



SHAKUN POLYMERS PRIVATE LIMITED



SPL-ZHFR-5300 XL

ZERO-HALOGEN LOW SMOKE FLAME RETARDANT COMPOUND

Description

SPL-ZHFR-5300 XL is a Zero Halogen, Low smoke, Flame Retardant, Silane grafted, moisture curable by addition of a catalyst master batch cross-linkable **Oil resistance** compound for sheathing applications. It has good electrical properties and high thermal stress resistance.

Specifications

Cables manufactured with **SPL-ZHFR-5300 XL** according to standard technology meet the following industrial cable specifications.

- IEC 60092-359 & 360 SHF2
- EN 50363-6, EM 8

Features

SPL-ZHFR-5300 XL consists of special polymers, inorganic filler and other additives. It shows good processing and physical properties. Cross linking is activated by heat and moisture after extrusion.

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	1.44
Hardness	ASTM D 2240	Shore D	55
Tensile Strength at break	IEC 60811-1-1	MPa	14
Elongation at break	IEC 60811-1-1	%	180
Variation of Tensile Properties after heat ageing (7 days at 135°C)	IEC 60811-1-2		
- Tensile strength		%	+25
- Elongation		%	-24
Variation in Tensile Properties after ageing in air bomb (at 127°C for 40 hrs, 0.55 MPa)	IEC 60811-1-2		
- Tensile strength		%	+15
- Elongation		%	-12
Variation of Tensile Properties after Oil ageing in IRM 902 oil (24 hrs at 100°C)	IEC 60811-2-1		
- Tensile strength		%	-22
- Elongation		%	+14
Variation of Tensile Properties after Oil ageing in IRM 902 oil (168 hrs at 100°C)	IEC 60811-2-1		
- Tensile strength		%	-27
- Elongation		%	+18
Hot Set Elongation, @ 200°C, 0.2 N/mm ² load	IEC 60811-2-1	%	60
Elongation after unloading	IEC 60811-2-1	%	5
Hot Set Elongation, @ 250°C, 0.2 N/mm ² load	IEC 60811-2-1	%	55
Elongation after unloading	IEC 60811-2-1	%	5
Limiting Oxygen Index	ASTM D 2863	% O ₂	31
Temperature Index	ASTM D 2863	° C	270
Smoke Density Rating	ASTM D 2843	%	8
Halogen Acid Gas Generation	IEC 60754-1	%	Nil
Test on Gases Evolved During Combustion pH.	IEC 60754-2	pH	5.5
Conductivity		μs / mm	1.6
Volume Resistivity	ASTM D 257	Ohm-cm	1 x 10 ¹⁵
Pressure Test at 100°C, 4 hrs	IEC 60811-3-1	%	24

* Tensile properties on 1 mm Tape extruded

* Data should not be used for specification work.

Processing Techniques

Catalyst (CTMB) dosage is 3 to 5% by weight and blending must be done just before using (2-3 hours max.), preferably in the extruder hopper. Catalyst doesn't need any predrying.

It is recommended that this product be processed using a low compression screw with a L/D of 20-24:1. Extrusion temperatures of 120 – 155 °C on Zones, 160 °C on Neck, 165°C on Crosshead, 170°C on Die are recommended. **Do not dry the compound under any circumstances.** **SPL-ZHFR-5300 XL** can be cross linked by immersion in hot water at a temperature of 80 °C for a period of 3-4 hrs approx. This duration can be adjusted depending upon insulation thickness, reel size etc. [Specific recommendations for processing conditions can be determined only when the application and type of equipment are known]. Ensure that the layers of the core do not stick during cross linking process.

Screw: Recommended ZHFR screw with low compression ratio 1.2 - 1.5:1

Colorability

SPL-ZHFR-5300 XL is a Colorable Compound with PE based master batch.

Packaging

SPL-ZHFR-5300 XL is available in the form of free flowing pellets and supplied in bags which will be placed directly on wooden pallet, duly shrink wrapped, completely export worthy.

Material will be supplied with net content of 1380 Kgs as under.

44 Bags of **SPL-ZHFR-5300 XL** @ 30 Kgs =1320 Kgs & 03 Bags of Catalyst (CTMB) @20 Kgs = 60 Kgs

Storage & shelf life

The product/compound should remain in

- Sealed condition
- Without exposing to direct sunlight and temperature not exceeding 35°C

Shelf life of the compound is 09 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-5300 XL 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 evolved 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 at 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 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.

SHAKUN POLYMERS PRIVATE LIMITED

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