








Halogen-free, radiation cross-linkable, highly flame-retardant insulation and sheathing compound for low voltage cables

<p>■ Compound class Insulation / Sheathing</p>	<p>■ Compound category </p>	<p>■ Flame retardant MDH</p>
<p>■ Standards EN 50363-5 EI 5 & EI 8 EN 50264 EI 105 & EI 110</p>	<p>■ Operating temperature [°C] -40 to 120</p>	<p>■ Oil resistance level ★</p>
<p>■ Typical applications <i>Long-term ageing resistance (20.000h/120°C).</i></p>		
 <p>Installation</p>	 <p>Rolling Stock, Rapid Transit, Railways</p>	
<p>■ Features</p>		
 Flame retardant	 Halogen-free	 Low smoke
 High temperature resistant		

PHYSICAL PROPERTIES

Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1.37	DIN EN ISO 1183-1A
Hardness*	Shore D	43	DIN ISO 7619-1
Melt flow index (150°C; 21,6kg)	g/10min	4.0	DIN EN ISO 1133

MECHANICAL PROPERTIES **

Thermoplastic**	Unit	Typical value	Test method
Tensile strength	N/mm ²	> 10.0	IEC 60811-501
Elongation at break	%	> 350	IEC 60811-501
After crosslinking ***	Unit	Typical value	Test method
Tensile strength (150 kGy)	N/mm ²	≥ 12.0	IEC 60811-501
Elongation at break (150 kGy)	%	> 250	IEC 60811-501
After ageing in air oven 240h at 180°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	+ 27.8	IEC 60811-401
Variation in elongation at break	%	- 23.8	IEC 60811-401
After ageing in air oven 672h at 155°C ***	Unit	Typical value	Test method
Variation in tensile strength	%	+ 32.2	IEC 60811-401
Variation in elongation at break	%	- 6.3	IEC 60811-401

THERMAL PROPERTIES ***

■ Hot set test at 200°C / 15min / 0,2 MPa (150 kGy)	Unit	Typical value	Test method
Elongation under load	%	20	IEC 60811-507
Residual elongation	%	1	IEC 60811-507
■ Hot set test at 250°C / 15min / 0,2 MPa (150 kGy)	Unit	Typical value	Test method
Elongation under load	%	28	IEC 60811-507
Residual elongation	%	8	IEC 60811-507
■ Heat tests (150 kGy)	Unit	Typical value	Test method
Hot pressure test: penetration 6h at 125°C	%	40	IEC 60811-508

ELECTRICAL PROPERTIES*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity (at 23°C)	Ω cm	≥ 10¹⁴	EN 60093
Volume resistivity (at 90°C)	Ω cm	≥ 10¹³	EN 60093

RESISTANCE***

■ Fluid IRM 903 168h at 70°C	Unit	Typical value	Test method
Residual tensile strength	N/mm ²	7.6	IEC 60811-404
Residual elongation at break	%	148	IEC 60811-404
■ 1 N Oxalic acid 168h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-13.2	IEC 60811-404
Variation in elongation at break	%	15.4	IEC 60811-404
■ 1 N NaOH 168h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-12.4	IEC 60811-404
Variation in elongation at break	%	14.1	IEC 60811-404

BURNING PROPERTIES *

■ Main burning properties	Unit	Typical value	Test method
LOI	%	31	ASTM D 2863 A
Temperature Index	°C	300	NES 715
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	≥4.3	IEC 60754-2
Conductivity (max.)	μS/mm	≤10	IEC 60754-2

* pressed plaques, 155°C / 5 min.

** extruded tapes

*** crosslinked extruded tapes 150 kGy

PROCESSING GUIDE

■ **Extruder Type**

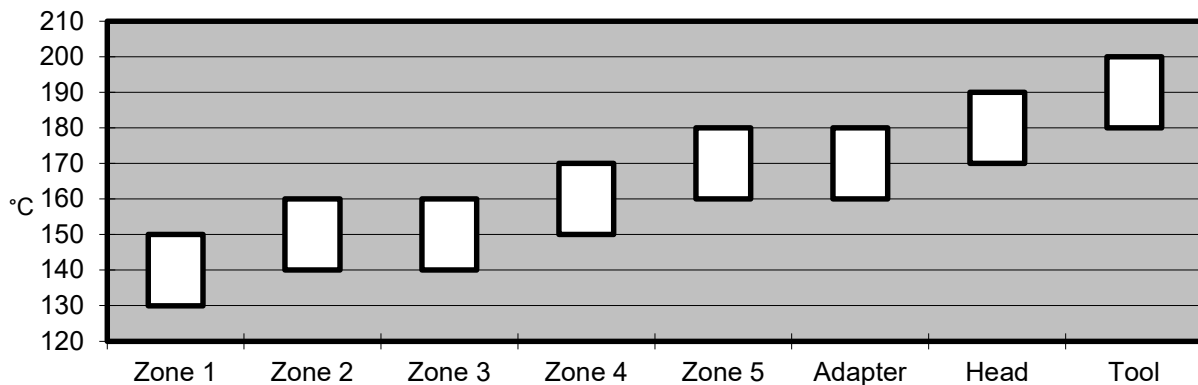
Standard HFFR extruders.

■ **Screw configuration**

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

■ **Temperature profile extruder**

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



■ **Maximum mass temperature**

220°C

■ **Drying**

Predrying of Mecoline Compounds is normally not necessary provided the compound has been stored in sealed bags under cool (max. 30°C) and dry conditions.

If Mecoline Compounds are used from open bags, predrying 4–6h at a temperature of 60–70°C is recommended.

CROSSLINKING INFORMATION

■ **Recommended radiation dose**

100-150 kGy

STORAGE INFORMATION

■ **Form & packaging**

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

■ **Shelf life**

1 year after production

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