

Silplus™ 50 MP

Heat Cured Elastomer

Description

Silplus 50 MP is a heat cured elastomer with outstanding processing capability. Silplus 50 MP heat cured elastomer when properly compounded and catalyzed may be considered for use in a wide variety of applications such as extrusion, molding and calendaring.

Key Features and Typical Benefits

- compounding simplicity
- good extrudability
- high mechanical properties
- good green strength
- easily blendable
- versatile

Typical Physical Properties

| Typical Properties of the Uncured Base Compound | | | |
|---|--------------|-------------------|-------------|
| Appearance | | | Translucent |
| Density, 23°C | DIN 53 479 A | g/cm ³ | 1.15 |
| Mooney Viscosity | DIN 53 523 | | |
| ML (4) 25°C | | ME | 37 |
| Δ ML 0/ML4 | | ME | ≤ 25 |

Typical Properties of the Vulcanized Rubber

100 (pbw) Silplus 50 MP heat cured elastomer with 0.4 (pbw) like
2,5-Dimethyl-2,5-di(tert.butylperoxy)hexane (100%).

Vulcanization conditions: 10 min. @ 170°C.

| | | | |
|--------------------------------|------------------|-------------------|-----|
| Hardness | DIN 53 505 | Shore A | 50 |
| Tensile Strength | DIN 53 504 S2 | N/mm ² | 11 |
| Elongation at Break | DIN 53 504 S2 | % | 550 |
| Tear Strength | ASTM D 624 die B | N/mm | 25 |
| Compression Set (22 h @ 175°C) | ISO 815 | % | 24 |

Typical Properties of the Vulcanized Rubber

100 (pbw) Silplus 50 MP heat cured elastomer with 1.2 (pbw) bis-(2,4-
dichlorobenzoyl)-peroxide (50%).

Vulcanization conditions: 10 min. @ 120°C. Post cured: 4h @ 200°C.

| | | | |
|---------------------|------------------|-------------------|-----|
| Hardness | DIN 53 505 | Shore A | 50 |
| Tensile Strength | DIN 53 504 S2 | N/mm ² | 11 |
| Elongation at Break | DIN 53 504 S2 | % | 490 |
| Tear Strength | ASTM D 624 die B | N/mm | 26 |

Typical properties are average data and are not to be used as or to develop specifications.

Processing Recommendations

Various organic peroxides will vulcanize the compounding bases. Fabricators should select a curing agent based on the method of fabrication, desired properties and safety considerations. They are mixed into the rubber on a two-roll-mill, together with additives if necessary.

If the goods are to be vulcanized without pressure, e.g. in hot air or in an infrared radiation tunnel, bis-2,4-dichlorobenzoyl-peroxide (50%) is usually recommended. The dosage ranges from 1-2 parts (pbw) of cross-linking agent on 100 parts (pbw) of base compound. Good results have been achieved with a dosage of 1.5 parts (pbw). While the cross-linking agent is being incorporated, the temperature of the compound should not exceed 40°C to avoid scorch. Therefore the mixer or mill should always be well cooled.

To vulcanize goods in a press or in steam, dicumyl peroxide (95%) or 2,5-Dimethyl-2,5-di(tert.butylperoxy)hexane is generally recommended. Dicumyl peroxide crystals need to be melted in the rubber to become homogeneous and effective.

Regulatory Compliance

- The ingredients are listed in the BfR recommendation XV “Silicones” ⁽¹⁾
- Silplus 50 MP heat cured elastomer product may be considered for use in applications subject to FDA 21 CFR 177.2600. Silplus 50 MP heat cured elastomer grade is compositionally compliant with the requirements of 21 CFR 177.2600 – Rubber articles intended for repeated use and have been found, through testing of a representative sample, to meet the extractives limitations in 21 CFR 177.2600(e) and/or (f). Please note, though, that extractives levels will vary with processing conditions.
- Silplus 50 MP heat cured elastomer met the requirements for USP Class VI and ISO 10993 testing under Good Laboratory Practices (GLP)

(1) Producer of the final article needs to test and confirm that the final product meets the extraction limits of BfR XV or corresponding EU legislation.

Packaging

Silplus 50 MP heat cured elastomer is available in 500 kg boxes.

Patent Status

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Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order

Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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