

LIM™ 8040

Description

LIM* 8040 liquid silicone rubber is a 2-component liquid injection moulding material, which offers primerless adhesion to a wide range of substrates including metals and engineering plastics. Full bond strength is reached immediately after de-moulding. This makes LIM 8040 the optimal choice for cost-efficient manufacturing of high numbers of articles in integrated processes such as multicomponent injection moulding or insert-moulding. If properly processed, parts made from LIM 8040 can meet the requirements for food contact. The requirements are determined in 21CFR FDA paragraph 177.2600 'Rubber articles intended for repeated use. It also has been successfully tested for USP class VI. Both applications usually require a postcure.

Key Features and Benefits

- Primer-less adhesion to many substrates
- Maximum adhesion immediately after de-moulding
- High temperature stability
- Excellent stability and flexibility at low temperatures
- Outstanding ageing behavior and weathering resistance
- Good dielectric and mechanical properties
- Easy pigmentable due to translucent colour

Typical Physical Properties

<u>Property</u>		<u>A Component</u>	<u>B Component</u>
Appearance		Translucent	Translucent
Density	g/cm ³	1.08	1.08

The pot-life of the mixed components (closed container) at 20°C is three days, Increased temperatures reduce the pot-life.

		As molded (30 s 177°C)	Post-baked (1h / 177°C)
Hardness	Shore A	43	46
Tensile strength	MPa	5.2	5.6
Elongation at break	%	385	375
Tensile Modulus 100%	MPa	1.2	1.6
Tear Strength, Die B	KN/m	37.8	30.2
<u>Compression Set @ 150°C</u>			
168 hours	%	67	27
1000 hours	%	76	35
Thermal Conductivity	W/m-K	0.19	0.19
Dielectric Strength	kV/mm	20	20
Dielectric Constant		2.85	2.85
Dissipation Factor		0.003	0.003
Volume Resistivity	Ω-cm	2.9×10^{14}	2.9×10^{14}

Potential Applications

LIM 8040 is particularly suitable for the manufacturing of parts, where engineering plastics and elastomeric materials need to be combined in an overmolding or co-molding process such as:

- sealing elements,
- automotive connectors,
- membranes,
- vibration dampening elements

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°C - 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 8040 met the requirements of USP Class VI and ISO 10993 under Good Laboratory Practices (GLP)
- Listed as UL 94 HB (File No. E205753)
- 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

Standard copy to come

Product Safety, Handling and Storage

Standard copy to come

Limitations

Standard copy to come

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