










Radiation cross-linkable, halogen-free, flame retardant insulation and sheathing compound

■ Compound class Insulation / sheathing	■ Compound category 	■ Flame retardant ATH
■ Standards UL 3266	UL 3271	
■ Operating temperature [C°] -40 to 125	■ Oil resistance level ★	
■ Typical applications This compound is an ideal choice for the insulation of heat-resistant wires and cables for general applications in railway systems, nuclear power stations, engine compartments and other areas.		
		
General Applications		Green Energy
■ Features		
 Flame retardant	 Halogen-free	 Low smoke
 High temperature Resistant	 Flexible	 Flexible at low temperatures

PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1.41	DIN EN ISO 1183-1A
Hardness*	Shore D	43	DIN ISO 48-4
Melt Flow Index (160°C; 10kg)	g/10 min	7.0	DIN EN ISO 1133

MECHANICAL PROPERTIES

■ Before crosslinking**	Unit	Typical value	Test method
Tensile strength	N/mm ²	>8.5	IEC 60811-501
Elongation at break	%	>650	IEC 60811-501
■ After crosslinking ***	Unit	Typical value	Test method
Tensile strength (100-150kGy)	N/mm ²	17.0	IEC 60811-501
Elongation at break (100-150kGy)	%	350	IEC 60811-501
■ After ageing in air oven 168h at 158°C***	Unit	Typical value	Test method
Variation in tensile strength	%	10.0	IEC 60811-401
Variation in elongation at break	%	-2.0	IEC 60811-401

THERMAL PROPERTIES***

■ Low temperature tests	Unit	Typical value	Test method
Brittleness temperature (125kGy)	°C	-32,4	ASTM D 746-14
■ Hot set test at 200°C / 15min / 0,2MPa	Unit	Typical value	Test method
Elongation under load	%	20.0	IEC 60811-507
Residual elongation	%	10.0	IEC 60811-507

ELECTRICAL PROPERTIES*

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity	Ω cm	4.10¹²	ASTM D 257
Dielectric strength	kV/mm	25	ASTM D 149
Dielectric constant at 50Hz at 20°C	-	5	ASTM D 150
Dissipation factor at 50Hz at 20°C	-	0.025	ASTM D 150
Dielectric test (1.5 kV ; 1 minute)	-	Pass	UL

BURNING PROPERTIES*

■ Main burning properties	Unit	Typical value	Test method
LOI	%	31	ASTM D 2863 A
Halogen content	%	0	IEC 754-1
Temperature index	°C	225	ASTM D 2863 D
Toxicity index	-	2	EN 50305
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	4.5	IEC 60754-2
Conductivity (max.)	μS/mm	2	IEC 60754-2

* pressed plaques

** extruded tapes

*** cross-linked plaques or tapes

PROCESSING GUIDE

■ **Screw configuration**

Good results have been achieved with ‘halogen-free’ screws, PVC screws and barrier type screws (BM) having high flights and a L/D-ratio > 24

■ **Screw cooling**

For high line speeds, cooling the screw to around 80°C could be effective, although this could lead to pulsation.

■ **Extrusion dies**

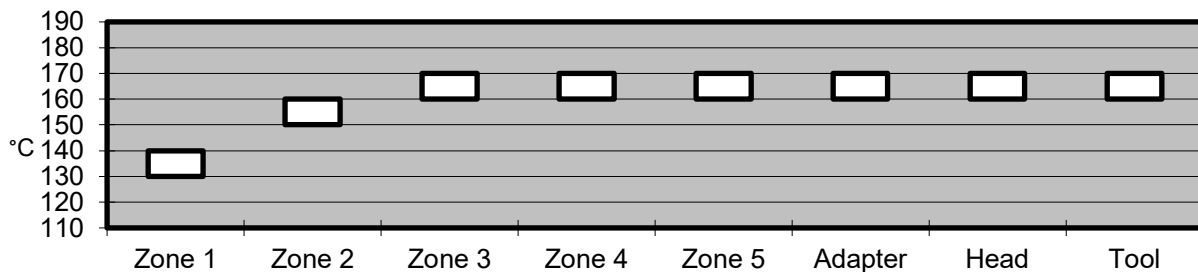
For pressure extrusion, normal dies are recommended.

■ **Die opening**

Die opening should be 1-5% below the required OD of the wire.
Little or no die land.

■ **Temperature profile extruder**

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



■ **Maximum mass temperature**

180°C

■ **Conductor pre-heating**

Pre-heating between 100°C-140°C to achieve maximum properties of elongation at break of the insulation.

■ **Wire/conductor**

Tin-coated

■ **Quenching**

After extrusion it should be possible to achieve an elongation at break of > 500%. By using wire pre-heating and or quenching in hot-water in the first cooling compartment, this may be optimized

■ **Drying**

Pre-dry at 50°C during 3 hrs, if necessary

■ **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**

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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