



SHAKUN POLYMERS PRIVATE LIMITED



SPL-ZHFR-EXP-422 XL

ZERO-HALOGEN LOW SMOKE FLAME RETARDANT COMPOUND

Description

SPL-ZHFR-EXP-422 XL is a Zero Halogen, Low Smoke, Flame Retardant, Silane Cross-linkable Compound, Polyolefin based for PV insulation and sheathing applications. It has good electrical properties and high thermal stress resistance.

Specifications

Cables manufactured with **SPL-ZHFR-EXP-422 XL** according to standard technology meet the following industrial cable specifications.

- BS EN 50618 : 2014
- IEC 60332-1-2

Features

SPL-ZHFR-EXP-422 XL consists of special thermoplastic polymers, inorganic filler and other additives. It shows good processing and physical properties. Cross-linking is activated by heat and moisture after extrusion.

SPL-ZHFR-EXP-422 XL provides following properties

- Good abrasion resistance
- Zero Halogen acid gas generation
- Long-term reliability
- Good 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	1.47
Hardness	ASTM D 2240	Shore D	48
Tensile Strength at break	IEC 60811-1-1	MPa	12
Elongation at break	IEC 60811-1-1	%	170
Variation of Tensile Properties after Heat Ageing at 150°C for 7 days	IEC 60811-1-2		
Tensile Strength		%	+11
Elongation at break		%	-15
Retention of Tensile Properties after UV-Exposure for 720 Hours			
Tensile Strength	ASTM G 154	%	91
Elongation			90
Hot Set Elongation, @ 250°C, 0.2 N/mm ² load	IEC 60811-2-1	%	30
Elongation after unloading	IEC 60811-2-1	%	-5
Limiting Oxygen Index	ASTM D 2863	% O ₂	32
Temperature Index	ASTM D 2863	° C	275
Smoke Density Rating	ASTM D 2843	%	5
Halogen Acid Gas Generation	IEC 60754-1	%	Nil
Test on Gases Evolved During Combustion pH.	IEC 60754-2	pH	5.6
Conductivity		μs / mm	1.8
Volume Resistivity	ASTM D 257	Ohm-cm	8 x 10 ¹⁴

*All Tensile Data on 1 mm extruded Tape

* Data should not be used for specification work.

Processing Techniques

Catalyst (CTMB-11 AOX) dosage is 4 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 preying.

Do not dry the compound under any circumstances.

In general, it is recommended that this product be processed using a low compression screw (preferably 1.18 to 1.3:1) with a L/D of 20-24:1. It will be better to use breaker plate & wire mesh of size 40 or 60. Extrusion temperatures of 110 - 150°C on Extruder Barrel Zones, 155°C on neck, 160°C on head and 165°C on Die are recommended. SPL-ZHFR-EXP-422 XL can be crosslinked in immersion in hot water at a temperature of 85°C for a period of 3-4 hrs approx. or exposed to low pressure steam with a typical temperature range of 70°C to 85°C. This time period may be varied due to the humidity, thickness of insulation, reel size and temperature [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 with each other during crosslinking process.

Colorability

SPL-ZHFR-EXP-422 XL is a Colorable Compound.

Packaging

SPL-ZHFR-EXP-422 XL 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 will be supplied with net content of 1380 Kgs as under.

44 Bags of SPL-ZHFR-EXP-422 XL @ 30 Kgs =1320 Kgs & 03 Bags of Catalyst (CTMB-11 AOX) @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-EXP-422 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 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 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.

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