









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

<p>■ Compound class Sheathing</p>	<p>■ Compound category </p>	<p>■ Flame retardant MDH</p>
<p>■ Standards IEC 60092/360 Table II, SHF2</p>	<p>UL 1277</p>	
<p>■ Operating temperature [C°] -40 to 105</p>	<p>■ Oil resistance level ★★</p>	
<p>■ Typical applications <i>The compound can be an ideal solution for applications like coax cables, electronic cables, communication cables, low voltage power cables, instrumentation and control cables in harsh environments.</i></p>		
		
<p>General Applications</p>	<p>Offshore, Shipboard</p>	
<p>■ Features</p>		
 Flame retardant	 Halogen-free	 Low smoke
 Oil resistant	 High temperature resistant	

PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1.45	DIN EN ISO 1183-1A
Hardness*	Shore A	90	DIN ISO 7619-1
Melt Flow Index (190°C; 2,16kg)	g/10 min	12	DIN EN ISO 1133
■ Water absorption **	Unit	Typical value	Test method
Water absorption after 240h at 70°C	mg/cm ²	5	IEC 60811-402
Water absorption after 24h at 23°C	%	0.5	IEC 60811-402

MECHANICAL PROPERTIES

■ Before crosslinking **	Unit	Typical value	Test method
Tensile strength	N/mm ²	>8	IEC 60811-501
Elongation at break	%	>250	IEC 60811-501
■ After crosslinking ***	Unit	Typical value	Test method
Tensile strength (150kGy)	N/mm ²	16	IEC 60811-501
Elongation at break (150kGy)	%	180	IEC 60811-501
Tear strength	Kg/mm	5	ASTM D 624

■ After ageing in air oven 240h at 120°C***	Unit	Typical value	Test method
Variation in tensile strength	%	+6	IEC 60811-401
Variation in elongation at break	%	-12	IEC 60811-401

THERMAL PROPERTIES***

■ Low temperature tests	Unit	Typical value	Test method
Cold bend test at -30°C	-	No cracks	IEC 60811-504
Cold bend test at -40°C	-	No cracks	IEC 60811-504
Elongation at break at -30°C	%	45	IEC 60811-505
Elongation at break at -40°C	%	25	IEC 60811-505
■ Heat tests	Unit	Typical value	Test method
Heat shock 4h at 200°C	-	Pass	IEC 60811-508
Variation in tensile strength	%	+14	IEC 60811-501
Variation in elongation at break	%	-10	IEC 60811-501
■ Hot set test at 200°C / 15min / 0,2MPa	Unit	Typical value	Test method
Elongation under load	%	20	IEC 60811-507
Residual elongation	%	3	IEC 60811-507

ELECTRICAL PROPERTIES*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity	Ω cm	10¹¹	IEC 60167
Dielectric constant at 50Hz	-	3.9	IEC 250

RESISTANCE***

■ Fluid IRM 902 24h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-25	IEC 60811-404
Variation in elongation at break	%	-15	IEC 60811-404
■ Fluid IRM 902, 72hr@100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-28	IEC 60811-404
Variation in elongation at break	%	-18	IEC 60811-404
■ Fluid IRM 903 168h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	-28	IEC 60811-404
Variation in elongation at break	%	-26	IEC 60811-404

BURNING PROPERTIES*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	38	ASTM D 2863 A
Halogen content	%	<0,1HCl	IEC 754-1
Temperature index	°C	300	ASTM D 2863 D
Toxicity index	-	1	NES 713
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	5.6	IEC 60754-2
Conductivity (max.)	µS/mm	0.9	IEC 60754-2

* pressed plaques

** extruded tapes

*** cross-linked plaques or tapes

Processing Guide

■ **Screw configuration**

Good results have been achieved with screws designed to process LSFOH compounds. Shear should be kept as low as possible. Low compression is preferred

■ **Screw cooling**

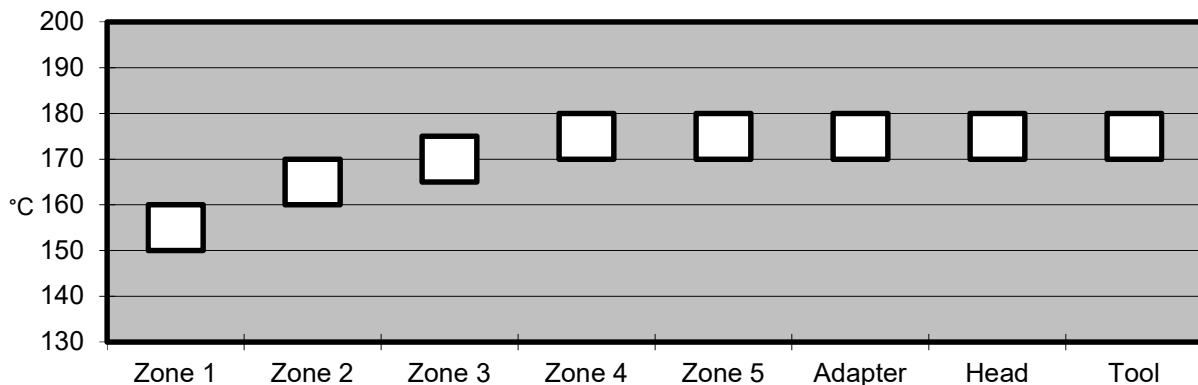
For high line speeds, cooling the screw to around 100°C could be effective, although this could lead to pulsation.

■ **Extrusion dies**

For pressure extrusion, normal dies are recommended. Too small clearance may result in excessive pressure and a 'rough' surface. Too large clearance could result in diameter fluctuations. Die angles are not very critical.

■ **Temperature profile extruder**

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



■ **Maximum mass temperature**

200°C

■ **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 radiation dose**

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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