



# MOMENTIVE

performance materials

The science behind the solutions.

## Silplus\* 60 EX

(formerly Silopren\* HV 4/611)

### Product Description

Silplus 60 EX is a heat cured silicone rubber base compound that is an excellent candidate to consider for use in extrusion, press-molding injection and calendaring. Silplus 60 EX heat cured silicone may be considered for use in a wide variety of high quality applications such as high durometer tubes and profiles.

### Key Features and Typical Benefits

- Excellent extruding processability
- Good mechanical properties
- High green strength
- Easily blendable
- Versatile

### Typical Physical Properties

#### Typical Properties of the Uncured Base Compound

Appearance			Translucent
Density, 20°C	DIN 51757	g/cm <sup>3</sup>	1.19
Mooney Viscosity	DIN 53 523		
ML (4) 25°C		ME	51
Δ ML 0/ML4		ME	≤ 20

#### Typical Properties of the Vulcanized Rubber

100 pbw. Silplus 60 EX heat cured silicone with 1.5 pbw bis-(2,4-dichlorobenzoyl)-peroxide (50%).  
Vulcanization conditions: 10 min. @ 120°C. Post cured: 6h @ 200°C in hot air.

Hardness	DIN 53 505	Shore A	62
Tensile Strength	DIN 53 504 S2	N/mm <sup>2</sup>	11
Elongation at Break	DIN 53 504 S2	%	500
Tear Strength	ASTM D 624 die B	N/mm	25
Compression set (22 h @ 175°C)	ISO 815	%	45

#### Attention:

Using other peroxides might result in different mechanical properties.

Diacyl-peroxides like Di(2,4-dichlorobenzoyl)peroxide are non vinyl specific cross link peroxides (higher cross link density).

Diaryl-peroxides like Dicumylperoxide or Dialky-peroxides like 2,5-Dimethyl-2,5-di(tert.butylperoxy)hexan are vinyl specific cross link peroxides (lower cross link density).

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Momentive Performance Materials provides versatile materials as the starting point for our creative approach to ideas that help enable new developments across hundreds of industrial and consumer applications. We are helping customers

solve product, process, and performance problems; our silanes, fluids, elastomers, sealants, resins, adhesives, urethane additives, and other specialty products are delivering innovation in everything from car engines to biomedical devices.

From helping to develop safer tires and keeping electronics cooler, to improving the feel of lipstick and ensuring the reliability of adhesives, our technologies and enabling solutions are at the frontline of innovation.

## Regulatory Compliance

- The ingredients are listed in the BfR recommendation XV "Silicones"<sup>(1)</sup>
- Compositionally compliant with 21 CFR 177.2600 - Rubber articles intended for repeated use<sup>(2)</sup>
- KTW and WRAS approved product
- In compliance with the requirements of the DVGW working sheet W 270
- A representative sample of Silplus 60 EX met the requirements of USP Class VI and Tripartite testing under Good Laboratory Practices (GLP)
- Listed as UL 94 HB (file No. E224733)

(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.

(2) It is the responsibility of the user to determine that the final product complies with the extractive limitations and other requirements of 21 CFR 177.2600 under their specific manufacturing procedures.

## Potential Applications

Because of its outstanding properties, Silplus 60 EX heat cured silicone is an excellent candidate to consider for use in most types of extrusion and calendaring applications.

## Packaging

Silplus 60 EX heat cured silicone is available in 500 kg boxes.

## Instructions for Use

Crosslinking can be carried out with most peroxides commonly used for the press molding and extrusion process. They are mixed into the rubber, 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 by weight of crosslinking agent on 100 parts by weight (pbw.) of base compound. Good results have been achieved with a dosage of 1.5 pbw. While the crosslinking agent is being incorporated, the temperature of the compound should not exceed 40°C. Therefore the rolls of the mixing mill should always be well cooled. It is pointed out that the compression set behavior obtained with bis-2,4-dichlorobenzoyl-peroxide is generally less satisfactory than that given by dicumyl peroxide or comparable products.

To vulcanize goods in a press or in steam, recrystallized dicumyl peroxide (95%) is generally recommended. Instead of dicumyl peroxide corresponding proportions of other peroxides (*e.g.* ones with less odor) can be used.

## 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 considering the use of this product should review the latest Material Safety Data Sheet and label for product safety information, handling instructions, personal protective equipment if necessary, and any special storage conditions required. Material Safety Data Sheets are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any Momentive Performance Materials representative. Use of other materials in conjunction with Momentive Performance Materials 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.

## Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products. The American Chemistry Council (CHEMTREC) and CareChem24 International also maintain an around-the-clock emergency service for all chemical products:

Location	Momentive Performance Materials Products	All Chemical Products
Mainland U.S., Puerto Rico	518.233.2500	CHEMTREC: 800.424.9300
Alaska, Hawaii	518.233.2500	CHEMTREC: 800.424.9300
Canada	518.233.2500	CHEMTREC: 800.424.9300
Europe	+518.233.2500 (Albanian, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbo-Croatian, Slovak, Spanish, Swedish, Turkish, Ukrainian)	+44.(0)208.762.8322 (UK)
Middle East, All countries, except Israel	+518.233.2500	+961.3.487.287 (Lebanon)
Middle East, Israel	+518.233.2500	+44.(0)208.762.8322 (UK)
Latin America, Asia/Pacific, all other locations worldwide	+518.233.2500	CHEMTREC: +1-703.527.3887 (collect)
At sea	Radio U.S. Coast Guard, which can directly contact Momentive Performance Materials at 518.233.2500 or CHEMTREC at 800.424.9300.	

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

## CUSTOMER SERVICE CENTERS

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### North America

E [cs-na.silicones@momentive.com](mailto:cs-na.silicones@momentive.com)

- |                                                           |                   |                   |
|-----------------------------------------------------------|-------------------|-------------------|
| • Specialty Fluids                                        | T +1.800.523.5862 | F +1.304.746.1654 |
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| • Consumer Sealants & Construction Sealants and Adhesives | T +1.877.943.7325 | F +1.304.746.1654 |
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### Latin America

E [cs-la.silicones@momentive.com](mailto:cs-la.silicones@momentive.com)

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|----------------------------------------------------|--------------------|--------------------|
| • Argentina & Chile                                | T +54.11.4862.9544 | F +54.11.4862.9544 |
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| • Venezuela, Ecuador, Peru<br>Colombia & Caribbean | T +58.212.285.2149 | F +58.212.285.2149 |
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### Europe, Middle East, Africa and India

E [cs-eur.silicones@momentive.com](mailto:cs-eur.silicones@momentive.com)

T +00.800.4321.1000  
T +31.164.225350

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### Pacific

E [cs-ap.silicones@momentive.com](mailto:cs-ap.silicones@momentive.com)

T +1.800.820.0202  
T +0.81.276.20.6182 F +81.276.31.6259 |

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### Worldwide Hotline

T +1.607.786.8131  
T +1.800.295.2392 F +1.607.786.8309 |

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