



## SHAKUN POLYMERS PRIVATE LIMITED



## SPL-ZHFR-4400

## ZERO-HALOGEN LOW SMOKE FLAME RETARDANT SHEATHING COMPOUND

### Description

**SPL-ZHFR-4400** is a Zero Halogen, Low Smoke, Flame Retardant Thermoplastic RoHS compliance Compound, polyolefin based for Insulation / Sheathing applications having diameter <15mm.

**SPL-ZHFR-4400** has excellent flame resistance properties.

### Specifications

Cables manufactured with **SPL-ZHFR-4400** according to standard technology meet the following industrial cable specifications.

- IEC 332-1 / IEC 332-2 / IEC 332-3, CAT C

### Features

**SPL-ZHFR-4400** consists of special thermoplastic polymers, inorganic filler and other additives. It shows good processing and physical properties.

**SPL-ZHFR-4400** provides following properties

- Good abrasion resistance
- High Oxygen Index and Temperature Index
- 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 <sup>3</sup>	1.50
Melt Index at 21.6 kg & 160°C	ASTM D 1238	g/10min	4
Hardness	ASTM D 2240	Shore D	52
Tensile Strength at break	IEC 60811-1-1	MPa	14
Elongation at break	IEC 60811-1-1	%	180
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	ASTM G 154	%	80
Tensile Strength			
Elongation			75
Limiting Oxygen Index	ASTM D 2863	% O <sub>2</sub>	36
Temperature Index	ASTM D 2863	° C	>350
Smoke Density Rating	ASTM D 2843	%	<10
Halogen Acid Gas Generation	IEC 60754-1	%	Nil
Toxicity Index	NES 713	-	1.8
Test on Gases Evolved During Combustion pH.	IEC 60754-2	pH	5.5
Conductivity		μs / mm	1.5
Pressure Test at 90°C, 4 hrs	IEC 60811-3-1	%	20

\*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-4400** can be processed using low C/R screw rather than regular polyethylene screw. The recommended extrusion temperature of **SPL-ZHFR-4400** is in the range of 130 – 200°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-4400** 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-4400** 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-4400** 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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