# ZC-5101 Thermoplastic HFFR Insulation Compound

This material is used for thermoplastic low smoke halogen free flame retardant polyolefin insulation materials. It is produced through continuous mixing plasticizing granulation based on polyolefin as matrix, adding inorganic flame retardants, compatilizer, lubricants, antioxidant and other additives. The product has stable properties, good extrusion process ability, mechanical properties and flame retardant properties.

**Application:** Flame retardant polyethylene wire and cable insulation layer; Communication cable, control cable and power cable insulation; Maximum working temperature is 90℃.

## Property

| Item | | Unit | Test method | Typical value |
|---|---|---|---|---|
| Density@23℃ | | g/cm³ | ASTM D792 | 1.43 |
| Tensile strength | | MPa | IEC 60811-1-1 | 11.5 |
| Elongation at break | | % | | 208 |
| Impact embrittlement performance@-25℃ | Failure number | Piece | ASTM D746 | 0/30 |
| After aging @100℃, 168h | Tensile strength | MPa | IEC60811-1-1 | 12.5 |
| | Elongation at break | % | | 170 |
| | Tensile strength variation | % | IEC 60811-1-2 | 8 |
| | Breaking elongation variation | % | | -18 |
| Thermal deformation @90℃, 4h | | % | IEC 60227-1 | 31 |
| Dielectric strength@20℃ | | MV/m | IEC 60243-1 | 28 |
| Volume resistivity@20℃ | | Ω·m | IEC 60093 | $5\times10^{11}$ |
| Smoke density | Flaming | — | ASTM E662 | 60 |
| | No flaming | — | | 200 |
| Oxygen index | | — | ISO 4589 | 35 |
| The halogen acid gas content | | mg/g | IEC 60754-1 | 3 |
| pH | | — | IEC 60754-2 | 5 |
| Electrical conductivity | | μS/mm | IEC 60754-2 | 3 |

## Processing

Recommend to use specific low smoke halogen-free screw. L/D ratio= 25:1, Compression ratio≤1.5:1.

| Zone | Feeding | Head | Melting | Die(Mode) |
|---|---|---|---|---|
| Temperature Range℃ | 110-120 | 120-140 | 140-150 | 155-160 |

- Above temperature is only for reference.

## Storage

Keep at room temperature; Storage environment should be clean, dry and ventilated; Please dry it after a long-time opening; Best use within six months from the date of production.

## Product packing

25kg in moisture resistant aluminum laminated bags with composite paper bags outside; palletized bottom.

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