Technical Data Sheet

XIAMETER™ RBB-6420-50 Silicone Rubber

50 Durometer, molding, steam resistance, uncatalyzed silicone rubber

Features & Benefits

- 50 JIS-Type A hardness
- Good steam resistance
- Good heat resistance
- Longer life at 300°C when adding CP-21 Brown Rubber Additive
- Good chlorine resistance
- Serviceable over wide temperature range
- Pigmentable
- Formulated to meet FDA 21 CFR 177.2600 and BfR XV

Composition

- Silicone rubber (HCR)
- Uncatalyzed stock (U-stock)

Applications

- Molding
- Rice cooker packings
- Electrical pot packings
- Steam resistance
- Chlorine resistance
- Food contacts

Typical Properties

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

Test[1]	Property	Unit	Result
	As supplied		
	Appearance		White
JIS K 6249	Plasticity	mm/100	240
	As cured		
JIS K 6249	Density	g/cm^3	1.14
JIS K 6249	Durometer hardness, JIS type A		50

1. JIS: Japanese Industrial Standard.

Properties obtained using 0.6 part of SILASTIC™ RC-4 50P FD Rubber Additive (2,5-bis(tert-butylperoxy)-2,5-dimethyl hexane, 50% masterbatch) per 100 parts of XIAMETER™ RBB-6420-50 Silicone Rubber: molded 10 minutes at 170°C (338°F) and post-cured 4 hours at 200°C (392°F).

Typical Properties (Cont.)

Test	Property	Unit	Result
JIS K 6249	Tensile strength, JIS#3	MPa	8.6
JIS K 6249	Elongation, JIS#3	%	490
JIS K 6249	Modulus at 100% elongation, JIS#3	MPa	1.10
JIS K 6249	Tear strength, crescent	N/mm	9
JIS K 6249	Tear strength, angle	N/mm	29
JIS K 6249	Linear shrinkage, disc[2]	%	3.3
JIS K 6255	Rebound, Lupke	%	65
JIS K 6249	Compression set, 180°C /22h	%	8
JIS K 6249	Dielectric strength	kV/mm	26
JIS K 6249	Volume resistance	TΩ·m	74

2. Linear shrinkage depends on the curing conditions such as type of curing agent, curing temperature and size of molded product.

How to Use

Milling

For adding vulcanizing agents, additives, and / or pigments or blending, milling with a two-roll mill is the most suitable process. Milling time should be carefully decided to secure uniformity of materials.

Vulcanization

XIAMETER™ RBB-6420-50 Silicone Rubber requires the addition of a vulcanizing agent. SILASTIC™ RC-4 50P FD Rubber Additive is recommended for molding. Standard cure temperature is 170°C (338°F), and its cure time depends on the thickness of final products. Post-cure condition would be 4 hours at 200°C (392°F) after molding in most cases.

The addition reaction curing agents and other SILASTIC™ curing agents are also available for vulcanization.

Compounding

XIAMETER™ RBB-6420-50 Silicone Rubber can be blended with other bases to modify the durometer of the compound. The physical properties of this product can be modified using a range of SILASTIC™ or XIAMETER™ additives. Further, XIAMETER™ RBB-6420-50 Silicone Rubber can be pigmented to almost any color shade desired.

Food Contact

This product has been formulated to meet applicable food contact regulations and recommendations like FDA 21.CFR 177.2600 and BfR Recommendation XV.

Note: It remains the manufacturers' responsibility to test the final product.

For further details on the suitability of this product for food contact applications, please refer to the Food Regulatory Profile.

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

Usable Life and Storage

Product should be stored at or below 32°C(90°F) in original, unopened containers, this product has usable life of 270 days from the date of production.

Packaging Information

XIAMETER™ RBB-6420-50 Silicone Rubber is available in 20 kg (44 lb) boxes.

Limitations

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

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, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Table 1: Heat, Fluid and Steam Resistance of XIAMETER™ RBB-6420-50 Silicone Rubber

Test	Unit	Result
Heat Aged, 72 Hours at 200°C (392°F)		
Hardness Change	points	+2
Tensile Change	%	+6
Elongation Change	%	-13
Heat Aged, 72 Hours at 250°C (482°F)		
Hardness Change	points	+37
Tensile Change	%	-40
Elongation Change	%	-94
IRM 901 Oil, 72 Hours at 150°C (302°F)		
Hardness Change	points	-5
Tensile Change	%	-17
Elongation Change	%	-13
Volume Change	%	+7
Steam Aged, 500 Hours at 0.65 MPa (160°C)		
Hardness Change	points	-+9
Tensile Change	%	-18
Elongation Change	%	-27
Weight Change	%	-2
Steam Aged, 1000 Hours at 0.65 MPa (160°C)		
Hardness Change	points	+6
Tensile Change	%	-22
Elongation Change	%	-35
Weight Change	%	-3

Properties obtained using 0.6 part of SILASTIC™ RC-4 50P FD Rubber Additive (2,5-bis(tert-butylperoxy)-2,5-dimethyl hexane, 50% masterbatch) per 100 parts of XIAMETER™ RBB-6420-50 Silicone Rubber: molded 10 minutes at 170°C (338°F) and post-cured 4 hours at 200°C (392°F).

Table 2: Properties of XIAMETER™ RBB-6420-50 Silicone Rubber with / without SILASTIC™ CP-21 Brown Rubber Additive

		No additive	With SILASTIC™ CP-21 Brown Rubber Additive
Formulations			
XIAMETER™ RBB-6420-50 Silicone Rubber	parts	100	100
SILASTIC™ RC-4 50P FD Rubber Additive	parts	0.6	0.6
SILASTIC™ CP-21 Brown Rubber Additive	parts		4.0

Properties obtained test pieces cured at the following conditions molded 10 minutes at 170°C (338°F) and post-cured 4 hours at 200°C (392°F).

Table 2: Properties of XIAMETER™ RBB-6420-50 Silicone Rubber with / without SILASTIC™ CP-21 Brown Rubber Additive (Cont.)

		No additive	With SILASTIC™ CP-21 Brown Rubber Additive
Cured properties			
Density	g/cm^3	1.15	1.15
Durometer hardness, JIS type A		50	50
Tensile strength, JIS#3	MPa	10.3	9.1
Elongation, JIS#3	%	489	518
Tear strength, crescent	N/mm	10	9
Tear strength, angle	N/mm	28	29
Heat aged, 100 hours at 250°C (482°F)			
Hardness change	points	+42	+3
Tensile change	%	-26	-22
Elongation change	%	-96	-39
Heat aged, 2000 hours at 250°C (482°F)			
Hardness change	points	Not measurable[1]	+20
Tensile change	%	Not measurable[1]	-57
Elongation change	%	Not measurable[1]	-74
Heat aged, 100 hours at 300°C (572°F)			
Hardness change	points	Not measurable[1]	+14
Tensile change	%	Not measurable[1]	-48
Elongation change	%	Not measurable[1]	-61
Heat aged, 200 hours at 300°C (572°F)			
Hardness change	points	Not measurable[1]	+21
Tensile change	%	Not measurable[1]	-55
Elongation change	%	Not measurable[1]	-72

1. Impossible to test because of too brittle or test pieces didn't keep the shape.

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