

## Silplus™ 40 MP

Heat Cured Elastomer

### Description

Silplus 40 MP is a heat cured elastomer with outstanding processing capability. Silplus 40 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 <sup>3</sup> | 1.12        |
| Mooney Viscosity                                | DIN 53 523   |                   |             |
| ML (4) 25°C                                     |              | ME                | 25          |
| Δ ML 0/ML4                                      |              | ME                | ≤ 20        |

| <b>Typical Properties of the Vulcanized Rubber</b>   |                  |                   |     |
|--|------------------|-------------------|-----|
| 100 (pbw) Silplus 40 MP heat cured elastomer with 0.4 (pbw) like 2,5-Dimethyl-2,5-di(tert.butylperoxy)hexane (100%).<br>Vulcanization conditions: 10 min. @ 170°C. |                  |                   |     |
| Hardness   | DIN 53 505       | Shore A           | 40  |
| Tensile Strength   | DIN 53 504 S2    | N/mm <sup>2</sup> | 9   |
| Elongation at Break  | DIN 53 504 S2    | %                 | 750 |
| Tear Strength  | ASTM D 624 die B | N/mm              | 17  |
| Compression Set (22 h @ 175°C)   | ISO 815          | %                 | 18  |

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

| <b>Typical Properties of the Vulcanized Rubber</b>  |                  |                   |     |
|---|------------------|-------------------|-----|
| 100 (pbw) Silplus 40 MP heat cured elastomer with 1.2 (pbw) bis-(2,4-dichlorobenzoyl)-peroxide (50%).<br>Vulcanization conditions: 10 min. @ 120°C. Post cured: 4h @ 200°C. |                  |                   |     |
| Hardness  | DIN 53 505       | Shore A           | 42  |
| Tensile Strength  | DIN 53 504 S2    | N/mm <sup>2</sup> | 9   |
| Elongation at Break   | DIN 53 504 S2    | %                 | 560 |
| Tear Strength   | ASTM D 624 die B | N/mm              | 17  |

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” <sup>(1)</sup>
- Silplus 40 MP heat cured elastomer product may be considered for use in applications subject to FDA 21 CFR 177.2600. Silplus 40 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 40 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 40 MP heat cured elastomer is available in 500 kg boxes.

## **Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

## **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](http://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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