Low Refractive Index Resins

January, 2022 NTT Advanced Technology Corporation

Item		Unit	#18204	#18114	SL1149	SL1146	*NEW!* FE4148	E3810	SL1121	SL1102	SL1145
Main application		-	Bonding							Potting	
Main component		-	Acrylate	Acrylate	Silicone	Silicone	Epoxy	Epoxy	Silicone	Silicone	Silicone
Curing Conditions[*1]	Pre Baking	-	-	-	-	-	-	-	-	-	-
	Intensity [365nm]	mW/cm^2	10	10	100	100	100	10	100	100	100
	Time	min	1	5	3	3	5	10	3	1	3
Inhibition			Oxygen	Oxygen	-	-	Moisture	Moisture	-	Oxygen	Oxygen
Annealing conditions		-	-	-	80 ℃, 1hr (indispensable)	80 ℃, 1hr (indispensable)	80 ℃, 1hr	80 ℃, 1hr	60 ℃, 1hr	60 ℃, 1hr	60 ℃, 1hr
Optical Transmittance	450nm	%, thickness: 1 mm including reflection from and to air on both sides.	89	92	93	88	45	76	61	76	88
	630nm		83	94	93	91	90	89	93	79	91
	1550nm		91	86	89	88	89	88	90	81	88
Refractive Index	633nm	-	1.374	1.400	1.401	1.408	1.419	1.436	1.438	1.426	1.457
	830nm		1.371	1.397	1.397	1.404	1.415	1.432	1.432	1.419	1.451
	1300nm		1.367	1.392	1.393	1.400	1.412	1.428	1.428	1.416	1.446
	1550nm		1.367	1.391	1.392	1.399	1.411	1.427	1.426	1.415	1.445
Viscosity		mPa･s	7	25	4150	32500	<500	100	6000	2200	76
Glass Transition Temperature [Tg]		℃	18	94	-38	-20	95	103	24	-102	135
Elastic Modulus, 25°C		Mpa	13	800	0.23	2.8	588	1000	92	0.07	400
Hardness [Shore D]		-	20	72	56 (ShoreA)	67 (ShoreA)	68	78	62 (ShoreA)	29 (ShoreA)	74
Thermal Expansion Coefficient (CTE)	25 - 100℃	ppm/℃	180	180	-	-	111	110	263	-	200
Shear Adhesion Strength	Initial	kgf/cm^2	27	26	35	30	101	> 65	73	6	7
	121°C, 100% after 10H		30	14	-	-	-	110	59	12	-
Heat weight loss	5%	℃	270	0	-	-	287	275	335	-	-
Storage Temperature		℃	RT	RT	0 - 10 ℃	0 - 10 ℃	RT	RT	RT	0 - 10 ℃	RT

*1: The curing conditions shown are determined by the bonding strength, the refractive index or FT-IR. It doesn't mean fully cured.
【The values in the table are measured values. They are not specifications.】