

LIM™ 6050

Description

LIM6050 liquid silicone rubber is a 2-component product formulated for use in liquid injection molding to high performance elastomeric parts. It is clear, but easily pigmentable with Momentive masterbatch colors. 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 LIM6050 liquid silicone rubber.

Key Features and Benefits

- 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: 150C (302F) to 205C (400F)
- Excellent release from metal molds

Typical Physical Properties

<u>Property</u>	<u>LIM6050A</u>	<u>LIM6050B</u>
Color	Clear, Colorless	Clear, Colorless
Specific Gravity, gm/cc	1.12	1.12
Application Rate, gm/min	80	80

<u>Mixed A & B</u>	<u>LIM6050 A & B</u>
Cure rate (Monsanto Rheometer, MDR2000 @ 177C (350F))	
Torque, max. in-lbs.	20
T-02 seconds	6
Peak rate, in./lb/min.	164
T-90, seconds	13

<u>Cured Properties</u>	<u>As Molded 30 sec/177C</u> <u>(350F)</u>	<u>Postbaked 1 hr/204C</u> <u>(400F)</u>
Hardness, Shore A durometer	50	53
Tensile Strength, psi (MPa)	1250 (8.6)	1300 (9.0)
Elongation, %	575	530
Tensile Modulus, 100% psi (MPa)	310 (2.1)	320 (2.2)
Tear Strength, ppi (KN/M)	250 (43.9)	250 (43.9)
Compression Set, % (22 hrs. @ 177C/350F)	35	25
Bashore, %	60	58
<u>After Heat Aging 168 hr @ 177C/350F</u>		
Hardness, Shore A change	+4 pts.	+2 pts.
Tensile change	+12%	-4%
Elongation, change	4%	-7%
Tear Strength, change	-7%	-7%
Bashore change	0 pts.	+2 pts.
<u>Electrical</u>		
Dielectric Strength, V/mil	510	-
Dielectric Constant @ 1000 Hz	3.12	
Dissipation Factor @ 1000 Hz	0.0001	
Volume Resistivity Ohm-cm	6.1E + 14	

Potential Applications

- sports goggles and masks
- health care equipment
- camera parts
- coating metal rolls

Processing Recommendations

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. At mold temperatures of 170 - 230°C, the addition-crosslinking silicone rubber typically vulcanizes, without any dissociation products, within a few seconds. High curing speed and easy demolding can help enable fully automated production of a large number of articles in short cycle times.

Regulatory Compliance

- A representative sample of an analogous product to LIM 6050 met the requirements of USP Class VI and ISO 10993 under Good Laboratory Practices (GLP).
- Listed as UL 94 HB
- The ingredients are listed in the BfR recommendation XV “Silicones” ⁽¹⁾
- Compositionally compliant with 21 CFR 177.2600 – Rubber articles intended for repeated use⁽²⁾

(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.

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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