



# SHAKUN POLYMERS LIMITED

## SPL-ZHFR-3400



### ZERO-HALOGEN LOW SMOKE FLAME RETARDANT COMPOUND

#### Description

**SPL-ZHFR-3400** is a zero halogen, low smoke, flame retardant thermoplastic compound, polyolefin based for insulation applications at high extrusion speeds. It has good electrical properties and high thermal stress resistance.

#### Specifications

Cables manufactured with **SPL-ZHFR-3400** according to standard technology meet the following industrial cable specifications.

- EN:50363-7:2005 Type TI 6 and TI 7
- IEC 332-1 / IEC 332-2

#### Features

**SPL-ZHFR-3400** consists of special thermoplastic polymers, inorganic filler and other additives. It shows good processing and physical properties.

**SPL-ZHFR-3400** provides following properties

- Good abrasion resistance
- Excellent mechanical and electrical properties
- Processed at High Extrusion Speed
- Long-term reliability
- 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 <sup>3</sup> | 1.42                 |
| Melt Index at 21.6 kg & 160°C  | ASTM D 1238        | g/10min           | 12                   |
| Hardness   | ASTM D 2240        | Shore D           | 47                   |
| Tensile Strength at break (50 mm/min)                                  | ASTM D 638         | MPa               | 14                   |
| Elongation at break (50 mm/min)  | ASTM D 638         | %                 | 220                  |
| Variation of Tensile Properties after heat ageing (7 days at 100°C)    | ASTM D 638         | %                 | ± 20                 |
| Variation in Tensile Properties after water immersion (7 days at 70°C) | ASTM D 638         | %                 | ± 30                 |
| Limiting Oxygen Index  | ASTM D 2863        | % O <sub>2</sub>  | 34                   |
| Temperature index  | ASTM D 2863        | ° C               | 270                  |
| Smoke Density Rating   | ASTM D 2843        | %                 | < 20                 |
| Halogen Acid gas generation  | IEC 60754-1        | %                 | < 0.5                |
| Test on Gases Evolved During Combustion pH.                            | IEC 60754-2        | pH                | 5.5                  |
| Conductivity   |                    | μs / mm           | 8                    |
| Volume Resistivity   | ASTM D 257         | Ohm-cm            | 1 X 10 <sup>14</sup> |
| Pressure Test at 80°C, 4 hrs   | IEC 60811-3-1      | %                 | 40                   |

\*Tensile Properties on 1 mm Extruded Tape

\* Data should not be used for specification work

**## 2 ##****Processing Techniques**

We expect that **SPL-ZHFR-3400** can be processed in a wide range of commercially available fabrication equipment.

In general, it is recommended that this product be processed using low C/R rather than regular polyethylene screw. Besides, the required extrusion melt temperature of **SPL-ZHFR-3400** is suitable for the range of 120 – 170°C. Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Be cautious! Do not overheat more than 180°C. 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-3400** is a Colorable Compound.

**Packaging**

**SPL-ZHFR-3400** 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 900 Kgs.

**Safety**

**SPL-ZHFR-3400** 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 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 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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