

Typical Product Properties

Test Properties		Unit	XR-e	XR-j	XR-m	Test Method	
Physical Properties	Construction	(See P.16)	1) 3)	1) 3)	1) 3)	-	
	Thickness*	mm	0.3 to 2.0	0.3 to 2.0	0.3 to 2.0	ASTM D 734	
	Specific Gravity	-	3.4	3.2	3.2	ASTM D 792	
	Hardness	Shore 00		72	80	72	ASTM D 2240
		ASKER C		42	57	46	ISO 7619
	Color	-	Light Gray	Light Gray	Light Gray	Visual	
Elongation	%	20	25	40	ASTM D 412		
Electrical Properties	Volume Resistivity	Ohm-m	1x10 ¹¹	1x10 ¹¹	1x10 ¹¹	ASTM D 257	
	Breakdown Voltage	kV/mm	18	18	10	ASTM D 149	
	Dielectric Strength	kV/mm	14	13	7	ASTM D 149	
	Dielectric Constant	50Hz	-	6.8	4.8	ASTM D 150	
		1kHz	7.5	6.8	4.7		
		1MHz	7.2	6.8	4.8		
Dissipation Factor	50Hz	-	0.006	0.058	ASTM D 150		
	1kHz	0.018	0.001	0.003			
	1MHz	0.008	0.001	0.001			
Thermal Properties	Thermal Conductivity unit : W/m-K	Guarded Heater	11	14	17	ISO/CD 22007-2	
		Hot Disk	6	9	11	ASTM D 5470	
	Recommended Operating Temp.	°C	-40 to +150	-40 to +150	-40 to +150	-	
		°F	-40 to +302	-40 to +302	-40 to +302	-	
Flame Retardant	-	V-0	V-0	V-0	UL94		

a) Hardness: The highest measured value of Shore 00 and ASKER C.
 b) Thermal Conductivity: Measured by Guarded Heater method for reference. → See P.32
 : Measured by Hot Disk Test method according to ISO/CD 22007-2. → See P.31

* Some details of thickness. → See P.28

Thermal Resistance

unit : K-cm²/W (K-in²/W)

Pressure	XR-e				XR-j				XR-m			
	30X-He	50X-He	100X-e	200X-e	30X-Hj	50X-Hj	100X-j	200X-j	30X-m	50X-m	100X-m	200X-m
100kPa (14.5psi)	0.81 (0.13)	1.12 (0.17)	1.56 (0.24)	3.09 (0.48)	0.64 (0.10)	0.76 (0.12)	1.09 (0.17)	2.00 (0.31)	0.44 (0.07)	0.49 (0.08)	0.92 (0.14)	1.73 (0.27)
300kPa (43.5psi)	0.71 (0.11)	0.92 (0.14)	1.43 (0.22)	2.71 (0.42)	0.59 (0.09)	0.65 (0.10)	1.01 (0.16)	1.67 (0.26)	0.30 (0.05)	0.40 (0.06)	0.81 (0.13)	1.50 (0.23)
500kPa (72.5psi)	0.60 (0.09)	0.85 (0.13)	1.33 (0.21)	2.35 (0.36)	0.55 (0.09)	0.61 (0.09)	0.95 (0.15)	1.30 (0.20)	0.23 (0.04)	0.37 (0.06)	0.75 (0.12)	1.35 (0.21)

c) Test method: Fujipoly Test method, FTM-P3050 by TIM 1300 Tester which is ASTM D 5470 equivalent. → See P.32

Compression Force

unit : : N/6.4cm²(psi)

Compression Ratio	GR-ae				GR-d				GR-Sd	
	50G-ae	100G-ae	200G-ae	300G-ae	50G-d	100G-d	200G-d	300G-d	200G-Sd	300G-Sd
10%	47 (10.65)	41 (9.29)	31 (7.02)	27 (6.12)	142 (32.17)	121 (27.41)	100 (22.66)	60 (13.59)	47 (10.65)	29 (6.57)
	205 (46.45)	148 (33.53)	84 (19.03)	57 (12.91)	250 (56.64)	198 (44.86)	155 (35.12)	124 (28.09)	89 (20.16)	49 (11.10)
30%	363 (82.24)	263 (59.59)	158 (35.80)	94 (21.30)	394 (89.27)	308 (69.78)	249 (56.41)	202 (45.77)	132 (29.91)	77 (17.45)
	516 (116.91)	386 (87.45)	243 (55.05)	158 (35.80)	558 (126.42)	441 (99.91)	385 (87.23)	309 (70.01)	196 (44.41)	120 (27.19)
50%	656 (148.63)	513 (116.23)	353 (79.98)	231 (52.34)	720 (163.13)	626 (141.83)	579 (131.18)	463 (104.90)	297 (67.29)	193 (43.73)
	306 (69.33)	249 (56.41)	185 (41.91)	124 (28.09)	360 (81.56)	340 (77.03)	306 (69.33)	252 (57.09)	142 (32.17)	73 (16.54)

Compression Ratio	GR-25A					GR-45A			
	0H2-30GY	00-50GY	00-100GY	00-200GY	00-300GY	00-50GY	00-100GY	00-200GY	00-300GY
10%	65 (14.73)	108 (24.47)	92 (20.84)	77 (17.45)	70 (15.86)	70 (15.86)	72 (16.99)	52 (11.78)	36 (8.16)
	173 (39.20)	252 (57.09)	203 (45.99)	156 (35.34)	129 (29.23)	243 (55.05)	291 (65.93)	160 (36.25)	116 (26.28)
30%	304 (68.88)	413 (93.57)	342 (77.48)	263 (59.59)	209 (47.35)	470 (106.48)	551 (124.84)	300 (67.97)	216 (48.94)
	457 (103.54)	583 (132.09)	505 (114.41)	408 (92.44)	324 (73.41)	703 (159.27)	859 (194.62)	441 (99.91)	308 (69.78)
50%	629 (142.51)	740 (167.66)	675 (152.93)	569 (128.91)	463 (104.90)	913 (206.85)	1135 (257.15)	582 (131.86)	410 (92.89)
	568 (128.69)	351 (79.52)	337 (76.35)	285 (64.57)	282 (63.89)	649 (147.04)	667 (151.12)	219 (49.62)	152 (34.44)

Compression Ratio	XR-e				XR-j				XR-m			
	30X-He	50X-He	100X-e	200X-e	30X-Hj	50X-Hj	100X-j	200X-j	30X-m	50X-m	100X-m	200X-m
10%	25 (5.66)	93 (21.07)	88 (19.94)	77 (17.45)	49 (11.10)	60 (13.59)	89 (20.16)	105 (23.79)	33 (7.48)	94 (21.30)	98 (22.20)	112 (25.38)
	94 (21.30)	303 (68.65)	263 (59.59)	200 (45.31)	124 (28.09)	157 (35.57)	206 (46.67)	280 (63.44)	130 (29.45)	308 (69.78)	329 (74.54)	445 (100.82)
30%	239 (54.15)	574 (130.05)	502 (113.73)	431 (97.65)	243 (55.05)	297 (67.29)	453 (102.63)	549 (124.38)	255 (57.77)	572 (129.59)	653 (147.95)	1032 (233.81)
	402 (91.08)	876 (198.47)	794 (179.89)	666 (150.89)	394 (89.27)	533 (120.76)	714 (161.77)	923 (209.12)	404 (91.53)	836 (189.41)	1051 (238.12)	1621 (367.26)
50%	613 (138.88)	1290 (292.27)	1114 (252.39)	935 (211.84)	571 (129.37)	827 (187.37)	1095 (248.09)	1346 (304.95)	579 (131.18)	1099 (248.99)	1471 (333.27)	2200 (498.44)
	540 (122.34)	965 (218.63)	624 (141.38)	570 (129.14)	477 (108.07)	626 (141.83)	897 (203.23)	1011 (229.05)	506 (114.64)	875 (198.24)	882 (199.83)	1523 (345.05)

d) Sustain: Sustain 50% at 1 minute later.
 e) Measured by ASTM D575-91(2012) for reference. → See P.34