



ROGER TECHNOLOGIES LIMITED

TECHNICAL DATA SHEET

Halogen Free Low Smoke Flame Retardant Compound (HFFR/ZHFR/LSZH)

Product Description: R-ZHFR-3406 is a thermoplastic RoHS Compliance, Halogen Free, Flame Retardant, UV resistance Low Smoke, moisture resistance (HFFR/LSZH) cable compound. It combines low smoke density with very good flame retardancy. The compound is based on Non-toxic and Non corrosive elements and it has excellent mechanical & electrical properties.

Specifications: The cables manufactured with R-ZHFR-3406 is meets the following specifications;

* IEC 332-1 / IEC 332-2, * BS 7655: Section 6.1, * VDE 0207 PART 24 HM2 & HM4, * EN 50363-7:2005, * 3m³ smoke density chamber test to IEC 61034-2, IS 17048 BS EN 50290-2-27 for type HM2 and HD 604 for type HM4 & GR TEC 89010:2021.

Applications : R-ZHFR-3406 is intended for Sheathing of Power cables, data & communication Cables & Optical fibre cables. It can also be used in areas to low smoke /low corrosive and low toxic combustion products.

Technical Parameters :

Sr. no.	Parameter	Test Method	Unit	Typical Value
01	Density	ASTM D 792	gm/cc	1.48
02	Melt Flow Index (160°C/21.6 kg)	ASTM D 1238	gm/10 minute	6
03	Tensile Strength at Break	ASTM D 638	Mpa(N/mm ²)	12
04	Tear strength	BS 6469	N/mm	8
05	Elongation at Break	ASTM D 638	%	200
06	Tensile Strength after ageing for 7 days at 100°C	ASTM D 638	%	+ 8
07	Elongation after ageing for 7 days at 100°C	ASTM D 638	%	- 12
08	Hardness	ASTM D 2240	Shore-D	50
09	Limiting Oxygen Index (LOI)	ASTM D 2863	%	34
10	Temperature Index	ASTM D 2863	°C	>290
11	Smoke Density	ASTM D 2843	%	< 10
12	HCl & HBr gas generation	IEC 60754-1	%	NIL
13	Volume Resistivity	ASTM D 257	Ohm-cm	1.1 x 10 ¹⁵
14	pH	IEC 60754-2	pH	> 5
15	Conductivity	IEC 60754-2	Micro s/mm	< 6
16	Water ageing for 7 days at 70°C	BS 6469		
	Variation in tensile strength /Elongation		%	- 18 / -22
17	UV Resistance	IEC 60068-2-5	hours	720
18	Hot pressure Test @90°C for 4 hrs.	IEC 60811-3-1	%	24

*Mechanical properties are tested on 1 mm extruded tape.



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Colorability:

R-ZHFR-3406 is available in natural color, but it is a colorable compound with EVA/PE base color master batch.

Shipment:

R-ZHFR-3406 is supplied in the form of free-flowing granules in 25 kg moisture proof poly bags or 860 kg in octagon.

Processing Guidelines:

- R-ZHFR-3406 can be processed using low C/R screw instead of regular PE screw extruder. The actual temperature profile for extrusion will depend on the machine characteristics but the following can be taken as a guideline; Temperature Profile: 135-145-150-155-160-165°C
- To obtain smooth and glossy cable surface, it is recommended for pre-drying at 70°C for 2 to 4 hours.

Storage and Handling:

- The material should be stored to prevent a direct exposure to sunlight and/or heat.
- The storage area should also be dry and preferably don't exceed 50°C. RTL would not give warranty to bad storage conditions which may lead to quality deterioration such as color change, bad smell and inadequate product performance.
- It is advisable to process goods within 1 year from date of manufacturing.