

ELASTOSIL® LR 3003 A,B US

Liquid Silicone Rubber

Applications

Liquid silicone rubbers of the ELASTOSIL® LR 3003 US series are paste-like, easily pigmentable two-component compounds. They are noted for their high transparency, excellent mechanical and electrical properties and their ability to be molded into intricately-shaped, precision parts. This series is used for health care applications, including short-term implants. Very brief molding cycles for intricately-shaped and flash-free parts are possible.

Potential Uses

- Medical devices
- Needle-free IV valves
- Drink valves
- Diaphragms
- Soft-Touch handles and buttons
- Organic rubber replacement

Key Characteristics

- ELASTOSIL® LR 3003 US series has been tested according to the recommendations of the US Pharmacopoeia and meets the requirements of Class VI.
- ELASTOSIL® LR 3003 US series contains only those ingredients¹ which are suitable for food contact.
- Excellent mechanical properties
- Excellent clarity
- Excellent molding qualities
- Excellent pot life after mixing parts A & B

Product Data²

Property	Test Method	Unit	/20	/30	/40	/50
Specific Grade			/20	/30	/40	/50
Appearance	WSTM 2298	—	Transparent			
Specific Gravity, 25 °C	WSTM 1154	g./cm ³	1.10	1.11	1.14	1.13
Extrusion Rate ³	WSTM 2299	g/minute	320	220	70	54
Pot Life ⁴ , at 25 °C	WSTM 2299	Hours	At least 48			
Durometer Hardness	ASTM D 2240 Type A	Hardness points	23	31	40	51
Tensile Strength	ASTM D 412	MPa (lb./in. ²)	8.1 (1180)	8.8 (1280)	10 (1460)	10.6 (1540)
Elongation	ASTM D 412	%	810	670	670	520
Tear Resistance	ASTM D 624, Die B	N/mm (lb./in.)	19 (108)	18 (100)	28 (160)	35 (200)
Compression Set, 22 hr at 177 °C (350 °F)	ASTM D 395, Method B	%	22	18	16	11
Shrinkage ⁵ , with post cure (with no post cure)	WSTM 2316	%	3.9 (3.0)	3.7 (2.8)	3.6 (2.8)	3.5 (2.7)
Brittle Point	ASTM D746	°C	< - 73	< - 73	< - 73	< - 73

Mechanical properties are obtained on specimens press cured 5 minutes at 166 °C (330 °F) and post cured 4 hour at 204 °C (400 °F)

Product Data²

Property	Test Method	Unit	/60	/70	/80
Specific Grade					
Appearance	WSTM 2298	—	Transparent		
Specific Gravity, 25° C	WSTM 1261	g./cm ³	1.13	1.18	1.17
Extrusion Rate ³	WSTM 2299	g./minute	63	16	40
Pot Life ⁴ at 25 °C	WSTM 2299	hours	At least 48		
Durometer Hardness	ASTM D 2240 Type A	Hardness points	59	68	77
Tensile Strength	ASTM D 412	MPa (lb./in ²)	10.6 (1540)	11 (1600)	9.4 (1370)
Elongation	ASTM D 412	%	420	385	300
Tear Resistance	ASTM D 624, Die B	N/mm (lb./inch)	31 (180)	31 (180)	21 (120)
Compression Set, 22 hr at 177 °C (350 °F)	ASTM D 395, Method B	%	12	18	20
Shrinkage ⁵ , with post cure (with no post cure)	WSTM 2316	%	3.3 (2.5)	3.1 (2.4)	2.7 (2.1)
Brittle Point	ASTM D746	°C	< - 73	< - 73	< - 73

Mechanical properties are obtained on specimens press cured 5 minutes at 166 °C (330 °F) and post cured 4 hour at 204 °C (400 °F)

Properties

Typical Property values are not intended for use in the preparation of specifications. Please contact Wacker Silicones Division for assistance and recommendations before writing specifications on this product.

Fabricating

Liquid silicone rubbers of the ELASTOSIL® LR 3003 US series can be processed using standard liquid rubber injection molding techniques.

Vulcanization

Liquid silicone rubbers of the ELASTOSIL® LR 3003 US series are vulcanized by mixing part A with part B in a ratio of 1:1 with the application of heat. Mold temperatures are usually in the range of 160 °C (320 °F) to 210 °C (410 °F). Actual mold temperature and cycle times will be dependent upon a number of factors. Cycle times may be as little as 15 seconds for small parts.

Storage

Liquid silicone rubbers of the ELASTOSIL® LR 3003 US series have a shelf life of at least 6 months when stored below 32 °C (90 °F) in the tightly closed original container.

Storage beyond the recommended shelf-life does not necessarily mean that the product is no longer usable. However, the properties required for the intended use must be checked for quality assurance reasons.

Once opened, containers should always be resealed to prevent catalyst poisoning by amines, sulfur compounds, and other substances.

Packaging

Liquid silicone rubbers of the ELASTOSIL® LR 3003 US series are available in 40 kg. (88 lb.) pail kits and 380 kg (838 lb.) drum kits.

Contact Information

Phone: 1 800 554-1715
Press 1 for Silicone Rubber –
Follow the menu instructions

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Wacker Silicones Division is a domestic manufacturer of basic silicone materials for industry. Products include silicone fluids and emulsions, antifoam and release agents, room temperature vulcanizing (RTV) sealants and adhesives, heat curable rubber (HCR), liquid silicone rubber (LSR), masonry water repellents, paint raw materials, paper release coatings, and textile finishes.

References

1. Under Title 21 "Food and Drugs" Part 177.2600, "Rubber articles intended for repeated use." because this regulation contains limitations, compliance to the regulation is the responsibility of the user

2. Properties obtained after mixing Part A and Part B in a ratio of 1:1 .

3. Extrusion rate is through a 1/8 inch (3.2 mm) diameter orifice with a pressure of 90 lb./inch² (621 kPa).

4. Pot life determined by time required for extrusion rate to be reduced to 50% of initial value.

5. Shrinkage values are approximate. Users with critical dimensional requirements must build a prototype mold to determine exact shrinkage for their particular parts under the same conditions to be used in production molding.

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The management system has been certified according to ANSI/ISO/ASQ Q9001 And ANSI/ISO 14001

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