



SHAKUN POLYMERS PRIVATE LIMITED

**SPL-ZHFR-4600****ZERO-HALOGEN LOW SMOKE FLAME RETARDANT SHEATHING
COMPOUND****Description**

SPL-ZHFR-4600 is a Zero Halogen, Low Smoke, **highly Flame Retardant**, Thermoplastic RoHS compliance, polyolefin based COMPOUND for sheathing of cables having diameter <15 mm.

Specifications

Cables manufactured with **SPL-ZHFR-4600** according to standard technology meet the following industrial cable specifications.

- IEC 60332-1 / IEC 60332-2 /
- IEC 60332-3 Cat C

Features

SPL-ZHFR-4600 consists of special thermoplastic polymers, inorganic filler and other additives. It shows good processing and physical properties.

SPL-ZHFR-4600 provides following properties

- High Limiting Oxygen Index and Temperature Index
- Good mechanical properties
- Long-term reliability and Good UV Stability
- Excellent flame retardancy and low smoke

Properties

| <i>Property</i> | <i>Test Method</i> | <i>Unit</i> | <i>Typical Value</i> |
|---|--------------------|-------------------|----------------------|
| Density at 27°C | ASTM D 792 | g/cm ³ | 1.58 |
| Melt Index at 21.6 kg & 160°C | ASTM D 1238 | g/10min | 5 |
| Hardness | ASTM D 2240 | Shore D | 53 |
| Tensile Strength at break | IEC 60811-1-1 | MPa | 12 |
| Elongation at break | IEC 60811-1-1 | % | 170 |
| Change of Tensile Properties after heat ageing (7 days at 100°C) | IEC 60811-1-2 | % | ± 20 |
| Retention of Tensile Properties after UV-Exposure for 720 Hours Tensile Strength Elongation | ASTM G 154 | % | 86 76 |
| Limiting Oxygen Index | ASTM D 2863 | % O ₂ | 41 |
| Temperature Index | ASTM D 2863 | ° C | >325 |
| Smoke Density Rating | ASTM D 2843 | % | 7 |
| Halogen Acid Gas Generation | IEC 60754-1 | % | Nil |
| Toxicity Index | NES 713 | - | 1.5 |
| Test on Gases Evolved During Combustion pH. | IEC 60754-2 | pH | 5.5 |
| Conductivity | | μs / mm | 1.4 |

*Tensile Properties on 1 mm Extruded Tape

* Data should not be used for specification work

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Processing Techniques

In general, it is recommended that **SPL-ZHFR-4600** can be processed using low C/R screw rather than regular polyethylene screw. The recommended extrusion temperature of **SPL-ZHFR-4600** is in the range of 130 – 170°C. Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Predrying of compound in dehumidifying drier for 4 hours at 70°C is recommended to obtain a cable having smooth and glossy appearance.

Colorability

SPL-ZHFR-4600 is a Colorable Compound with PE/EVA base master batch and we suggest to dry the colour master before use at 70 °C for 2 hrs.

Packaging

SPL-ZHFR-4600 is available in the form of free flowing pellets and supplied in bags of moisture resistant material with a net content of 30 Kgs. Material also available in Jumbo Boxes with a net content of 950 Kgs.

Storage & shelf life

The product/compound should remain in

- Sealed condition
- Without exposing to direct sunlight and temperature not exceeding 45°C

Shelf life of the compound is 12 months from the date of manufacture.

Product alteration may occur due to extended period of storage.

Shakun accepts no liability of any kind in case the above mentioned storage conditions are not fulfilled.

Safety

SPL-ZHFR-4600 is not classified as a dangerous preparation.

The product is supplied in form of pellets of about 2 – 3 mm in size and can be readily handled with commercially available equipment. All handling and transport of the product may generate some dust and fines, which constitute a potential risk for dust explosion. Therefore, all instruments in the system should be properly grounded. Properly designed equipment and good storage will reduce the potential risk. Please, check and follow local disposal regulations!

Inhalation of any type of dust may irritate the air passages and should be avoided. For hot products: immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat.

In case of adverse exposure to melting products formed at elevated temperatures, immediately remove, the affected victim from exposure.

Sweep up spilled granules and place in suitable containers for recycle or disposal. Consult an expert on disposal or recovered material and ensure conformity to local disposal regulations.

The product is intended for industrial use only. A Material Safety Datasheet is available on request. Please contact our Technical Team of SHAKUN POLYMERS PRIVATE LTD., for more details on various aspects of safety, recovery and disposal of the product.

This information is to the best of our knowledge accurate but all recommendations or suggestions are made without guarantee or legal liabilities since the conditions of use are beyond our control. The typical values given do not constitute specification for the product but represent typical analytical values.

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