



Grades and Properties of APEL™ Resins

Test items	Method	Unit	General Grade				Optical Grade				
			APL6509T	APL6011T	APL6013T	APL6015T	APL5014DP	APL5014CL	APL5015AL	APL5014GH	
TMA	MCI method	°C	90	115	135	155	147	147	155	150	
Tg	MCI method	°C	80	105	125	145	135	135	145	138	
Density	ASTM D792	—	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	
MFR(260 , 2.16Kg)	ASTM D1238	g/10min	30	26	15	10	36	36	36	36	
HDT (1.82MPa)	ASTM D648	°C	70	95	115	135	125	125	135	128	
Tensile strength at yield	ASTM D638	MPa	60	60	60	60	60	60	50	60	
Tensile strength at break	ASTM D638	%	60	3	3	3	3	3	2	3	
Flexural modulus	ASTM D790	MPa	2500	2700	3000	3200	3200	3200	3300	3200	
Flexural strength	ASTMD 790	MPa	100	110	110	110	100	100	100	100	
IZOD impact strength	notched	ASTM D256	J/m	35	25	25	25	25	25	12	25
	without notched	ASTM D256	kJ/m2	20	15	15	10	10	10	10	10
Transmittance	ASTM D1003	%	91	90	90	90	90	90	90	90	
Haze	ASTM D1003	%	2	3	3	4	2	0.5	0.5	0.5	
Refractive index	ASTM D542	nD	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	
Molding shrinkage (MD/TD)	MCI method	%	0.6/0.5	0.6/0.5	0.6/0.5	0.6/0.5	0.6/0.5	0.6/0.5	0.6/0.5	0.6/0.5	
CTE (x 10 ⁻⁵) (MD/TD)	ASTM D696	—	7.0/6.0	7.0/6.0	7.0/6.0	7.0/6.0	7.0/6.0	7.0/6.0	7.0/6.0	7.0/6.0	
Moisture Permiability	ASTM D570	%	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	
Application	—	—	Film, Sheet	Industrial parts	Industrial parts	Medical package	pickup lens	Image Camera Lens	Automotive Camera Lens	VR/AR/MR Parts	

*Figures shown here are representative values but not specified values.

*We are developing new grades besides the list. Please contact us for those details.

MITSUI CHEMICALS AMERICA, INC.