

PLS FR634-AT

Product Data Sheet

Low Smoke, Halogen Free, Flame Retardant Anti-Termite Compound for unarmoured Power and Communication Cable Jacketing & Insulation

DESCRIPTION

PLS FR634-AT is a thermoplastic, Low Smoke Halogen Free Flame Retardant (LS HFFR) for **unarmoured** cable jacketing & Insulation 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. Further the compound is UV stabilized. It has suitable Termite repellent additives to make compound Anti-termite.

SPECIFICATIONS

The cables manufactured with **PLS FR634-AT** using sound commercial extrusion practice and test protocols shall meet the following specifications;

- IEC 60332-1 / IEC 60332-3 -24 BS 7655: Section 6.1, TYPE LTS4, LTS2
- BS 7211-IEC 60502-1 ST8 (for unarmoured cables)

PROPERTIES

Properties	Test Method	Unit	Typical Value
Density	ASTM D 792	gm/ml	1.40
Melt Flow Index at 160°C at 21.6 kg load	ASTM D 1238	gm/10 minute	15
Mechanical properties before ageing: ⁽¹⁾			
-Tensile Strength	IEC-60811-1-1	N/mm ²	13
-Elongation at break	IEC-60811-1-1	%	220
Variation of mechanical properties after ageing in hot air oven at 100°C for 168 hours: ⁽¹⁾			
-Tensile Strength	IEC-60811-1-2	%	- 10
-Elongation at break	IEC-60811-1-2	%	-9
Variation of mechanical properties after water immersion at 70°C for 168 hours:			
-Tensile Strength	BS6469	%	- 12
-Elongation at break		%	- 10
Tear Strength	BS6469	N/mm	>8
Hardness (Shore-D)	ASTM D2240	Shore-D	42
Pressure test at 80°C & 90°C, Max. Penetration	IEC 60811-3-1	%	<10
Cold bend test at -25°C	IEC 60811-1-4	-	Pass
Cold Elongation Test	IEC 60811-1-4	-	Pass
Limiting Oxygen Index (LOI)	ASTM D 2863	% O ₂	32
Temperature Index	ASTM D 2863	°C	250
Smoke Density	ASTM D 2843	%	8
Halogen Acidic gases evolved	IEC 60754-1	%	<0.5
pH of gases evolved	IEC 60754-2	pH	5.5
Conductivity of gases evolved	IEC 60754-2	μS/mm	<10
Volume Resistivity	ASTM D 257	Ohm-cm	1.4 x 10 ¹⁴

⁽¹⁾ Test made on 0.8mm extruded tape.

Note: Values may differ when tests are performed on extruded jacketing/Insulation/Bedding. Typical values should not be used for specification purposes.

PROCESSING

PLS FR634-AT can be processed on a wide range of extrusion lines (L/D ratio 15-24), equipped with low compression ratioscrews (1.5:1 or less) The actual temperature profile for extrusion will depend on the machine characteristics but the following can be taken as a guideline (please also see process parameter).

HEAD DESIGN

The head design should allow streamlined flow of material

TOOLINGS

In case of tube tooling, the draw down ratio should not exceed 1.5:1 to achieve optimum physical properties and stress free extrusion.

TEMPERATURE PROFILE:

Zone-1	Zone-2	Zone-3	Zone-4	Zone-5	X Head	Die
120°C	130°C	140°C	150°C	160°C	160°C	170°C

RECOMMENDED SCREEN PACK 50 (mesh apertures per linear) or 300 microns

PRE-DRYING

If needed, the compound can be pre dried at 70°C for 2 - 4 hours preferably in a dehumidifying drier to optimize the cable surface finishing.

SHELF LIFE

Under ideal storage conditions, a shelf life of in excess of 12 months can be expected.

STORAGE AND HANDLING

The following precautions should be taken:

- High storage temperature should be avoided.
- Avoid storage outside or direct sunlight.
- Use materials, directly after opening the packaging, any leftover material should be properly sealed and should be used as soon as possible.

COLORABILITY

PLS FR634-AT is available in natural & black color. Use of 1% EVA/PE based color masterbatches including black for coloring purpose has no detrimental effect on the material properties. All masterbatches should be thoroughly dried at 60°C for 8 hours or at 80°C for 4 hours, preferably in a dehumidifying drier.

PACKAGING

PLS FR634-AT is manufactured in pellet form and is available in the 600 kg Al lined octabins.

HEALTH AND SAFETY

PLS FR634 ingredients are essentially non-hazardous in the delivered compound. Fines and dust particles associated with handling or conveying **PLS FR634-AT**, as with all polyolefin's, may under certain circumstances, pose an explosion hazard. Your facilities and procedures must be designed and operated to minimize the exposure of personnel to the dust and the possibility of a dust explosion occurring.