

Product Information:

SX-4R1 is UV thermoplastic, flame retardant and halogen free compound on polyolefinic basis. It is used for flexible sheathing and bedding cables where resistance to ionizing radiation is required in power, signal and telecommunications cables.

Properties of this compound comply with the requirements of TS HD 604 S1 type M1, EN 50363-7 type T16, EN 50363-8 type TM7, EN 50290-2-27, VDE 0207 Part 24 type HM2, VDE 0207 Part 23 type HJ2, VDE 0250 Part 215 type HM5, BS 7655 type LTS1 & LTS3, IEC 60092-360 type SHF1, IEC 60502 ST8, IEC 60544-2, IEC 60544-4 Thermoplastic, Type XY, Radiation index 6,0 (4.8 kGy/h, 1 mm).

Product Data:

| Property | Test Method | Unit | Value |
|--|----------------------|--------------------|--------------------|
| Physical Properties | | | |
| Melt Flow Rate (150°C-21,6 kg) | ASTM D 1238 | gr/10 min | 9,5 |
| Specific Weight (23°C) | ASTM D-792 | gr/cm ³ | 1,51 |
| Hardness | ISO 868 | Shore D | 51 |
| Mechanical Properties | | | |
| Tensile Strength | ISO 527 | Mpa | 12 |
| Elongation at Break | ISO 527 | % | 190 |
| Heat Ageing (100 °C, 168 h) | IEC 60811 | | |
| Δ Strength | | % | -30 |
| Δ Elongation | | % | ±40 |
| Tear Strength | ASTM D 1938 | N/mm | 5 |
| Hot Pressure Test at 70 °C | IEC 60811-508 | % | <50 |
| Cold Flex | ISO 458-2 | °C | -20±2 |
| Cold Bend (-15 °C±2 °C) | IEC 60811-504 | - | No Cracks |
| Cold Elongation (-15 °C±2 °C) | IEC 60811-505 | - | 30 Min. |
| Cold Impact (-25 °C±2 °C) | IEC 60811-506 | - | Pass |
| Chemical Properties | | | |
| Halogen Content | EN 60754-1 | % | 0 |
| pH | IEC 60754-2 | - | >4.3 |
| Conductivity | IEC 60754-2 | μS/mm | <10 |
| Water Absorption | IEC 60811 | mg/cm ² | <5.0 |
| LOI | ISO 4589 | % | 39 |
| Smoke Density | EN-61034 | % transmittance | >80 |
| Volume Resistivity 20 °C (Alternating Polarity Method) | ASTM D257 Electrodes | Ω.cm | 1.10 ¹⁵ |
| Other Properties | | | |
| Oil IRM 902 oil (70 °C, 4 h) | IEC 60811-404 | | |
| Δ Strength | | % | 10 |
| Δ Elongation | | % | 9 |
| Radiation index | IEC 60544 | | 6 |

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Determination of the effects of ionizing radiation (IEC 60544-4 & IEC 60544-2)

| Dose MGy | Dose Rate kGy/h | Traction | | Hardness Shore A | Hardness Shore D |
|-------------|--------------------|-------------------|-------------------|---------------------|---------------------|
| | | Strength R MPa | Elongation E % | | |
| 0 | 0 | 15,23 | 184 | 111,5 HA | 57 HD |
| 0.2 | 4.8 | 14,25 | 151 | 111 HA | 58 HD |
| 0.5 | 4.8 | 14,79 | 132 | 112,5 HA | 59 HD |
| 1 | 4.8 | 14,45 | 96 | 115,5 HA | 53 HD |
| 3 | 35 | 14,25 | 44 | 118 HA | 68HD |

The critical value limit specified in the IEC 60544-4 and IEC 60544-2 has been reached at 1 MGy for SX-4R1. Radiation index is:6

Processing:

Extrusion Temperatures: 115 °C–125 °C–130 °C –135°C–145°C–155 °C (Processing with Die Plate 40 Mesh Filter)

Extrusion Temperatures: 120 °C–125 °C–135 °C –145°C–155°C–165 °C (Processing without Die Plate and Filter)

Packaging:

It is packaged as 25 kg in aluminum bags.

Storage&Handling:

SX-4R1 should be stored in a manner that avoids direct exposure to sunlight and heat (T<30°C). This compound should be used within 6 months after its production date. After this time it's necessary to dry the material before extrusion.

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