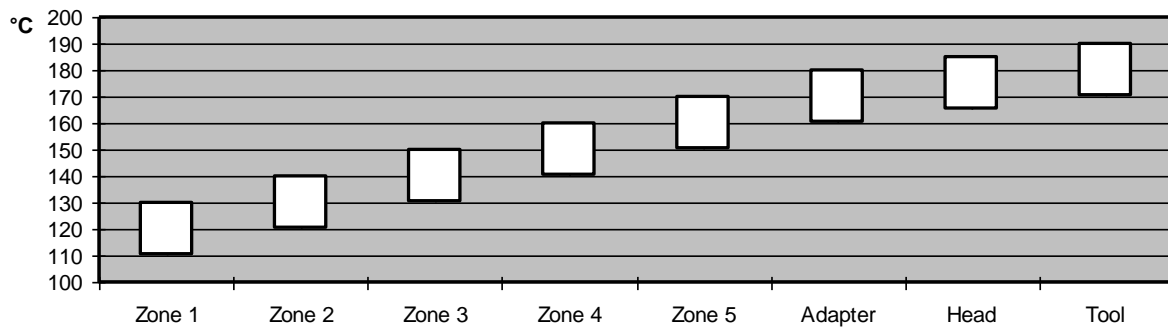
Low compression screw with L/D of 20 to 25 and compression ratio of 1:1.2

■ **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**

170 – 180°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.

CROSSLINKING INFORMATION

■ **Recommended radiation dose**

100 kGy

STORAGE INFORMATION

■ **Form & packaging**

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

■ **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.