Technical data sheet

Mecoline IS TP 1002 F

Halogen-free, thermoplastic, flame retardant insulation and sheathing compound for low and medium voltage cables.

■ Compound class	■ Compound category	■ Flame retardant
Insulation / sheathing	TP	ATH

■ Standards

BS 6724	BS 7655 section 6.1 LTS 2	DIN VDE 0281 part 14 TI 6, TM 7
DIN EN 50363-7 TI 6, TI7	DIN EN 50363-8 TM7	IEC 60092- 360 SHF 1
VDE 0207 part 24 HM2, HM4	VDE 0250 part 215 HM5	VDE 0276 part 604 HM 4

■ Operating temperature [C°]	■ Oil resistance level
-30 to 90	★★

■ Typical applications

Halogen-free, low smoke, thermoplastic, flame retardant compound for the sheathing and insulation of low and medium voltage cables in General Installation applications.

Installation

Shipboard

Telecomm., Optical Fibre, Coaxial

■ Features

Flame retardant

Halogen-free

Low smoke

PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm³	**1,58**	DIN EN ISO 1183-1A
Hardness*	Shore D	**55**	DIN ISO 7619-1
Mooney viscosity, ML (1+4) 150°C	MU	**38**	DIN ISO 289-1
Melt Flow Index (150°C; 21,6kg)	g/10 min	**7,0**	DIN EN ISO 1133

THERMAL PROPERTIES **

■ Heat tests	Unit	Typical value	Test method
Hot pressure test: penetration 6h at 80°C	%	**1**	IEC 60811-508
Hot pressure test: penetration 6h at 90°C	%	**8**	IEC 60811-508

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ELECTRICAL PROPERTIES *

■ Major electrical properties	Unit	Typical value	Test method
Volume resistivity at 23°C / 500V	Ω cm	**1,5 x 10^{12}**	DIN IEC 60093
Voltage resistance at 50 Hz / 23°C	kV/mm	**20,4**	IEC 60243-1
Dielectric constant at 23 °C/3 V/100 Hz	[ ]	**4,76**	IEC 60250 (1969)
Dielectric constant at 23 °C/3 V/1 MHz	[ ]	**3,99**	IEC 60250 (1969)

MECHANICAL PROPERTIES **

■ Thermoplastic	Unit	Typical value	Test method
Tensile strength	N/mm²	**11,0**	IEC 60811-501
Elongation at break	%	**186**	IEC 60811-501
■ After ageing in air oven 240h at 100°C	**Unit**	**Typical value**	**Test method**
Variation in tensile strength	%	**+5,5**	IEC 60811-401
Variation in elongation at break	%	**-2,7**	IEC 60811-401
■ After ageing in air oven 168h at 110°C	**Unit**	**Typical value**	**Test method**
Variation in tensile strength	%	**-10,0**	IEC 60811-401
Variation in elongation at break	%	**-3,8**	IEC 60811-401
■ After ageing in air oven 168h at 136°C	**Unit**	**Typical value**	**Test method**
Variation in tensile strength	%	**+6,5**	IEC 60811-401
Variation in elongation at break	%	**-10,1**	IEC 60811-401

RESISTANCE **

■ Fluid IRM 902 6h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	**-33,6**	IEC 60811-404
Variation in elongation at break	%	**-11,3**	IEC 60811-404
■ Fluid IRM 902 20h at 50°C	**Unit**	**Typical value**	**Test method**
Variation in tensile strength	%	**-9,8**	IEC 60811-404
Variation in elongation at break	%	**-0,5**	IEC 60811-404
Variation in weight	%	**6,0**	IEC 60811-404
■ Fluid IRM 902 72h at 50°C	**Unit**	**Typical value**	**Test method**
Variation in tensile strength	%	**-25,5**	IEC 60811-404
Variation in elongation at break	%	**-18,6**	IEC 60811-404
Variation in weight	%	**10,7**	IEC 60811-404

BURNING PROPERTIES *

■ Main burning properties	Unit	Typical value	Test method
LOI	%	**37**	ASTM D 2863 A
Temperature index	°C	**295**	NES 715

* pressed plaques, 155°C / 5 min.
** extruded tapes

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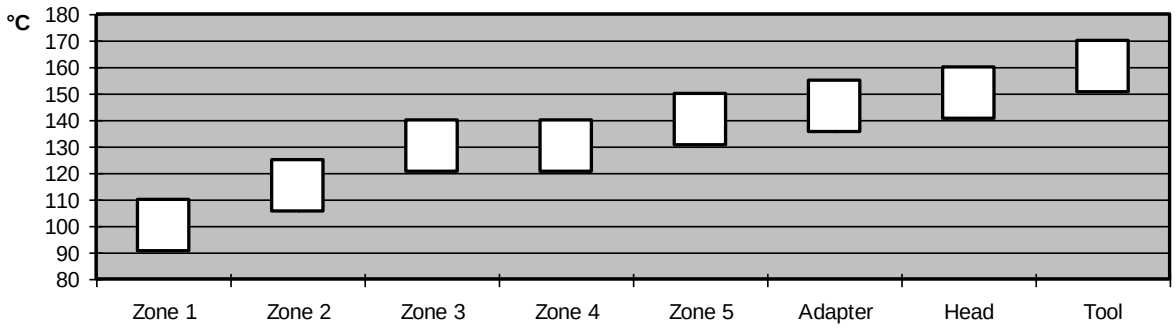
PROCESSING GUIDE

■ **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**	160 – 170°C
■ **Conductor pre-heating**	Pre-heating between 100°C-140°C to achieve maximum properties of elongation at break of the insulation.
■ **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.

STORAGE INFORMATION

■ **Form & packaging**	Pellets in sizes 2.8mm & 5.5mm Moisture-resistant bags (25kg) & octabins (alu-innerliner, max. 1250kg)
■ **Shelf life**	1 year after date of manufacturing

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