

## Silopren™ LSR 7090

### Description

Silopren LSR 7090 liquid silicone rubber is a two-component, high-transparency, high-hardness, low-viscosity, fast-cure speed and ultra clear liquid silicone rubber (LSR). Providing good optical clarity, Silopren LSR 7090 liquid silicone rubber combines typical LSR properties, such as high temperature stability and flowability, with excellent UV and blue light stability. As a result, molded lenses produced using this material can exhibit excellent durability and maintain optical clarity, even if exposed to high temperatures or UV light. Due to its high flowability, Silopren LSR 7090 liquid silicone rubber can help enable excellence in manufacturing complex and micro-structure optical lenses, even in large quantities, utilizing the injection and compression molding processes.

### Key Features and Typical Benefits

#### Optical Clarity

- 94% transmission
- <1% haze
- Abbe number of approximately 50
- Strong color stability

#### Durability

- High temperature resistance even above 150 °C
- UV light resistance
- Micro-crack resistance
- Listed as UL 94 HB (File No. E56745)

#### Design Freedom

- High flowability helps enable complex and micro-structure design
- Enhanced options for part integration
- Reduced weight in design
- Colorability due to optical clarity

Productivity

- Excellent processability for injection/compression molding
- Material waste may be minimized in the coldrunner-based LSR injection process

Typical Physical Properties

	A Component	B Component
Appearance	Optical Clarity	Optical Clarity
Viscosity in Pa·s at 23 °C (D=10/s)	67	17
Mix ratio by weight	1:1	
Viscosity (mixed) at 23 °C Pa·s	42	
Pot Life (23°C), hr	40	

Tokimeck Type B8U No.7\*10rpm\*5min. The typical pot-life of the mixture of the two components (closed vessel) at 20 °C is two days. Increased temperatures reduce the pot-life.

Typical Cured Properties (Press cure 15 min at 130 °C, 1hr at 150 °C)

Basic			
Density	JIS K 6249	g/cm <sup>3</sup>	1.08
Shore A hardness	JIS K 6249		90
Shore D hardness			42
Tensile strength	JIS K 6249	N/mm <sup>2</sup>	8.0
Elongation at break	JIS K 6249	%	50
Tear strength	JIS K 6249	N/mm	8
Optical			
Transmittance (2mm)	400nm	%	93
	700nm		94
Refractive Index		(n <sub>D</sub> <sup>25</sup> )	1.42
Haze	D 1003	%	<1

Dispersion	Abbe number		51
Thermal			
CTE linear (40-90 °C)		ppm/°C	250
Linear Shrinkage	JIS K 6249	%	2.0
Others			
Water Absorption	D 570	%	< 0.1
Curing Data	10' at 110 °C	T60 [min]	1.7

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

### Potential Applications

- Interior and exterior lighting - lenses and other illumination optics
- Automotive lighting – lenses and light guides
- Electronics – mobile phones, flash lenses, sensing lenses and other optics
- Solar – lenses and light guides

### Processing Considerations

Ready-to-use mixtures (of the components A and B) are fed directly to the injection-molding machine from the original containers by means of a metering and mixing unit. The mixture, consisting of the two components in the ratio 1:1, is injected into the heated mold. Because of low viscosity, the injection speed and injection pressure need to be carefully adjusted so that the injection time can be decreased. At mold temperatures of 110 - 150 °C, the addition-crosslinking silicone rubber cures free of dissociation products within a few seconds. Excellent flowability and easy de-molding can help enable fully automated production of large numbers of articles in shorter total cycle times.

### Packaging

Silopren LSR 7090 liquid silicone rubber is available in a pail kit (18kg of A and B part - each).

### 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.

### Contact Information

Email

[commercial.services@momentive.com](mailto:commercial.services@momentive.com)

### Telephone

<b>Americas</b>	<b>Latin America</b>	<b>EMEAI- Europe, Middle East, Africa &amp; India</b>	<b>ASIA PACIFIC</b>
+1 800 295 2392	<b>Brazil</b>	<b>Europe</b>	<b>China</b>
Toll free*	+55 11 4534 9650	+390510924300	800 820 0202
+704 805 6946	Direct Number	Direct number	Toll free
Direct Number			+86 21 3860 4892
			Direct number
<b>*All American countries</b>	<b>Mexico</b>	<b>India, Middle East &amp; Africa</b>	<b>Japan</b>
	+52 55 2169 7670	+ 91 44 71212207	+81 3 5544 3111

Direct Number	Direct number*	Direct number
	<b>*All Middle Eastern countries, Africa, India,</b>	<b>Korea</b>
		+82 2 6201 4600

For literature and technical assistance, visit our website at: [www.momentive.com](http://www.momentive.com)

**DISCLAIMER:**

**THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY “SUPPLIER”), ARE SOLD SUBJECT TO SUPPLIER’S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER’S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN.** Each user bears full responsibility for making its own determination as to the suitability of Supplier’s materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier’s products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier’s standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the

infringement of any patent or other intellectual property right.

\*Silopren™ is a trademark of Momentive Performance Materials Inc.

The use of the "™" symbol designates registered or unregistered trademarks of Momentive Performance Materials Inc. or its affiliated companies. Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.