

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

■ Compound class Sheathing	■ Compound category TP	■ Flame retardant MDH
■ Standards DIN EN 50363-8 TM7 IEC 60092-360 SHF 1 UL 1277 Oil Res I	DIN VDE 0276-604 HM4 VDE 0207 part 24 HM2, HM4 UL 1277 Oil Res II	DIN EN 50525-3-11 TM7 VDE 0250 part 215 HM5 IEC 60502-1 ST8
■ Operating temperature [°C] -75 to 105	■ Oil resistance level ★★★★★	

■ Typical applications

Halogen-free, low smoke, thermoplastic, highly oil and extra fuel resistant, flame retardant compound for the sheathing of low and medium voltage cables for moving applications. (e. g. Green Energy/Shipboard)



Shipboard



Green Energy

■ Features



Flame retardant



Halogen-free



Low smoke



Flexible



Flexible at low temperatures



Oil resistant

PHYSICAL PROPERTIES

■ Physical properties	Unit	Typical value	Test method
Density*	g/cm ³	1.60	DIN EN ISO 1183-1A
Hardness*	Shore A	88	DIN ISO 48-4
Mooney viscosity, ML (1+4) 160°C	MU	71	DIN ISO 289-1
■ Water absorption **	Unit	Typical value	Test method
Water absorption after 24h at 90°C	mg/cm ²	0.99	DIN EN 60811-402
Water absorption after 240h at 70°C	mg/cm ²	0.97	DIN EN 60811-402

MECHANICAL PROPERTIES

■ Thermoplastic	Unit	Typical value	Test method
Tensile strength **	N/mm ²	15,0	IEC 60811-501
Elongation at break **	%	200	IEC 60811-501
Pulley flexing test	Cycles	>30.000	EN 50 396 cl. 6.2

■ After ageing in air oven 168h at 136°C **	Unit	Typical value	Test method
Variation in tensile strength	%	-11.3	IEC 60811-401
Variation in elongation at break	%	-15.5	IEC 60811-401

THERMAL PROPERTIES **

■ Low temperature tests	Unit	Typical value	Test method
Cold bend test at -40°C	-	No cracks	IEC 60811-504
Brittleness temperature	°C	-75	ASTM D 746
Elongation at break @ -40°C	%	37	DIN EN ISO 527
Elongation at break @ -50°C	%	24	DIN EN ISO 527
■ Heat tests	Unit	Typical value	Test method
Hot pressure test: penetration 6h at 90°C	%	14	IEC 60811-508
Hot pressure test: penetration 6h at 100°C	%	16	IEC 60811-508
Hot pressure test: penetration 6h at 120°C	%	21	IEC 60811-508
Heat shock 1h at 150°C	%	Pass	IEC 60811-509

RESISTANCE **

■ Fluid IRM 902 168h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-3.3	IEC 60811-404
Variation in elongation at break	%	-16.8	IEC 60811-404
Variation in weight	%	+9.0	IEC 60811-404
■ Fluid IRM 902 100h at 150°C	Unit	Typical value	Test method
Variation in tensile strength	%	-26.0	IEC 60811-404
Variation in elongation at break	%	+5.0	IEC 60811-404
Variation in weight	%	+17.0	IEC 60811-404
■ Fluid IRM 902 1440h at 80°C	Unit	Typical value	Test method
Variation in tensile strength	%	-6.7	IEC 60811-404
Variation in elongation at break	%	-15.5	IEC 60811-404
Variation in weight	%	7.0	IEC 60811-404
■ Fluid IRM 903 168h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	-10.0	IEC 60811-404
Variation in elongation at break	%	-23.6	IEC 60811-404
Variation in weight	%	+12.0	IEC 60811-404
■ Diesel 24h at 23°C	Unit	Typical value	Test method
Variation in tensile strength	%	-11.3	IEC 60811-404
Variation in elongation at break	%	-14.5	IEC 60811-404
Variation in weight	%	+5.0	IEC 60811-404
■ Diesel 24h at 100°C	Unit	Typical value	Test method
Variation in tensile strength	%	-31.3	IEC 60811-404
Variation in elongation at break	%	-15.5	IEC 60811-404
Variation in weight	%	+18.0	IEC 60811-404

■ Diesel 168h at 70°C	Unit	Typical value	Test method
Variation in tensile strength	%	-13.3	IEC 60811-404
Variation in elongation at break	%	-26.5	IEC 60811-404
Variation in weight	%	+15.0	IEC 60811-404
■ Ozone resistance	Unit	Typical value	Test method
Method A (250 ppm, 24h, 25°C)	%	no cracks	EN 50396

BURNING PROPERTIES *

■ Main burning properties	Unit	Typical value	Test method
LOI	%	40	ASTM D 2863 A
Amount of halogen acid gas	mg/g	<5	IEC 60754-1
Toxicity index	-	4.57	EN 50305
■ Acid gas emission	Unit	Typical value	Test method
Corrosivity: pH (min.)	-	6.45	IEC 60754-2
Conductivity (max.)	µS/mm	0.72	IEC 60754-2

* pressed plaques, 165°C / 5 min.

** extruded tapes

PROCESSING GUIDE

■ **Extruder Type**

Standard extruders for elastomeric or thermoplastic processing.

■ **Screw configuration**

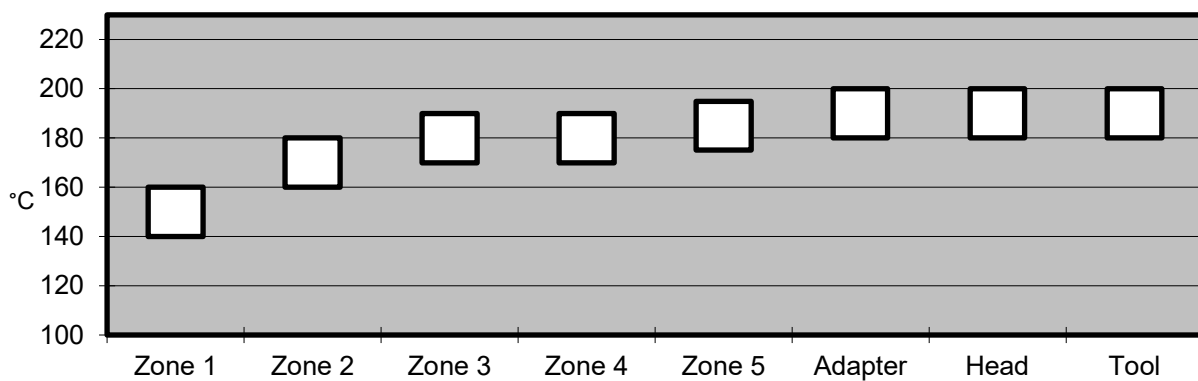
Low compression screw with L/D of 20 to 25 and compression ratio of 1:1.2

■ **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**

200 – 210°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.

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.

S TP 1034 F TDS ENG rev12 *25.02.2021* JT