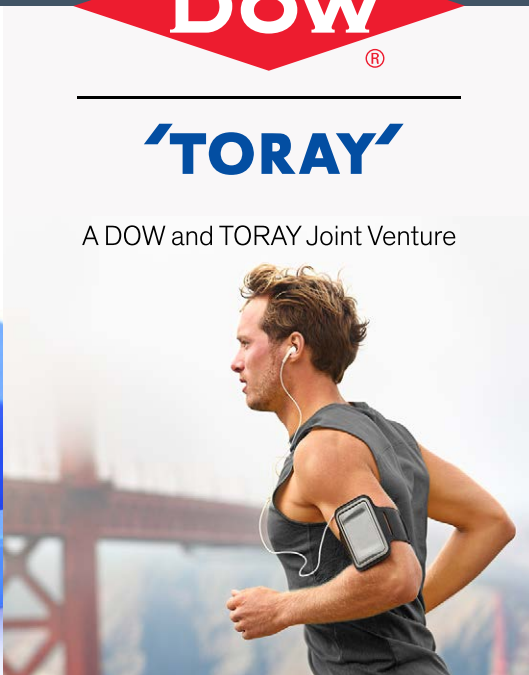


Silicone rubber selection guide



'TORAY'

A DOW and TORAY Joint Venture



Silicone rubber selection guide

Silicone rubber is a synthetic elastomer made of silicone polymer and silica, etc. It has excellent characteristics such as heat resistance, cold resistance, weather resistance, chemical resistance, electrical characteristics, and compression characteristics, etc. that natural rubber or general synthetic rubbers do not have. Because of this, it is used in wide array of fields, from electronics and electrical applications to automobiles, building materials, medical applications, food, leisure and sports applications, etc., widely adopted by many products inside and outside of Japan.

Furthermore, the optimum product can be selected by the use condition, application, and processing process.

HCR High consistency rubber

It is a rubber with an excellent weather resistance in a wide temperature range. It also has the unique chemical characteristics and mechanical characteristics not seen in organic elastomers.

FSR Fluorosilicone rubber

It is a silicone rubber with excellent oil resistance, heat resistance and cold resistance.

LSR Liquid silicone rubber

It is a liquid silicone rubber. High speed production is possible using a Liquid injection molding (LIM).

F-LSR Fluoro-liquid silicone rubber

It is a fluoro-liquid silicone rubber. High speed production is possible using a Liquid injection molding (LIM).

Typical products and applications

	Page	Product grade		Main applications	
HCR High consistency rubber	4	General purpose	XIAMETER™ RBB-6630-30 Base XIAMETER™ RBB-6640-40 Base XIAMETER™ RBB-6650-50 Base XIAMETER™ RBB-6660-60 Base	XIAMETER™ RBB-6670-70 Base XIAMETER™ RBB-6680-80 Base XIAMETER™ RBB-6661-60 Base XIAMETER™ RBB-6671-70 Base	General molding products, rolls, sealings, gaskets, home electric components, sheets
	5	Low hardness	SILASTIC™ DY 32-152 U Silicone Rubber SILASTIC™ DY 32-1005 U Silicone Rubber	XIAMETER™ RBB-6610-10 Base	Anti-vibration rubbers, low hardness special components
		Middle strength	XIAMETER™ RBB-2004-40 Base XIAMETER™ RBB-2004-50 Base XIAMETER™ RBB-2004-60 Base	XIAMETER™ RBB-2004-70 Base XIAMETER™ RBB-2004-80 Base	General molding goods, home electric components, sheets
	6	Extrusion (general)	XIAMETER™ RBB-2070-40 Base XIAMETER™ RBB-2070-50 Base	XIAMETER™ RBB-2070-60 Base XIAMETER™ RBB-2070-70 Base	Tubes, hoses
		Extrusion (high transparency)	XIAMETER™ SE 1184 U Silicone Rubber XIAMETER™ SE 1185 U Silicone Rubber XIAMETER™ SE 1186 U Silicone Rubber	XIAMETER™ SE 1187 U Silicone Rubber XIAMETER™ SE 1188 U Silicone Rubber	
	7	High fatigue life	SILASTIC™ SE 4704 U Silicone Rubber SILASTIC™ SE 4705 U Silicone Rubber SILASTIC™ SE 4706 U Silicone Rubber	SILASTIC™ SE 4707 U Silicone Rubber SILASTIC™ SE 4708 U Silicone Rubber SILASTIC™ SE 4709 U Silicone Rubber	Keypads, switches
	8	Low yellowing	SILASTIC™ DY 32-5013 U Silicone Rubber SILASTIC™ DY 32-6014 U Silicone Rubber	SILASTIC™ DY 32-7040 U Silicone Rubber SILASTIC™ DY 32-8013 U Silicone Rubber	Keypads, switches
		Oil resistance	XIAMETER™ SH 745 U Silicone Rubber XIAMETER™ SH 746 U Silicone Rubber	XIAMETER™ SH 747 U Silicone Rubber XIAMETER™ SH 748 UN Silicone Rubber	Industrial rolls, O rings
	9	Flame retardant	SILASTIC™ SH 502 U Silicone Rubber SILASTIC™ SH 502 U A/B Silicone Rubber	SILASTIC™ SH 1447 U A Silicone Rubber	Anode caps, lamp holders, sealings
		Steam resistance	SILASTIC™ SRX 495 U Silicone Rubber SILASTIC™ SE 6767 U Silicone Rubber	XIAMETER™ RBB-6420-50 Silicone Rubber	Rice cooker sealings, electric pot sealings
		Heat resistance	SILASTIC™ SH 52 U Silicone Rubber	SILASTIC™ SH 82 UD Silicone Rubber	Plug caps, heat resistant caps
		Electrically conductive	SILASTIC™ SRX 539 UT Silicone Rubber	SILASTIC™ SE 6770 U-P Silicone Rubber	Contact points, feed rolls
	10	Oil bleeding	SILASTIC™ DY 32-366 U Silicone Rubber SILASTIC™ DY 32-464 U Silicone Rubber	SILASTIC™ DY 32-502 U Silicone Rubber	Connector seals, sealings
Thermally conductive		SILASTIC™ DY 32-337 U Silicone Rubber SILASTIC™ DY 32-338 U Silicone Rubber	SILASTIC™ DY 32-339 U Silicone Rubber	Industrial rolls	
FSR Fluorosilicone rubber	11	General purpose	SILASTIC™ LS 63 U Fluorosilicone Rubber SILASTIC™ LS-2940 U Fluorosilicone Rubber	SILASTIC™ DY 37-016 U Fluorosilicone Rubber SILASTIC™ DY 37-071 U Fluorosilicone Rubber	Automobile gaskets, O rings, diaphragms
		High strength	SILASTIC™ SE 1561 U Fluorosilicone Rubber	SILASTIC™ SE 1570 U Fluorosilicone Rubber	
		High fatigue life	SILASTIC™ DY 37-029 U Fluorosilicone Rubber		
LSR Liquid silicone rubber	12		SILASTIC™ RBL-9200-20 Liquid Silicone Rubber SILASTIC™ RBL-9200-30 Liquid Silicone Rubber SILASTIC™ RBL-9200-40 Liquid Silicone Rubber	SILASTIC™ RBL-9200-50 Liquid Silicone Rubber SILASTIC™ RBL-9200-60 Liquid Silicone Rubber SILASTIC™ RBL-9200-70 Liquid Silicone Rubber	General molding goods, infant cares, home electric components, valves, diaphragms, seals
F-LSR Fluoro-liquid silicone rubber	13		SILASTIC™ FL 30-9201 Fluoro Liquid Silicone Rubber SILASTIC™ FL 40-9201 Fluoro Liquid Silicone Rubber	SILASTIC™ FL 60-9201 Fluoro Liquid Silicone Rubber SILASTIC™ FL 70-9201 Fluoro Liquid Silicone Rubber	Automobile gaskets, O rings, diaphragms
	14	Curing agent	SILASTIC™ RC-3 40P FD Rubber Additive SILASTIC™ RC-4 50P FD Rubber Additive SILASTIC™ RC-8 Rubber Additive SILASTIC™ RC-14 A Rubber Additive SILASTIC™ RD-27 Rubber Additive	SILASTIC™ MR-91 Rubber Additive SILASTIC™ RD-7 Rubber Additive SILASTIC™ RD-9 Rubber Additive SILASTIC™ RD-201 Rubber Additive	
		Primer			
	15	Pigments			
		Additives			

HCR High consistency rubber

General purpose

Product grade		General purpose								
Product name	XIAMETER™ RBB-6630-30	XIAMETER™ RBB-6640-40	XIAMETER™ RBB-6650-50	XIAMETER™ RBB-6660-60	XIAMETER™ RBB-6670-70	XIAMETER™ RBB-6680-80	XIAMETER™ RBB-6661-60	XIAMETER™ RBB-6671-70		
Appearance	Milky-white translucent	Milky-white translucent	Milky-white translucent	Grey white	Grey white	Grey white	Milky-white translucent	Milky-white translucent		
Plasticity (At 60 minutes after milling)	200	190	230	250	310	390	260	260		
Curing agent	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD		
Dosage of curing agent*1	0.75	0.65	0.6	0.5	0.45	0.4	0.5	0.5		
Properties after curing	Hardness (JIS Type A)	30	40	51	61	70	84	60	70	
	Density g/cm ³	1.11	1.14	1.16	1.24	1.34	1.33	1.18	1.19	
	Tensile strength MPa	7.6	8.7	8.7	7.3	5.5	8.0	9.8	7.6	
	Elongation %	740	580	390	280	330	170	450	320	
	100% modulus MPa	0.94	0.84	1.81	3.15	3.27	6.31	2.29	2.93	
	Tear strength	Crescent N/mm	10	11	7	7	11	12	9	10
		Angle N/mm	17	22	24	17	16	19	29	25
	Linear shrinkage ² %	3.3	3.3	3.2	2.9	2.7	2.8	3.2	3.4	
	Rebound (Lupke) %	54	56	66	66	52	48	60	55	
	Compression set 180°C/22 h %	41	32	19	21	26	32	27	22	
	Dielectric strength KV/mm	23	23	28	28	29	30	29	26	
	Volume resistance TΩ•m	23	9	15	22	7	4	3	2	
	Food use laws and regulations ³	US: FDA	○	○	○	○	○	○	○	○
		EU: BfR	○	○	○	○	○	○	○	○
	Flame-retardant UL94	HB	HB	HB	HB	HB	HB	HB	HB	
Heat resistance	200°C/72 h	Hardness change point	-5	-3	0	-1	+1	+3	0	+3
		Tensile change %	-37	-16	-18	0	+14	+3	-17	-8
		Elongation change %	-8	-14	-13	-23	-30	-17	-34	-33
	250°C/72 h	Hardness change point	-19	-10	-8	-6	-3	+3	-3	+1
		Tensile change %	-75	-36	-35	-12	-8	-20	-44	-38
		Elongation change %	-21	-15	-15	-22	-48	-47	-49	-59
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point	-7	-7	-7	-5	-4	-4	-3	-4
		Tensile change %	-9	-5	+8	+5	+13	+15	-4	-4
		Elongation change %	-5	-11	-8	-13	-20	+4	-28	-34
		Volume change %	+8	+7	+8	+6	+6	+6	+7	+6
	IRM903 Oil 150°C/72 h	Hardness change point	-18	-19	-19	-19	-20	-23	-20	-23
		Tensile change %	-63	-58	-63	-25	-12	-4	-19	-8
		Elongation change %	-45	-46	-49	-33	-26	0	-35	-34
		Volume change %	+71	+61	+51	+43	+38	+37	+48	+43

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing, and 200°C x 4 hours post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

*3 Please refer to the notes described later regarding the food use laws and regulations.

HCR High consistency rubber

Low hardness degree/ Middle strength

Product grade		Low hardness			Middle strength					
Product name		SILASTIC™ DY 32-1005 U	XIAMETER™ RBB-6610-10	SILASTIC™ DY 32-152 U	XIAMETER™ RBB-2004-40	XIAMETER™ RBB-2004-50	XIAMETER™ RBB-2004-60	XIAMETER™ RBB-2004-70	XIAMETER™ RBB-2004-80	
Appearance		Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	
Plasticity (At 60 minutes after milling)		140	120	140	190	230	250	300	290	
Curing agent		SILASTIC™ MR-53/ SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	
Dosage of curing agent*1		1.4/0.6	0.8	0.8	0.6	0.6	0.5	0.5	0.5	
Properties after curing	Hardness (JIS Type A)	5	8	17	43	52	58	68	78	
	Density g/cm ³	1.05	1.04	1.06	1.11	1.14	1.15	1.18	1.20	
	Tensile strength MPa	2.2	3.5	2.9	10.3	10.6	9.8	9.4	9.5	
	Elongation %	1060	1500	950	920	770	670	510	370	
	100% modulus MPa	0.11	0.16	0.22	0.82	1.12	1.42	2.41	3.87	
	Tear strength	Crescent N/mm	4	5	16	30	25	23	19	12
		Angle N/mm	7	6	13	27	26	27	26	24
	Linear shrinkage ² %	3.8	4.3	4.3	3.5	3.6	3.6	3.8	3.5	
	Rebound (Lupke) %	27	43	35	57	53	54	50	52	
	Compression set 180°C/22 h %	79	49	49	39	35	36	37	31	
	Dielectric strength KV/mm	20	21	26	27	29	29	32	32	
	Volume resistance TΩ•m	2	42	24	470	420	210	310	370	
	Food use laws and regulations ³	US: FDA	○	○		○	○	○	○	
		EU: BfR	○	○		○	○	○	○	
Flame-retardant UL94				HB						
Heat resistance	200°C/72 h	Hardness change point	-4	-4	0	+4	+3	+5	+2	+6
		Tensile change %	-39	-37	-13	-33	-11	-3	-5	-10
		Elongation change %	-31	-6	-34	-25	-14	-28	-35	-42
	250°C/72 h	Hardness change point	+52	-9	+55	+47	+42	+34	+26	+18
		Tensile change %	-5	-57	-37	-25	-23	-20	+9	+23
		Elongation change %	-92	-57	-98	-98	-97	-98	-97	-97
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point				-2	-3	-4	-3	-2
		Tensile change %				-38	-23	-16	-31	-31
		Elongation change %				-27	-23	-26	-47	-48
		Volume change %				+7	+7	+6	+6	+6
	IRM903 Oil 150°C/72 h	Hardness change point				-18	-24	-26	-28	-25
		Tensile change %				-68	-52	-40	-37	-31
		Elongation change %				-59	-49	-45	-41	-42
		Volume change %				+64	+59	+52	+48	+42

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing and 200°C x 4 hours post curing.

For XIAMETER™ RBB-6610-10 and SILASTIC™ DY 32-152 U, the test piece is prepared at 170°C x 10 minutes curing and 200°C x 2 hours post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

*3 Please refer to the notes described later regarding the food use laws and regulations.

HCR High consistency rubber

Extrusion

Product grade		General purpose				High transparency					
Product name		XIAMETER™ RBB-2070-40	XIAMETER™ RBB-2070-50	XIAMETER™ RBB-2070-60	XIAMETER™ RBB-2070-70	XIAMETER™ SE 1184 U	XIAMETER™ SE 1185 U	XIAMETER™ SE 1186 U	XIAMETER™ SE 1187 U	XIAMETER™ SE 1188 U	
Appearance		Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	
Plasticity (At 60 minutes after milling)		210	230	270	290	220	230	300	320	370	
Curing agent		SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	SILASTIC™ RC-14 A	
Dosage of curing agent*1		1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3	
Properties after curing	Hardness (JIS Type A)	42	51	61	70	36	51	63	73	81	
	Density g/cm ³	1.15	1.14	1.18	1.20	1.14	1.14	1.19	1.20	1.23	
	Tensile strength MPa	8.8	9.1	9.9	9.1	9.9	10.6	10.2	9.2	10.7	
	Elongation %	760	570	580	480	1030	580	570	390	320	
	100% modulus MPa	0.67	1.09	1.45	2.52	0.45	1.09	1.47	3.09	3.9	
	Tear strength	Crescent N/mm	16	11	12	16	28	11	18	11	11
		Angle N/mm	26	29	32	35	26	24	24	24	21
	Linear shrinkage ² %	2.4	2.3	2.3	2.4	2.5	2.4	2.4	2.6	2.8	
	Rebound (Lupke) %	42	56	49	49	17	42	36	43	50	
	Compression set 180°C/22 h %	70	32	58	60	102	73	88	79	84	
	Dielectric strength KV/mm	27	30	32	33	26	30	27	28	28	
	Volume resistance TΩ•m	55	240	230	210	33	240	19	26	17	
	Food use laws and regulations ³	US: FDA	○	○	○	○	○	○	○	○	○
		EU: BfR	○	○	○	○	○				
Flame-retardant UL94											
Heat resistance	200°C/72 h	Hardness change point	+5	+5	+6	+5	+6	+6	+5	+6	+4
		Tensile change %	-7	+17	+7	+4	-24	-6	-1	+12	+2
		Elongation change %	-17	-14	-23	-32	-27	-24	-28	-26	-44
	250°C/72 h	Hardness change point	+27	+34	+30	+20	+25	+31	+22	+17	+14
		Tensile change %	-50	-36	-24	-6	-45	-47	-24	+21	+59
		Elongation change %	-90	-94	-94	-96	-88	-93	-92	-89	-89
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point	-7	-6	-5	-4	-11	-5	-5	-2	-2
		Tensile change %	-12	0	-11	-16	-61	-20	-29	-16	-22
		Elongation change %	-3	-9	-22	-30	-23	-16	-28	-30	-44
		Volume change %	+7	+6	+6	+6	+8	+7	+7	+6	+6
	IRM903 Oil 150°C/72 h	Hardness change point	-26	-26	-31	-30	-29	-25	-31	-26	-25
		Tensile change %	-52	-52	-38	-21	-79	-59	-44	-20	-18
		Elongation change %	-43	-40	-38	-30	-47	-27	-37	-30	-23
		Volume change %	+68	+57	+54	+48	+77	+57	+54	+43	+40

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: For XIAMETER™ RBB-2070 series, the test piece is prepared at 120°C x 10 minutes curing and 200°C x 4 hours post curing.
For XIAMETER™ SE 118X series, the test piece is prepared at 120°C x 10 minutes curing and 250°C x 1 hour post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

*3 Please refer to the notes described later regarding the food use laws and regulations.

HCR High consistency rubber

High fatigue life

Product grade		High fatigue life						
Product name	SILASTIC™ SE 4704 U	SILASTIC™ SE 4705 U	SILASTIC™ SE 4706 U	SILASTIC™ SE 4707 U	SILASTIC™ SE 4708 U	SILASTIC™ SE 4709 U		
Appearance	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent		
Plasticity (At 60 minutes after milling)	200	190	210	220	260	260		
Curing agent	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD		
Dosage of curing agent*1	0.6	0.6	0.5	0.5	0.5	0.5		
Hardness (JIS Type A)	41	52	60	71	79	85		
Density g/cm ³	1.12	1.11	1.12	1.14	1.16	1.19		
Tensile strength MPa	10.9	8.7	8.4	9.2	8.2	9.9		
Elongation %	750	420	270	220	150	110		
100% modulus MPa	0.76	1.43	2.87	4.51	6.10	9.26		
Tear strength	Crescent N/mm	20	14	10	8	7	6	
	Angle N/mm	27	31	29	26	22	16	
Linear shrinkage ² %	3.7	3.9	3.7	3.6	3.6	3.4		
Rebound (Lupke) %	64	65	70	64	68	65		
Compression set 180°C/22 h %	34	18	18	18	18	17		
Fatigue life (100% elongation) 1 million times	3	2.2	1.8	1.2	0.1	*4		
Dielectric strength KV/mm	25	27	27	29	32	32		
Volume resistance TΩ•m	280	210	510	96	310	110		
Food use laws and regulations ³	US: FDA	○	○	○	○	○		
	EU: BfR							
Flame-retardant UL94	HB	HB	HB		HB			
Heat resistance	200°C/72 h	Hardness change point	-1	0	0	+4	+3	+2
		Tensile change %	-19	-15	-24	-20	-10	-9
		Elongation change %	-8	-12	-30	-33	-30	-36
	250°C/72 h	Hardness change point	+46	+35	+28	+17	+12	+7
		Tensile change %	-74	-25	-35	-39	-39	-17
		Elongation change %	-98	-93	-93	-91	-91	-86

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing, and 200°C x 4 hours post curing.

- *1 Dosage of curing agent is per 100 parts of the product.
- *2 Linear shrinkage depends on the curing conditions such as curing agent, curing temperature, and size of molded product.
- *3 Please refer to the notes described later regarding the food use laws and regulations.
- *4 SILASTIC™ SE 4709 U is not high endurance grade.

HCR High consistency rubber

Low yellowing/oil resistance

Product grade		Low yellowing				Oil resistance				
Product name		SILASTIC™ DY 32-5013 U	SILASTIC™ DY 32-6014 U	SILASTIC™ DY 32-7040 U	SILASTIC™ DY 32-8013 U	XIAMETER™ SH 745 U	XIAMETER™ SH 746 U	XIAMETER™ SH 747 U	XIAMETER™ SH 748 UN	
Appearance		Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Grey white	Grey white	Grey white	Grey white	
Plasticity (At 60 minutes after milling)		210	230	280	330	250	270	280	340	
Curing agent		SILASTIC™ RC-8	SILASTIC™ RC-8	SILASTIC™ RC-8	SILASTIC™ RC-8	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	
Dosage of curing agent*1		0.5	0.5	0.5	0.5	0.5	0.45	0.45	0.4	
Hardness (JIS Type A)		51	60	70	80	52	60	71	81	
Density g/cm ³		1.17	1.18	1.21	1.24	1.33	1.41	1.44	1.45	
Tensile strength MPa		8.2	8.3	7.8	7.4	6.7	7.2	8.0	8.5	
Elongation %		570	430	410	310	350	260	170	140	
100% modulus MPa		1.13	2.14	2.96	4.24	1.93	3.48	5.38	7.33	
Tear strength	Crescent N/mm	12	12	21	17	7	7	8	9	
	Angle N/mm	25	31	31	26	25	23	20	15	
Linear shrinkage ² %		3.5	3.7	3.7	3.9	2.6	2.5	2.6	2.3	
Rebound (Lupke) %		56	56	50	50	74	70	65	58	
Compression set 180°C/22 h%		20	17	22	29	11	9	8	9	
Dielectric strength KV/mm		24	30	28	30	28	30	31	34	
Volume resistance TΩ•m		30	150	14	6.2	17	51	28	24	
Food use laws and regulations ³	US: FDA		○	○		×	×	×	×	
	EU: BfR									
Flame-retardant UL94			HB	HB	HB					
Heat resistance	200°C/72 h	Hardness change point	+3	+6	+3	-1	0	+1	+1	
		Tensile change %	-5	+3	-2	+4	+17	+23	-6	+2
		Elongation change %	-17	-21	-22	-24	-13	-15	-23	-20
	250°C/72 h	Hardness change point	-1	+36	+4	+4	-8	-4	+2	+1
		Tensile change %	-33	0	-29	-17	-17	-17	-14	-25
		Elongation change %	-42	-98	-60	-64	-28	-34	-31	-39
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point				-2	-5	-5	-4	-2
		Tensile change %				-9	+3	+13	+8	+18
		Elongation change %				-37	-20	-7	-12	+3
		Volume change %				+5	+6	+5	+5	+4
	IRM903 Oil 150°C/72 h	Hardness change point				-26	-16	-18	-18	-21
		Tensile change %				-2	-31	-22	-10	-7
		Elongation change %				-16	-31	-23	-7	-1
Volume change %				+39	+43	+38	+32	+29		

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing and 200°C x 4 hours post curing.

For XIAMETER™ SH 74X series, the test piece is prepared at 170°C x 10 minutes curing, without post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

*3 Please refer to the notes described later regarding the food use laws and regulations.

HCR High consistency rubber

Flame-retardant/steam resistance/heat resistance/electrically conductive

Product grade		Flame retardant			Steam resistance			Heat resistance		Electrically Conductive	
Product name	SILASTIC™ SH 502 U	SILASTIC™ SH 502 U A/B	SILASTIC™ SH 1447 U A	SILASTIC™ SRX 495 U	SILASTIC™ RBB-6420-50	SILASTIC™ SE 6767 U	SILASTIC™ SH 52 U	SILASTIC™ SH 82 UD	SILASTIC™ SRX 539 UT	SILASTIC™ SE 6770 U-P	
Appearance	Dark grey	Grey white	Grey white	Light yellow	White	Light yellow	Light tan	Light tan	Black	Black	
Plasticity (At 60 minutes after milling)	210	260	260	250	240	260	260	310	510	670	
Curing agent	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-14 A	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	
Dosage of curing agent*1	0.5	0.5	0.45	0.8	0.6	0.5	1.0	1.1	1.2	2.0	
Hardness (JIS Type A)	55	55	72	51	50	70	50	81	64	76	
Density g/cm³	1.41	1.37	1.45	1.15	1.14	1.18	1.17	1.23	1.17	1.21	
Tensile strength MPa	4.8	7.2	7.9	9.9	8.6	10.7	8.6	9.2	6.2	7.3	
Elongation %	420	470	200	470	490	230	500	170	310	120	
100% modulus MPa	2.00	2.11	5.48	1.20	1.10	4.15	1.09	5.93	2.86	6.44	
Tear strength	Crescent N/mm	9	12	9	9	9	7	10	9	8	
	Angle N/mm	20	26	18	27	29	18	23	15	16	
Linear shrinkage² %	2.8	2.7	2.7	3.5	3.3	3.2	3.4	3.9	3.9	3.9	
Rebound (Lupke) %	64	57	62	64	65	67	59	53	48	52	
Compression set 180°C/22 h %	17	26	11	9	8	7	9	16	56	33	
Dielectric strength KV/mm	30	27	32	28	26	31	28	34			
Volume resistance TΩ•m	74	43	250	390	74	540	540	390	3.8*3	1.9*3	
Food use laws and regulations⁴	US: FDA	x	x	x	○	x	x	x	x	x	
	EU: BfR				○						
Flame-retardant UL94	V-0	V-0	V-0	HB							
Heat resistance	200°C/72 h	Hardness change point	+2	+4	+1	+2	+2	+2	+2	+2	+3
		Tensile change %	+13	-1	+9	-6	+6	-4	-6	-10	-3
		Elongation change %	-20	-29	-19	-16	-13	-11	-11	-25	-13
	250°C/72 h	Hardness change point	+3	+3	+1	0	+37	0	+2	+3	+23
		Tensile change %	+5	-13	-11	-24	-40	-30	-43	-28	-77
		Elongation change %	-55	-50	-29	-32	-94	-34	-40	-48	-98
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point				-6	-5	-5	-4	-5	
		Tensile change %				-6	-17	-13	-16	-13	
		Elongation change %				-14	-13	-7	-16	-19	
		Volume change %				+7	+7	+6	+7	+7	
	IRM903 Oil 150°C/72 h	Hardness change point							-21	-24	
		Tensile change %							-53	-35	
		Elongation change %							-41	-32	
		Volume change %							+57	+41	

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing and 200°C x 4 hours post curing.

For SILASTIC™ SH 502 U A/B and SILASTIC™ SH 1447 U A, the test piece is prepared at 160°C x 10 minutes curing and 200°C x 4 hours post curing.

For SILASTIC™ SH 82 UD, the test piece is prepared at 120°C x 10 minutes curing and 250°C x 24 hours post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

*3 The unit is Ω•cm.

*4 Please refer to the notes described later regarding the food use laws and regulations.

HCR High consistency rubber

Oil bleeding/thermally conductive

Product grade		Oil bleeding			Thermally conductive			
Product name		SILASTIC™ DY 32-464 U	SILASTIC™ DY 32-366 U	SILASTIC™ DY 32-502 U	SILASTIC™ DY 32-337 U	SILASTIC™ DY 32-338 U	SILASTIC™ DY 32-339 U	
Appearance		Light yellow	Grey white	Grey white	Light yellow	Grey white	Grey white	
Plasticity (At 60 minutes after milling)		180	160	220	190	230	440	
Curing agent		SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	
Dosage of curing agent*1		0.7	0.6	0.5	0.8	0.8	0.8	
Hardness (JIS Type A)		30	40	50	46	72	92	
Density g/cm ³		1.14	1.18	1.19	1.32	1.46	1.79	
Tensile strength MPa		7.0	7.7	7.6	5.8	8.7	9.1	
Elongation %		730	580	450	320	160	60	
100% modulus MPa		0.50	0.93	1.74	1.37	5.78	-	
Tear strength	Crescent N/mm	8	9	8	5	7	10	
	Angle N/mm	18	22	21	20	19	16	
Linear shrinkage ² %		3.3	3.2	3.0	2.9	2.7	2.1	
Rebound (Lupke) %		52	59	63	79	71	52	
Compression set 180°C/22 h %		30	23	23	3	4	12	
Dielectric strength KV/mm		24	25	25	29	30	29	
Volume resistance TΩ•m		4	7	5	34	31	12	
Thermal conductivity W/(m•K)					0.47	0.55	1.14	
Food use laws and regulations ³	US: FDA	x	x	x	x	x	x	
	EU: BfR			x				
Flame-retardant UL94				HB				
Heat resistance	200°C/72 h	Hardness change point	0	+1	0	0	+2	
		Tensile change %	-10	0	-3	+3	+4	+8
		Elongation change %	-7	-13	-15	-10	-5	+14
	250°C/72 h	Hardness change %	-14	-8	-6	-9	+2	-1
		Tensile change %	-55	-26	-24	-41	-28	-18
		Elongation change %	-5	-18	-20	-34	-36	-15
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point	-4	-1	-2	-6	-5	-3
		Tensile change %	+14	+9	+1	-6	+3	+13
		Elongation change %	+11	-2	-3	-6	+6	+14
	IRM903 Oil 150°C/72 h	Volume change %	+4	+2	+3	+6	+5	+3
		Hardness change point	-15	-14	-14	-13	-16	-13
		Tensile change %	-48	-46	-36	-24	-11	+7
	Elongation change %	-34	-31	-25	-25	-6	+5	
	Volume change %	+61	+50	+45	+45	+32	+19	

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing, and 200°C x 4 hours post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

*3 Please refer to the notes described later regarding the food use laws and regulations.

FSR Fluorosilicone rubber

General purpose/high strength/high fatigue life

Product grade		General purpose				High strength		High fatigue life	
Product name		SILASTIC™ LS-2940 U	SILASTIC™ DY 37-016 U	SILASTIC™ LS 63 U	SILASTIC™ DY 37-071 U	SILASTIC™ SE 1561 U	SILASTIC™ SE 1570 U	SILASTIC™ DY 37-029 U	
Appearance		Light yellow	Light yellow	White	Light yellow	Light yellow	Light yellow	Brown	
Plasticity (At 60 minutes after milling)		292	275	319	324	301	296	228	
Curing agent		SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	SILASTIC™ RC-4 50P FD	
Dosage of curing agent*1		1	1	1	1	1	1	1	
Properties after curing	Hardness (JIS Type A)	41	53	60	70	60	70	47	
	Density g/cm ³	1.40	1.42	1.48	1.45	1.45	1.48	1.42	
	Tensile strength MPa	9.9	8.6	7.8	9.2	8.8	8.1	10.5	
	Elongation %	370	330	340	220	400	310	410	
	100% modulus MPa	1.2	1.7	2.7	3.7	1.8	2.6	1.5	
	Tear strength	Crescent N/mm	12	11	28	11	22	22	16
		Angle N/mm	21	22	21	25	25	25	27
	Linear shrinkage*2 %		3.0	3.2	3.6	3.4	3.0	3.7	3.7
	Rebound (Lupke) %		43	40	15	33	27	22	37
	Compression set 150°C/70 h %		1	5	18	6	7	14	7
Heat resistance	200°C/72 h	Hardness change point	+1	+1	+7	-1	+1	+5	+0
		Tensile change %	-14	-17	-20	-18	-19	-17	-14
		Elongation change %	-12	-1	-34	-12	-6	-20	-4
Oil resistance	IRM901 oil 150°C/72 h	Hardness change point	-5	-6	-1	-4	-7	-2	-3
		Tensile change %	-17	-13	+7	-11	-11	-11	-12
		Elongation change %	-10	-7	-8	-13	-1	-19	-2
		Volume change %	+4	+3	+3	+4	+4	+3	+3
Fuel resistance	FUEL C, 23°C/72 h	Volume change %	+21	+23	+21	+23	+24	+23	+21

(This is not the specification value.)

Measurement: In compliance with JIS K 6249

Rebound: In compliance with JIS K 6255

Test piece: The test piece is prepared at 170°C x 10 minutes curing and 200°C x 4 hours post curing.

For SILASTIC™ LS 63 U, the test piece is prepared at 170 x 10 minutes curing and 200°C x 8 hours post curing.

*1 Dosage of curing agent is per 100 parts of the product.

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

LSR Liquid silicone rubber

Liquid silicone rubber

Liquid silicone rubber								
Product name		SILASTIC™ RBL-9200-20	SILASTIC™ RBL-9200-30	SILASTIC™ RBL-9200-40	SILASTIC™ RBL-9200-50	SILASTIC™ RBL-9200-60	SILASTIC™ RBL-9200-70	
Appearance Part A		Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	
Appearance Part B		Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	Milky-white translucent	
Viscosity Part A ¹ Pa•s		130	170	150	180	120	230	
Viscosity Part B ¹ Pa•s		120	150	130	160	130	210	
Curing profile	120°C 10 minutes Curelastometer	T10 minutes	0.5	0.8	0.9	0.8	0.9	
		T90 minutes	1.1	1.0	1.2	1.1	1.3	
Hardness (JIS Type A)		21	31	46	51	62	72	
Density g/cm ³		1.10	1.12	1.11	1.12	1.13	1.14	
Tensile strength MPa		10.0	10.6	10.6	10.2	10.6	10.1	
Elongation %		910	810	580	520	370	340	
100% modulus MPa		0.33	0.49	1.62	2.41	4.06	4.85	
Tear strength	Crescent N/mm	41	28	39	39	42	9	
	Angle N/mm	19	22	37	42	46	48	
Linear shrinkage ² %		2.5	2.6	2.3	2.2	2.4	2.5	
Rebound (Lupke) %		47	62	71	73	67	69	
Compression set 180°C/22 h %		50	23	20	28	34	33	
Dielectric strength KV/mm		20	21	26	24	28	27	
Volume resistance TΩ•m		310	290	510	240	160	140	
Food use laws and regulations ³	US: FDA	○	○	○	○	○	○	
	EU: BfR	○	○	○	○	○	○	
Drinking water use ⁴	KTW	○	○	○	○	○	○	
	WRAS	○	○	○	○	○	○	
In fact care use ⁵		○	○	○	○	○	○	
Heat resistance	200°C/72 h	Hardness change point	+4	+5	0	0	+1	+2
		Tensile change %	-10	-8	-2	-4	-3	-5
		Elongation change %	-14	-14	-9	-12	-15	-12
	230°C/72 h	Hardness change point	+7	+6	-4	-3	-3	-1
		Tensile change %	-48	-35	-33	-29	-34	-49
		Elongation change %	-62	-49	-50	-52	-48	-70
	250°C/72 h	Hardness change point	+19	+6	0	-6	+12	+6
		Tensile change %	-63	-56	-71	-42	-51	-53
		Elongation change %	-85	-68	-82	-59	-86	-86

(This is not the specification value.)

Mix Liquid A:Liquid B = 1:1, Measurement: In compliance with JIS K 6249. Rebound: In compliance with JIS K 6255.
Test piece: The test piece is prepared at 150°C x 5 minutes curing, and 200°C x 2 hours post curing.

*1 Shearing speed 10 s⁻¹

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

*3 Please refer to the notes described later regarding the food use laws and regulations.

*4 Referring to the products recorded in KTW (Germany: Gas and Water Business Association) certificate and WRAS(UK: Water Regulations Advisory Scheme).

*5 Referring to the products that can be used for infant care.

F-LSR Fluoro-liquid silicone rubber

Fluoro-liquid silicone rubber

Fluoro-liquid silicone rubber										
Product name		SILASTIC™ FL 30-9201		SILASTIC™ FL 40-9201		SILASTIC™ FL 60-9201		SILASTIC™ FL 70-9201		
Appearance Part A		Light yellow		Light yellow		Light yellow		Light yellow		
Appearance Part B		Milky-white translucent		Milky-white translucent		White		White		
Viscosity Part A ¹ Pa•s		520		770		850		1000		
Viscosity Part B ¹ Pa•s		340		790		850		1000		
		Non-post curing	After post curing	Non-post curing	After post curing	Non-post curing	After post curing	Non-post curing	After post curing	
Properties after curing	Hardness (Shore A)		30	33	40	44	60	62	68	70
	Density g/cm ³		1.44		1.44		1.42		1.42	
	Tensile strength MPa		9.4	8.8	9.4	8.5	6.5	7.0	5.8	6.1
	Elongation %		550	510	480	410	220	225	180	180
	100% modulus MPa		0.56	0.67	1.14	1.23	2.58	2.8	3.32	3.54
	Tear strength (ASTM Die B) N/mm		16	16	16	14	14	15	15	15
	Compression set 175°C/22 h %		21	10	17	11	21	11	23	13
Fluid resistance ²	Dexron III, 125°C/168 h	Volume change %	+1		+1		+1		+2	
	IRM 903, 150°C/168 h	Volume change %	+3		+2		+2		+2	
	FUEL C, 60°C/168 h	Volume change %	+25		+23		+21		+22	
	FAMB 60°C/168 h	Volume change %	+34		+32		+29		+27	
	E85, 60°C/168 h	Volume change %	+12		+11		+12		+11	
	RME, Biodiesel, 40°C/168 h	Volume change %	+4		+3		+3		+3	
	FUEL F, Diesel	Volume change %	+3		+3		+2		+4	
	MIL-T-83133E, JP-8, 23°C/168 h	Volume change %	+7		+5		+6		+6	

(This is not the specification value.)

Mix Liquid A:Liquid B = 1:1

Test piece :The test piece is prepared at 120°C x 10 minutes curing and 200°C x 4 hours post curing.

Measurement: Hardness is measured in compliance with ASTM D2240.

Tensile strength, elongation and modulus are in compliance with DIN 53504.

Tear strength is in compliance with ASTM D6248B.

Compression permanent set is in compliance with ASTM D395.

Chemical resistance is in compliance with ASTM D471.

*1 Viscosity: Shearing speed 10 s⁻¹

*2 Injection molded rubber sheet is given post curing (200°C x 4 hours)

Curing agent/primer

		Curing agent						
		Product name	Main ingredient	Content	Appearance	Application	Food Use laws and regulations*	
							US: FDA	EU: BfR
Peroxide cure	SILASTIC™ RC-3 40P FD	Dicumyl peroxide	40%	White paste	For general molding and carbon filler (conductive rubber)	○	○	
	SILASTIC™ RC-4 50P FD	2,5-Dimethyl -2,5-bis (t-Butyl peroxy) Hexane	50%	White paste	For thick molding, stock not requiring post curing, and carbon filler	○	○	
	SILASTIC™ RC-8	2,5-Dimethyl -2,5-bis (t-Butyl peroxy) Hexane	22%	White paste	For yellowing prevention and rapid curing	○		
	SILASTIC™ RC-14 A	Bis (4-Methylbenzoyl) Peroxide	50%	White - light straw paste	For hot air vulcanization, and sponge	○		
Pt cure	SILASTIC™ RD-27	Platinum catalyst		Gray-white translucent	For rapid cure, and low temperature cure	○		
	SILASTIC™ MR-91	Platinum catalyst		Off-white		○		
	SILASTIC™ RD-7	Cross-linking agent , SiH polymer		Gray-white translucent		○	○	
	SILASTIC™ RD-9	Inhibitor		Gray-white translucent		○	○	
	SILASTIC™ RD-201	Inhibitor		Gray-white translucent		×		

(This is not the specification value.)

* Please refer to the notes described later regarding the food use laws and regulations.

* The hardening agents used differ depending on the application and use condition.

Primer					
Product name	Appearance	Non-volatile*(%)	Solvent	Drying condition	Substance
SILASTIC™ DY 39-067 Primer	Colorless transparent	2%	n-Heptane	Room temperature 1~2 hours	Metal, Plastic
SILASTIC™ DY 39-123 Primer	Colorless - light yellow transparent	12%	n-Heptane	Room temperature 30 minutes or longer	Metal
SILASTIC™ Primer-X SILASTIC™ Primer-Y**	Colorless - light yellow transparent	9%	n-Heptane	Room temperature 30 minutes or longer	Metal, Plastic

(This is not the specification value.)

* Non-volatile component: After drying at 70°C x 1 hour

** Please use SILASTIC™ Primer-X and SILASTIC™ Primer-Y at a 1:1 mixture.

Pigments/ Additives

Pigments								
Product name	Color	Recommended adding amount	Color difference			Main ingredient	Food Use laws and regulations*	
			L*	a*	b*		US: FDA	EU: BfR
XIAMETER™ CP-11 White Rubber Additive	White	1-2%	96.65	-0.66	3.09	Titanium dioxide	○	
SILASTIC™ CP-17 Red Rubber Additive	Red	1-2%	27.86	24.85	12.37	Manganese complex	×	
XIAMETER™ CP-18 Black Rubber Additive	Black	1-2%	21.48	0.45	-0.01	Iron trioxide	○	○
XIAMETER™ CP-35 Black Rubber Additive	Black	1-2%	22.45	0.38	-0.22	Carbon black	×	
XIAMETER™ CP-2 Blue Rubber Additive	Ultramarine	1-2%	24.20	17.21	-39.57	C.I. Pigment blue—29	○	○
XIAMETER™ CP-138 Blue Rubber Additive	Blue	1-2%	23.12	12.09	-28.31	Pigment blue-15	○	
XIAMETER™ CP-21 Brown Rubber Additive	Reddish brown	1-2%	42.10	34.43	30.20	Iron oxide (III)	○	
XIAMETER™ CP-177 Red Rubber Additive	Red	1-2%	45.45	60.72	39.11	Organic pigments	○	
XIAMETER™ CP-124 Red Rubber Additive	Red	1-2%	27.85	31.07	1.62	Organic pigments	×	
XIAMETER™ CP-144 Yellow Rubber Additive	Yellow	1-2%	74.52	19.93	81.99	Organic pigments	○	
XIAMETER™ CP-181 Yellow Rubber Additive	Yellow	1-2%	77.57	1.10	83.03	Organic pigments	×	

* The colors and color differences shown above are the result of the sheet hardened with XIAMETER™ RBB-6650-50 Base / SILASTIC™ RC-4 50 P FD Rubber Additive / pigment = 100 / 0.6 / 2.0 at 170°C x 10 minutes curing, and 200°C x 2 hours post curing.

The actual colors differ depending on the type, hardening agent, and hardening condition of the silicone rubber products. Please directly confirm them.

** Please refer to the notes described later regarding the food use laws and regulations.

Additives					
Product name	Appearance	Recommended adding amount	Application	Food Use laws and regulations*	
				US: FDA	EU: BfR
SILASTIC™ MR-1 Rubber Additive	White	0-0.3%	Improve mold release, cable release from wire	○	
SILASTIC™ MR-3 Rubber Additive	White	0-0.3%	Improve mold release	○	
SILASTIC™ MR-5 Rubber Additive	Translucent gray	0-0.5%	Improve crepe hardening and soften unvulcanized stocks	○	
SILASTIC™ MR-8 Rubber Additive	White	0-2.0%	Increase linear shrinkage	○	
SILASTIC™ MR-14 Rubber Additive	White	0-0.3%	Improve mold release and 2-roll release	○	

* Please refer to the notes described later regarding the food use laws and regulations.

Dow Toray Co., Ltd.

Please contact dow.com/ja/contactus regarding the products in this catalog.

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.DOW.COM/JA-JP, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR.

Food-contact use

The products described in the Food use laws and regulations contain FDA or BfR approved ingredients, and are in compliance with FDA 21. CFR 177. 2600 and BfR Recommendation XV, which are the regulations of food additives concerning the repeatedly used food-contact rubber products. However, these rubber products need to be processed by the recommended conditions. If they are processed under different conditions, these products may not comply with these regulations.

Manufacturers need to process them under their own specific conditions, and implement a test to evaluate the extract of its own composition product.

Please refer to "Food Regulatory Profile" for the details regarding the compliance of these products to the food-contact use.

However, please confirm the safety of the final product with your company to determine whether it is usable.

Limitation of medical and pharmaceutical use

This product is developed and manufactured for general industrial use. This product is neither tested nor represented as suitable for medical or pharmaceutical uses. In addition, it is not declared as such.

Images: [dow_41959473505](#), [dow_41972275721](#), [dow_40234871879](#), [dow_54469685157](#), [dow_41990162673](#), [dow_41027762903](#)

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