

General Properties of ACRYPET™

Property	Method	Condition	Unit	Standard Grade					Impact Resistant Grade											
				VH 001	MD 001	MF 001	V 001	VH5 000	IR H70 001	IR H50 001	IR H30 001	IR D70 001	IR D50 001	IR D30 001	IR G504 001	IR G304 001	IRK304 001	IR S404 001	VR L40 001	VR S40 001
Specific gravity	ISO 1183		g/cm <sup>3</sup>	1.19	1.19	1.19	1.19	1.19	1.14	1.16	1.17	1.14	1.16	1.17	1.16	1.17	1.17	1.16	1.16	1.16
Total light transmittance	ISO 13468	3mm	%	93	93	93	93	93	92	92	92	92	92	92	92	92	92	92	92	92
Haze	ISO 14782	3mm	%	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.4	0.6	0.6	0.4	0.7	0.5	0.5	0.5	0.5	0.5
Refractive index	ASTM D542	nd	-	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Water absorption	ISO 62	24hr	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Specific heat	JIS K7123		J/(g·°C)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Coefficient of linear thermal expansion	ASTM D696		1 / °C	6 × 10 <sup>-5</sup>	6 × 10 <sup>-5</sup>	6 × 10 <sup>-5</sup>	6 × 10 <sup>-5</sup>	6 × 10 <sup>-5</sup>	12 × 10 <sup>-5</sup>	10 × 10 <sup>-5</sup>	8 × 10 <sup>-5</sup>	12 × 10 <sup>-5</sup>	10 × 10 <sup>-5</sup>	8 × 10 <sup>-5</sup>	10 × 10 <sup>-5</sup>	8 × 10 <sup>-5</sup>	8 × 10 <sup>-5</sup>	9 × 10 <sup>-5</sup>	9 × 10 <sup>-5</sup>	9 × 10 <sup>-5</sup>
Thermal conductivity	ASTM C177		W/(m·°C)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Heat distortion temperature	ISO 75	1.8MPa	°C	100	87	84	93	100	86	92	93	81	84	85	92	94	93	85	94	81
Vicat Softening temperature	ISO 306	B50	°C	107	94	89	100	107	81	93	99	78	85	89	93	101	98	88	99	87
Melt flow rate	ISO 1133	230 ,37.3N	g/10min	2.0	6.0	14.0	2.3	5.5	0.6	1.1	1.5	1.3	2.4	3.7	0.9	1.3	3.0	7.8	2.3	7.7
Spiral flow (2mm thickness)	MRC Method	230	mm	130	190	250	150	180	170	170	170	200	230	230	120	120	150	230	130	190
		250	mm	220	290	370	230	290	260	260	260	290	310	320	200	210	270	330	220	300
Tensile strength	ISO 527	1A/5	MPa	77	71	66	75	61	39	52	67	37	49	63	51	65	65	52	52	47
Elongation	ISO 527	1A/5	%	6	6	4	7	3	65	15	12	50	24	21	24	20	19	40	30	15
Modulus of Elasticity	ISO 527	1A/1	GPa	3.3	3.3	3.3	3.3	3.3	1.4	1.9	2.3	1.4	1.8	2.2	1.7	2.3	2.3	1.8	2.0	1.9
Flexural strength	ISO 178		MPa	140	130	120	135	125	57	76	99	52	72	94	74	97	98	76	78	69
Flexural modulus	ISO 178		GPa	3.3	3.3	3.3	3.3	3.3	1.5	1.9	2.5	1.5	1.9	2.5	1.8	2.4	2.4	1.9	2.0	1.9
Izod impact strength	ISO 180	1A	kJ/m <sup>2</sup>	2.1	2.1	2.1	2.1	2.0	9.7	4.3	2.5	9.8	4.1	2.4	5.5	3.6	2.9	3.7	9.2	9.2
Charpy impact strength	ISO 179	1eU unnotched	kJ/m <sup>2</sup>	20	19	18	20	19	111	62	32	110	55	25	73	48	43	49	140	150
		1eA V notched	kJ/m <sup>2</sup>	1.4	1.4	1.3	1.4	1.3	6.9	2.7	1.3	6.6	2.6	1.3	4.6	2.9	2.6	2.8	7.4	8.2
Rockwell hardness	ISO 2039	M scale	-	101	94	92	98	101	38	55	77	33	52	67	66	80	80	70	69	59
Surface resistivity	JIS K6911		Ω·m	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>
Electrical volume resistivity	JIS K6911		Ω·m	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>
Dielectric strength	JIS K6911	4kV/sec	MV/m	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Dielectric constant	JIS K6911	60Hz	-	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Power factor	JIS K6911	60Hz	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Arc resistance	JIS K6911		-	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track	No track
Mold shrinkage	MRC Method		%	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.2-0.6	0.4-0.8	0.4-0.8	0.3-0.7	0.4-0.8	0.4-0.8	0.3-0.7	0.4-0.8	0.3-0.7	0.3-0.7	0.3-0.7	0.3-0.7	0.3-0.7

Note 1: Measurement is made as per JIS K6911, where voltage is raised at a rate of 4 kv/second, and the dielectric breakdown strength is obtained by dividing the breakdown voltage by the thickness.

Note 2: Measurement is made as per JIS K6911, where main electrode of outer diameter of 50mm, guard electrode of inner diameter of 70mm, and counter electrode with diameter of 90mm are used.

All technical information and data are typical values , and are not standard value.

These values might change without previous notice.