



# RavaSafe® ZH-LSF 2

## Ravago Manufacturing Europe - Thermoplastic

### General Information

#### Product Description

Ravasafe ZH-LSF 2 is a thermoplastic zero halogen, low smoke flame retardant compound designed for general purpose insulation and sheathing application. Ravasafe ZH-LSF 2 combines excellent flame retardancy, good processing and good mechanical properties.

Typical Application: Telecom, LV power cable application Standard norms (type of material)\* : EN 50636 (T17, TM7), VDE 0207 / 0250 (HM4, HI2) , BS 7655 (LTS 2) , IEC 60502 (ST8), IEC 60092-360 (SHF1)

#### General

Material Status	• Commercial: Active		
Availability	• Europe	• Latin America	• North America
Additive	• Flame Retardant		
Features	• Flame Retardant	• Halogen Free	
	• Good Processability	• Low Smoke Emission	
Uses	• Wire & Cable Applications		
Appearance	• Colors Available		
Processing Method	• Extrusion		

### Properties <sup>1</sup>

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.53	g/cm <sup>3</sup>	ASTM D792
Density (23°C)	1.53	g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (MFR) <sup>2</sup> (150°C/21.6 kg)	7.9	g/10 min	ISO 1133
Water Immersion - 7 days (70°C)	1.40	mg/cm <sup>2</sup>	IEC 60811-402
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress <sup>3</sup>	10.6	MPa	IEC 60811-501
Tensile Strain <sup>3</sup> (Break)	180	%	IEC 60811-501
Elastomers	Nominal Value	Unit	Test Method
Tear Strength (23°C)	6.50	kN/m	BS 6469 99.1
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D, 15 sec)	49		ASTM D2240
Shore Hardness (Shore D, 15 sec)	49		ISO 868
Thermal	Nominal Value	Unit	Test Method
Temperature Index	316		ISO 4589-3
Aging	Nominal Value	Unit	Test Method
Change in Tensile Stress			IEC 60811-501
100°C, 168 hr	0.0	%	
110°C, 168 hr	3.0	%	
120°C, 168 hr	7.0	%	
Change in Tensile Strain at Break			IEC 60811-501
100°C, 168 hr	-17	%	
110°C, 168 hr	-18	%	
120°C, 168 hr	-18	%	

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Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	2.4E+16	ohms	ASTM D257
Volume Resistivity	7.8E+14	ohms·cm	ASTM D257
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	39	%	ASTM D2863
Oxygen Index	39	%	ISO 4589-2
Acid Gas Emission Conductivity	< 2.50	μS/mm	IEC 60754-2
Acid Gas Emission pH	> 4.30		IEC 60754-2
Halogen Content	< 1	%	IEC 60754-1
Smoke Density <sup>4</sup>			ASTM E662
Flaming mode : 1.50 mm	34		
Non Flaming mode : 1.50 mm	290		
Additional Information	Nominal Value	Unit	Test Method
Pressure Test at High Temperature - 6h (90°C)	8.0	%	IEC 60811-508

### Processing Information

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	120	°C
Cylinder Zone 2 Temp.	130	°C
Cylinder Zone 3 Temp.	140	°C
Cylinder Zone 4 Temp.	150	°C
Cylinder Zone 5 Temp.	150	°C
Adapter Temperature	155	°C
Head Temperature	160	°C
Die Temperature	165	°C

#### Extrusion Notes

Ravasafe ZH-LSF 2 is a product able to run on standard extruders, based on low compression screw and head. This compound is supplied in aluminum foil bags. Pre-drying is not required before extrusion process. Ravasafe ZH-LSF 2 is colorable. A full range of specific color masterbatches (RAVACOLOR™) and additive masterbatches (RAVABOOST™) are available.

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Procedure B

<sup>3</sup> 200 mm/min

<sup>4</sup> Ds max