

Physical Properties of ACRYPET™

Property	Method	Condition	Unit	Standard Grade			LGP Grade			Impact Resistance Grade														
				VH001	MD001	MF001	VH5001	VH6001	TF8001	IRH7001	IRH5001	IRH3001	IRD7001	IRD5001	IRD3001	IRF404001	IRG504001	IRG304001	IRK304001	VRL2001	VRL4001	VRM4001		
Pyhsical properties	Specific gravity	ISO 1183		g/cm ³	1.19	1.19	1.19	1.19	1.19	1.19	1.14	1.16	1.17	1.14	1.16	1.17	1.16	1.16	1.17	1.17	1.17	1.16	1.16	
	Total light transmittance	ISO 13468-1	3mm	%	93	93	93	93	93	93	92	92	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	0.3	0.6	0.6	0.4	0.6	0.6	0.4	0.5	0.7	0.5	0.5	0.5	0.5	0.5	0.5
	Refractive index	ISO 489	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	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	0.3	0.3	0.3
Thermal properties	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	1.5	1.5	
	Coefficient of linear thermal expansion	JIS K7197		1/°C	6*10 ⁻⁵	6*10 ⁻⁵	6*10 ⁻⁵	6*10 ⁻⁵	6*10 ⁻⁵	6*10 ⁻⁵	12*10 ⁻⁵	10*10 ⁻⁵	8*10 ⁻⁵	12*10 ⁻⁵	10*10 ⁻⁵	8*10 ⁻⁵	6*10 ⁻⁵	10*10 ⁻⁵	8*10 ⁻⁵	8*10 ⁻⁵	8*10 ⁻⁵	8*10 ⁻⁵	9*10 ⁻⁵	9*10 ⁻⁵
	Thermal conductivity	JIS A1412		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	0.2	0.2	0.2
	Heat distortion temperature	ISO 75-2	1.8MPa	°C	100	87	84	100	94	94	86	92	93	81	84	85	82	92	94	93	95	94	85	
	Vicat softening temperature	ISO 306	B50	°C	107	94	89	107	101	101	81	93	99	78	85	89	85	93	101	98	104	99	90	
	Melt flow rate	ISO 1133	230°C, 37.3N	g/10min	2.0	6.0	14.0	5.5	1.5	10.0	0.6	1.1	1.5	1.3	2.4	3.7	6	0.9	1.3	3.0	4.4	2.3	2.6	
	Spiral flow (2mm thickness)	MRC method	230°C 250°C	mm	130 220	190 290	250 370	180 290	120 200	220 340	170 260	170 260	170 260	200 290	230 310	230 320	-	120 200	120 210	150 270	-	130 220	-	
Mechanical prperties	Tensile strength	ISO 527-2	1A/5	MPa	77	71	66	61	75	59	39	52	67	37	49	63	52	51	65	65	72	52	49	
	Elongation	ISO 527-2	1A/5	%	6	6	4	3	7	3	65	15	12	50	24	21	40	24	20	19	20	30	14	
	Modulus of elasticiy	ISO 527-2	1A/1	GPa	3.3	3.3	3.3	3.3	3.3	3.3	1.4	1.9	2.3	1.4	1.8	2.2	1.8	1.7	2.3	2.3	-	2.0	2.0	
	Flexural strength	ISO 178		MPa	140	130	120	125	135	120	57	76	99	52	72	94	76	74	97	98	106	78	76	
	Flexural modulus	ISO 178		GPa	3.3	3.3	3.3	3.3	3.3	3.3	1.5	1.9	2.5	1.5	1.9	2.5	1.9	1.8	2.4	2.4	2.6	2.0	2.0	
	Izod impact strength	JIS K7110	1A	kJ/m ²	2.1	2.1	2.1	2.0	2.1	2.0	9.7	4.3	2.5	9.8	4.1	2.4	3.7	5.5	3.6	2.9	-	9.2	9.2	
	Charpy impact strength	JIS K7111	1eU unnotched	kJ/m ²	20	19	18	19	21	19	111	62	32	110	55	25	49	73	48	43	47	140	150	
			1eA V notched	kJ/m ²	1.4	1.4	1.3	1.3	1.5	1.3	6.9	2.7	1.3	6.6	2.6	1.3	2.8	4.6	2.9	2.6	2.3	7.4	9.4	
Rockwell hardness	ISO 2039	M scale	-	101	94 (93)	92 (90)	101 (100)	100	96	38	55	77	33	52	67	68	66	80	80	-	69	-		
Electrical properties	Surface resistivity	JIS K6911		Ω	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶		
	Electrical volume resistivity	JIS K6911		Ωm	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹	>10 ⁹		
	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	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	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	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	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	0.2-0.6	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		

The values shown above are typical values but not guarantee values.