



# RavaSafe® ZH-LSF 22

## Ravago Manufacturing Europe - Thermoplastic

### General Information

#### Product Description

RavaSafe® ZH-LSF 22 is a thermoplastic zero halogen, low smoke flame retardant compound designed for general purpose insulation and sheathing application. This compound combines excellent processing, good flame retardancy and good mechanical properties.

Typical Application: Telecom, LV power cable application. Standard norms (type of material) : EN 50363 (T17), VDE 0207 / 0250 (HM4, HI2) , BS 7655 (LTS 2) , IEC 60502 (ST8).

#### General

|                   |   |
|-------------------|---|
| Material Status   | • Commercial: Active  |
| Availability      | • Europe • Latin America • North America  |
| Additive          | • Flame Retardant   |
| Features          | • Excellent Processability • Halogen Free<br>• Flame Retardant • 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                             | 1.54          | g/cm <sup>3</sup>  | ASTM D792     |
| Density (23°C)   | 1.54          | g/cm <sup>3</sup>  | ISO 1183      |
| Melt Mass-Flow Rate (MFR) <sup>2</sup> (150°C/21.6 kg) | 3.0           | g/10 min           | ISO 1133      |
| Water Immersion - 7 days (70°C)                        | 0.300         | mg/cm <sup>2</sup> | IEC 60811-402 |
| Mechanical   | Nominal Value | Unit               | Test Method   |
| Tensile Stress <sup>3</sup>                            | 10.5          | MPa                | IEC 60811-501 |
| Tensile Strain <sup>3</sup> (Break)                    | 170           | %                  | IEC 60811-501 |
| Elastomers   | Nominal Value | Unit               | Test Method   |
| Tear Strength (23°C)                                   | 6.00          | kN/m               | BS 6469 99.1  |
| Hardness   | Nominal Value | Unit               | Test Method   |
| Durometer Hardness (Shore D, 15 sec)                   | 50            |                    | ASTM D2240    |
| Shore Hardness (Shore D, 15 sec)                       | 50            |                    | ISO 868       |
| Aging  | Nominal Value | Unit               | Test Method   |
| Change in Tensile Stress                               |               |                    |               |
| 70°C, 4 hr, in IRM 902 Oil                             | -25           | %                  | IEC 60811-404 |
| 120°C, 168 hr  | -6.0          | %                  | IEC 60811-501 |
| Change in Tensile Strain at Break                      |               |                    |               |
| 70°C, 4 hr, in IRM 902 Oil                             | -10           | %                  | IEC 60811-404 |
| 120°C, 168 hr  | -30           | %                  | IEC 60811-501 |

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| 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 |

### Processing Information

| Extrusion             | Nominal Value | Unit |
|-----------------------|---------------|------|
| Cylinder Zone 1 Temp. | 130           | °C   |
| Cylinder Zone 2 Temp. | 140           | °C   |
| Cylinder Zone 3 Temp. | 150           | °C   |
| Cylinder Zone 4 Temp. | 160           | °C   |
| Cylinder Zone 5 Temp. | 160           | °C   |
| Adapter Temperature   | 165           | °C   |
| Head Temperature      | 170           | °C   |
| Die Temperature       | 170           | °C   |

### Extrusion Notes

RavaSafe® ZH-LSF 22 is a product able to run on standard extruders, based on low compression screw and head. This compound is supplied in aluminium foil bags. Pre-drying is not required before extrusion process.

### 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