Technical Data Sheet

SILASTIC™ LS-2323 Fluorosilicone Rubber

FEATURES & BENEFITS

- Excellent fluid resistance to most hydrocarbon and silicone fluids
- Serviceable over a very wide temperature range

High-modulus 45 durometer rubber base

APPLICATIONS

- SILASTIC™ LS-2323 Fluorosilicone Rubber is used for high-modulus compounds for use in making molded rubber goods such as O-rings.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications.

Test[1]	Property	Unit	Result
CTM 0176	Appearance		Off-white
ASTM D 792	Specific Gravity[2]		1.44
ASTM D 2240	Durometer Hardness, Shore A-2	points	48
ASTM D 412	Tensile Strength	MPa (psi)	8.78 (1275)
ASTM D 412	Elongation	percent	325
ASTM D 395	Compression Set, 22 hrs / 177°C (350°F)	percent	35
ASTM D 471	Volume Swell in ASTM Reference Fuel B, 24 hrs / 23°C (73°F)	percent	19
CTM 0157	Shrink	percent	4.3
ASTM D 412	Modulus at 200 percent elongation	MPa (psi)	4.65 (675)
ASTM D 2137	Brittle Point	°C(°F)	57 (70)

[1]CTMs (Corporate Test Methods) are similar to standard ASTM (American Society of Testing Materials) tests in most instances. Copies of CTMs are available upon request.
[2]Press cured only.
Properties obtained using 1.0 phr 2,5-Bis(tert-butylperoxy)-2,5-dimethylhexane, 45% masterbatch on 0.075 inch (1.91 mm) thick slabs press cured 10 minutes at 171°C (340°F); post-cured 8 hours at 200°C (392°F).

DESCRIPTION

SILASTIC LS-2323 Fluorosilicone Rubber is a high-modulus 45 durometer rubber base that exhibits excellent fluid d resistance to most hydrocarbon and silicone fluids. Additionally, it is serviceable over a very wide temperature range. Other outstanding features and benefits include:

- Excellent swelling resistance to many commonly used fuels, oils, and solvents, for good performance in harsh environments.
- Serviceable from -57 to 175°C (-70 to 347°F) under immersion conditions, and up to 225°C (437°F) in dry heat, for good performance over a broad temperature range.

NOTE: Fluorosilicone elastomers are not recommended for use with ketones and phosphate esters. Dimethyl silicone elastomers exhibit excellent swelling resistance to these types of fluids.

Table 1: Fluid Resistance of SILASTIC LS-2323 Fluorosilicone Rubber[1]
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Fluids	Immersion Conditions	Durometer, Points Change	Tensile Strength, Percent Change	Elongation, Percent Change	Volume Swell, Percent Change
ASTM Reference Fuel B	1 day/23°C (73°F)	-12	-14	-7	+14
	1 week/23°C (73°F)	-11	-14	-14	+14
	4 weeks/23°C (73°F)	-9	-16	-21	+14
ASTM Reference Fuel C	1 day/23°C (73°F)	-12	-15	-7	+17
	1 week/23°C (73°F)	-13	-17	-0	+17
	4 weeks/23°C (73°F)	-10	-15	-14	+17
	1 day/Reflux	-15	-15	-7	+20
10% Methanol/90% No-Lead Gas	1 day/23°C (73°F)	-15	-40	-29	+20
	1 week/23°C (73°F)	-17	-45	-29	+20
10% Ethanol/90% No-Lead Gas	1 day/23°C (73°F)	-12	-31	-0	+16
	1 week/23°C (73°F)	-13	-29	-0	+17
ASTM No. 1 Oil	70 hrs/150°C (302°F)	-2	+2	-8	+1
ASTM No. 3 Oil	70 hrs/150°C (302°F)	-2	+5	-17	+3
Jet Fuel, JP-4	70 hrs/23°C (73°F)	-10	-10	-17	+7
Jet Fuel, JP-8	1 day/23°C (73°F)	-4	-10	+7	+2
	1 week/23°C (73°F)	-7	-13	+7	+3
MIL-H-5606 (Univis® J-43[2])	70 hrs/135° (275°F)	-5	+10	-17	+7
MIL-H-7808 (Turbo Oil No. 15)	70 hrs/177°C (350°F)	-6	-9	-17	+7
Di-2-ethylhexyl sebacate with 0.5% phenothiazine	48 hrs/150°C (302°F)	-5	+4	-8	+6
Skydrol® 500A[3]	70 hrs/121°C (250°F)	-39	-74	-17	+7

[1]Obtained by adding 1.0 phr 2,5-Bis(tert-butylperoxy)-2,5-dimethylhexane, 45% masterbatch to SILASTIC LS-2323 Fluorosilicone Rubber. Slabs 0.07 inch thick were press cured 10 minutes at 171°C (340°F); post-cured 4 hours at 200°C (392°F).
[2]Univis is a registered trademark of Exxon Mobil Corporation.
[3]Skydrol is a registered trademark of Solutia, Inc.

HOW TO USE

Compounding

Pigmentable to most any color shade desired. Suitable for compounding with fillers to produce high-modulus, pressure-resistant compounds and molded goods, such as high performance O-rings.

Fabricating

SILASTIC LS-2323 Fluorosilicone Rubber is primarily used for molding applications using compression, transfer, or injection molding methods.

Blending

SILASTIC LS-2323 Fluorosilicone Rubber and high-modulus fluorosilicone rubber type compounds can be blended with conventional silicone rubber to provide intermediate fluid resistance at intermediate costs.

Bonding

XIAMETER™ RBM-9400 Primer should be used when bonding unvulcanized SILASTIC LS-2323 Fluorosilicone Rubber and fluorosilicone rubber type compounds to metals.

QUALITY CONTROL PROCEDURES

SILASTIC LS-2323 Fluorosilicone Rubber is routinely tested for physical properties using 1.0 phr 2,5-Bis(tert-butylperoxy)-2,5-dimethylhexane, 45% masterbatch vulcanizing agent-Test slabs are press cured 10 minutes at 171°C (340°F) and post cured 8 hours at 200°C (392°F) prior to testing. Typical properties obtained using these vulcanization conditions are shown in the Typical Properties table.

FLUID RESISTANCE

The effects of various fuels, oils, and solvents on the properties of SILASTIC LS-2323 Fluorosilicone Rubber are shown in Table 1.

HEAT STABILITY

The effects of various heat-aging conditions on the properties of SILASTIC LS-2323 Fluorosilicone Rubber are shown in Table 2.

HANDLING PRECAUTIONS

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY

Table 2: Heat Resistance of SILASTIC LS-2323 Fluorosilicone Rubber[1]
These values are not intended for use in preparing specifications.

Heat-Aging Conditions	Durometer, Points Change	Tensile Strength, Percent Change	Elongation, Percent Change
1 day/260°C (500°F)	+7	-29	-36
14 days/210°C (410°F)	+6	-1	-36
28 days/210°C (410°F)	+10	-15	-43
60 days/210°C (410°F)	+12	-34	-57

[1]Obtained by adding 1.0 phr 2,5-Bis(tert-butylperoxy)-2,5-dimethylhexane, 45% masterbatch to SILASTIC LS-2323 Fluorosilicone Rubber. Slabs 0.075 inch thick were press cured 10 min. at 171°C (340°F); post-cured 4 hours at 200°C (392°F).

DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

During vulcanization and oven curing, vapors are given off which may be harmful: Inhalation of vapors should be avoided. Vulcanization should be conducted in an area that is properly ventilated. Ovens used for post curing should also be properly ventilated. The following precautionary statement will be displayed on the product container:

CAUTION! TOXIC VAPORS MAY BE EVOLVED IF MATERIAL BURNS.

Trace amounts of highly toxic vapors, trifluoropropionaldehyde, may evolve if material is heated in air above 149°C (300°F). Exposure limits have not been established. Consult an industrial hygienist, consult material safety data sheet. If material is used above 149°C (300°F), provide adequate ventilation. In case of overheating or fire, evacuate the area.

NOTE: If further safety or product information is required, contact your local Dow sales representative.

USABLE LIFE AND STORAGE

When stored at 32°C (90°F) in the original unopened container, this product has a usable life of 24 months from the date of production.

LIMITATIONS

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

SHIPPING LIMITATIONS

None.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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