Technical Data Sheet

XIAMETER™ RBB-2002-75 Base

Can be blended and compounded for making molded, extruded, and calendered goods

Features & Benefits

- General purpose (GP)
- Serviceable over a wide temperature range
- Pigmentable

Composition

- Silicone rubber
- Rubber stock (white, translucent crepe)

Applications

- Molded, extruded, and calendered goods

Typical Properties

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

Formulation 1	
XIAMETER™ RBB-2002-75 Base, parts	100
XIAMETER™ RBM-9020 Modifier (T Catalyst), 50% active, parts	1.5
Press Cured: minutes at °C (°F)	5 / 116 (240)

Test[1]	Property	Unit	Result
	Appearance		White, translucent
ASTM D 926	Plasticity	mm x 100 (mils)	420 (164)
ASTM D 792	Specific Gravity at 23°C (73°F)		1.21
ASTM D 2240	Durometer Hardness, Shore A	points	71
ASTM D 412	Tensile Strength	MPa (psi)	10.2 (1475)
ASTM D 412	Elongation	%	350
ASTM D 412	Modulus at 100% Elongation	MPa (psi)	3.1 (455)
ASTM D 624	Tear Strength, Die B	kN/m (ppi)	17 (95)
ASTM D 2632	Bashore Resilience	%	44
ASTM D 2137	Brittle Point	°C (°F)	-73 (-99)

1. Properties were obtained using Corporate Test Methods (CTMs) on 2.0 ± 0.2 mm-thick (0.080 ± 0.008 in.) slabs. CTMs correspond to standard ASTM (American Society of Testing and Materials) tests in most instances. Copies of CTMs are available upon request.

Form No. 95-1084-01 A

Description

XIAMETER RBB-2002-75 Base is designed for use in compounding general-purpose silicone rubber stocks. This silicone rubber can be blended with selected bases to fabricate parts with other hardnesses upon vulcanization. It is serviceable over a wide temperature range.

The effect of XIAMETER RBM-9020 Modifier (T Catalyst), D, and V catalysts on physical properties is shown in Table I.

Additional properties of this product are shown in subsequent tables.

How To Use

Vulcanizing Agents

XIAMETER RBB-2002-75 Base requires the addition of a vulcanizing agent. XIAMETER RBM-9020 Modifier (T Catalyst) (2,4-dichlorobenzoyl peroxide) is recommended for hot air vulcanizaiton. V catalyst (2,5-bis [tertbutylperoxy] -2,5-dimethylhexane) or D catalyst (dicumyl peroxide) is recommended for molding.

Compounding

XIAMETER RBB-2002-75 Base can be blended with other bases to modify the durometer of the compound. Further, XIAMETER RBB-2002-75 Base can be pigmented to almost any color shade desired.

Heat Stability

Addition of XIAMETER RBM™-9002 Rubber Additive (1 phr) or red iron oxide paste (3 phr) is recommended to improve heat stability with XIAMETER RBB-2002-75 Base. XIAMETER RBM-9002 Rubber Additive allows the rubber to be pigmented to almost any color shade desired.

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 WWW.CONSUMER.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 50°C (122°F) in original, unopened containers.

Limitations

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

Not intended for human injection. Not intended for food use.

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.

Table 1: Properties of XIAMETER™ RBB-2002-75 Base with Various Catalysts

	XIAMETER™ RBM-9020 Modifier T Catalyst	D Catalyst	V Catalyst
Formulations			
XIAMETER™ RBB-2002-75 Base, parts	100.0	100.0	100.0
XIAMETER™ RBM-9020 Modifier (T Catalyst), 50% active, phr	1.5		
D Catalyst, 40% active, phr		2.5	
V Catalyst, 45% active, phr			1.0
Press Cured: minutes at °C (°F)	5 / 116 (240)	10 / 160 (320)	10 / 171 (340)

Test	Unit	Result		
As Molded Properties[1]				
Durometer Hardness, Shore A	points	72	81	82
Tensile Strength	MPa (psi)	8.5 (1230)	8.1 (1180)	8.5 (1230)
Elongation	%	280	180	200
Modulus at 100% Elongation	MPa (psi)	3.0 (435)	4.9 (710)	4.8 (700)
Tear Strength, Die B	kN/m (ppi)	18 (105)	15 (85)	15 (85)
Compression Set, 22 hours at 177°C (350°F)	%	43	33	17
Circle Shrink	%	2.1	3.0	3.3
Post Cured Properties – 4 hours at 200°C (392°F)				
Durometer Hardness, Shore A	points	71	82	82
Tensile Strength	MPa (psi)	9.1 (1325)	8.0 (1155)	8.2 (1195)
Elongation	%	295	180	185
Modulus at 100% Elongation	MPa (psi)	3.0 (440)	5.0 (725)	5.0 (720)
Tear Strength, Die B	kN/m (ppi)	17 (95)	16 (90)	14 (80)
Compression Set, 22 hours at 177°C (350°F)	%	24	10	13
Circle Shrink	%	2.8	3.7	4.1

1. Properties were obtained using Corporate Test Methods (CTMs) on 2.0 mm-thick (0.080 in.) slabs, cured as shown. CTMs correspond to standard ASTM (American Society of Testing and Materials) tests in most instances. Copies of CTMs are available upon request.

Table 2: XIAMETER™ RBB-2002-75 Base with Extending Filler and V Catalyst

Formulations				
XIAMETER™ RBB-2002-75 Base, parts	100.0	100.0	100.0	100.0
5 micron Min-U-Sil®, phr	0	25	50	75
XIAMETER™ RBM-9007 Rubber Additive, phr	0	1	1	1
V Catalyst, 45% active, phr	1	1	1	1
Press Cured: minutes at °C (°F)	10 / 171 (340)	10 / 171 (340)	10 / 171 (340)	10 / 171 (340)
Post Cured: hours at °C (°F)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)

Test	Unit	Result			
Original Physical Properties[1]					
Specific Gravity at 23°C (73°F)		1.22	1.36	1.48	1.58
Durometer Hardness, Shore A	points	82	85	88	90
Tensile Strength	MPa (psi)	8.2 (1195)	8.1 (1175)	8.6 (1245)	6.5 (945)
Elongation	%	185	130	100	60
Modulus at 100% Elongation	MPa (psi)	5.0 (720)	6.4 (930)	8.6 (1245)	n/a
Tear Strength, Die B	kN/m (ppi)	14 (80)	17 (95)	16 (90)	18 (105)
Compression Set, 22 hours at 177°C (350°F)	%	13	9	10	12

1. Properties were obtained using Corporate Test Methods (CTMs) on 2.0 mm-thick (0.080 in.) slabs, cured as shown. CTMs correspond to standard ASTM (American Society of Testing and Materials) tests in most instances. Copies of CTMs are available upon request.

Table3: XIAMETER™ RBB-2002-75 Base / XIAMETER™ RBB-2300-30 Base Blends with XIAMETER™ RBM-9020 Modifier (T Catalyst)

Formulations					
XIAMETER™ RBB-2002-75 Base, parts	100.0	75.0	50.0	25.0	0.0
XIAMETER™ RBB-2300-30 Base parts	0.0	25.0	50.0	75.0	100.0
XIAMETER™ RBM-9002 Rubber Additive, phr	1.0	1.0	1.0	1.0	1.0
XIAMETER™ RBM-9020 Modifier (T Catalyst), 50% active, phr	1.5	1.5	1.5	1.5	1.5
Press Cured: minutes at °C (°F)	5 / 116 (240)	5 / 116 (240)	5 / 116 (240)	5 / 116 (240)	5 / 116 (240)
Post Cured: hours at °C (°F)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)

Test	Unit	Result				
Original Physical Properties[1]						
Durometer Hardness, Shore A	points	70	64	55	46	37
Tensile Strength	MPa (psi)	9.4 (1360)	9.7 (1405)	9.3 (1345)	8.4 (1215)	6.8 (980)
Elongation	%	315	375	420	495	580
Modulus at 100% Elongation	MPa (psi)	2.9 (415)	2.1 (310)	1.4 (205)	1.0 (150)	0.6 (90)
Compression Set, 70 hours at 150°C (302°F)	%	21	22	26	30	24
Compression Set, 22 hours at 177°C (350°F)	%	21	22	26	31	20

1. Properties were obtained using Corporate Test Methods (CTMs) on 2.0 mm-thick (0.080 in.) slabs, cured as shown. CTMs correspond to standard ASTM (American Society of Testing and Materials) tests in most instances. Copies of CTMs are available upon request.

Table 4: XIAMETER™ RBB-2002-75 Base / XIAMETER™ RBB-2300-30 Base Blends with V Catalyst

Formulations					
XIAMETER™ RBB-2002-75 Base, parts	100	75	50	25	0
XIAMETER™ RBB-2300-30 Base, parts	0	25	50	75	100
XIAMETER™ RBM-9002 Rubber Additive, phr	1	1	1	1	1
XIAMETER™ RBM-9020 Modifier (T Catalyst), 50% active, phr	1	1	1	1	1
Press Cured: minutes at °C (°F)	10 / 171 (340)	10 / 171 (340)	10 / 171 (340)	10 / 171 (340)	10 / 171 (340)
Post Cured: hours at °C (°F)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)	4 / 200 (392)

Test	Unit	Result				
Original Physical Properties[1]						
Durometer Hardness, Shore A	points	82	70	59	45	34
Tensile Strength	MPa (psi)	8.4 (1225)	9.0 (13000)	8.7 (1265)	8.2 (1185)	7.2 (1050)
Elongation	%	195	300	415	565	715
Modulus at 100% Elongation	MPa (psi)	4.9 (710)	2.7 (385)	1.6 (230)	0.8 (115)	0.5 (70)
Compression Set, 70 hours at 150°C (302°F)	%	12	12	13	13	14
Compression Set, 22 hours at 177°C (350°F)	%	11	11	12	11	13

1. Properties were obtained using Corporate Test Methods (CTMs) on 2.0 mm-thick (0.080 in.) slabs, cured as shown. CTMs correspond to standard ASTM (American Society of Testing and Materials) tests in most instances. Copies of CTMs are available upon request.

Table 5: Heat and Fluid Resistance of XIAMETER™ RBB-2002-75 Base

	XIAMETER™ RBM-9020 Modifier (T Catalyst)	V Catalyst
Formulations		
XIAMETER™ RBB-2002-75 Base, parts	100.0	100.0
XIAMETER™ RBM-9002 Rubber Additive, phr	1.0	1.0
XIAMETER™ RBM-9020 Modifier (T Catalyst), 50% active, phr	1.5	
V Catalyst, 49% active, phr		1.0
Press Cured: minutes at °C (°F)	5 / 116 (240)	10 / 171 (340)
Post Cured: hours at °C (°F)	4 / 200 (392)	4 / 200 (392)

Test	Unit	Result	
Original Physical Properties[1]			
Durometer Hardness, Shore A	points	70	82
Tensile Strength	MPa (psi)	9.4 (1360)	8.4 (1225)
Elongation	%	315	195
Modulus at 100% Elongation	MPa (psi)	2.9 (415)	4.9 (710)
Tear Strength, Die B	kN/m (ppi)	17 (95)	16 (90)
Compression Set, 70 hours at 150°C (302°F)	%	21	12
Compression Set, 22 hours at 177°C (350°F)	%	22	11
Heat Aged, 70 hours at 225°C (437°F)			
Durometer Hardness, Shore A	points	78	84
Tensile Strength	MPa (psi)	6.8 (990)	5.8 (835)
Elongation	%	225	120
Modulus at 100% Elongation	MPa (psi)	3.8 (545)	5.2 (755)
ASTM #1 Oil, 70 hours at 150°C (302°F)			
Durometer Hardness, Shore A	points	66	78
Tensile Strength	MPa (psi)	8.6 (1240)	8.0 (1160)
Elongation	%	265	160
Modulus at 100% Elongation	MPa (psi)	2.9 (415)	5.1 (745)
Volume Swell	%	6	6
IRM 903 Oil, 70 hours at 150°C (302°F)			
Durometer Hardness, Shore A	points	42	59
Volume Swell	%	46	37
Water Immersion, 70 hours at 100°C (212°F)			
Durometer Hardness, Shore A	points	71	80
Volume Swell	%	1.3	0.5

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