

LIM™6045

Product Description

LIM6045 liquid silicone rubber is a two-component product formulated for use in liquid injection molding to produce elastomeric parts where high clarity is a key requirement. In addition, the combination of excellent tear strength and very high tensile strength makes this product suitable for a wide variety of applications. Mechanical parts such as connector inserts, seals, flexible mounts, and valve parts can be made readily from LIM6045 liquid silicone rubber.

Other possible applications include sports goggles and masks, health care equipment, camera parts, and coating metal rolls. The excellent clarity and high tear strength of LIM6045 liquid silicone rubber suggests its use for baby bottle nipples.

Key Performance Properties

- High clarity for excellent visibility
- Excellent tear strength
- Convenient 1:1 mix ratio for use with automatic equipment Rapid cure time: 10 to 40 seconds depending upon part size, configuration, and molding temperature
- Wide range of molding temperatures: 150°C (302°F) to 205°C (400°F)
- Excellent release from metal molds

Typical Product Data

CURED PROPERTIES			
Physical Properties	As molded 30s @ at 177°C (350°F)	Postbaked 1hr @ 204°C (400°F)	Postbaked 4hr @ 204°C (400°F)
Hardness, Shore A, Durometer	42	44	45
Tensile Strength, psi (MPa)	1200 (8.3)	1225 (8.4)	1250 (8.6)
Elongation, %	650	650	630
Tensile Modulus, 100%, psi MPa)	175 (1.2)	175 (1.2)	190 (1.3)
Tear Strength, ppi (KN/M)	230 (40.4)	230 (40.4)	230 (40.4)
Compression Set, % 22 hrs @ 177°C (350°F)	25	20	15
Bashore, %	54	50	50

After Heat Aging, 168 hrs @ 204°C (400°F)			
Hardness, Shore A, Durometer	49		
Tensile Strength, psi (MPa)	1175 (8.1)		
Elongation, %	495		
Tensile Modulus, 100%, psi (MPa)	255 (1.8)		
Tear Strength, ppi (KN/M)	215 (37.7)		
Electrical Properties			
Dielectric Strength, V/mil	530	546	549
Dielectric Constant @ 10 ³ Hz	3.08	3.20	3.12
Dissipation Factor @ 10 ³ Hz	0.0008	0.0003	0.0002
Volume Resistivity, Ohm-cm	1.67 x 10 ¹⁴	2.09 x 10 ¹⁴	4.15 x 10 ¹⁴

Agency Status

LIM6045 liquid silicone rubber may be used as a food-contact surface of articles intended for repeated use in the producing, manufacture, packing, processing, preparing, treating, packaging, transporting, or holding of food, in accordance with the following prescribed conditions:

1. Articles are manufactured in accordance with Good Manufacturing Practice
2. Articles are thoroughly cleansed prior to their first use.

Momentive Performance Materials has on file data which indicate LIM6045 liquid silicone rubber, when cured at 375F and then postbaked at 400F for one hour, meets the extractive limitations for use in contact with dry, aqueous, acid, fatty, and alcoholic foods in accordance with FDA Regulation 21CFR177.2600. Manufacturers are cautioned to evaluate the level of extractives under their specific curing and postbaking conditions.

Food additive regulations do not apply to the manufacture of baby bottle nipples. Momentive Performance Materials has on file an opinion of counsel confirming that use of LIM 6045 liquid silicone rubber in bottle nipples is appropriate under the Federal Food, Drug, and Cosmetic Act and is consistent with FDA regulatory policies. Momentive Performance Materials has conducted an analysis of LIM6045 liquid silicone rubber for volatile nitrosamines pursuant to FDA Compliance Policy Guide No. 7117.11 (12/26/84)] which indicates that any volatile nitrosamines are present at less than 10 parts per billion. The fabricator is cautioned to verify that nipples manufactured from this product comply with applicable structural integrity requirements.

Instructions for Use

BONDING

LIM6045 liquid silicone rubber usually requires a primer to bond to non-silicone surfaces. If chemical bonding onto a substrate is required for insert molding or supported extrusion, thoroughly clean the substrate with a non-oily solvent such as naphtha or methyl ethyl ketone and let dry. Then apply a uniform thin film [0.01-0.02 mm (0.05-.1 mil)] of a Momentive Performance Materials silicone primer, such as SS4155 or SS4120 primers, and allow to air dry for one hour or more before molding or extruding onto the substrate. For more details on priming and adhesion, please refer to Momentive Performance Materials data sheet on RTV primers (CDS1873).

LIM SYSTEM EQUIPMENT

Pumping and metering systems for LIM6045 liquid silicone rubber and appropriate injection molding machines are available from a number of manufacturers, most of whom will provide a complete system (exclusive of the mold itself) ready to run. Contact Momentive Performance Materials for further information.

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 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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