

**If you are seeking  
PLC and fiber array adhesion  
with high reliability, try these products**

# Adhesives for Optical Waveguides

In order to achieve high reliability, a product must clear the tests conducted by the users themselves. If you have had even just a bit of dissatisfaction in reliability test results, please put NTT-AT's adhesives to the test. We will also offer consulting regarding adhesion related issues.



**Excellence in Durability**

Acrylate-based adhesives which have cleared a large number of reliability tests

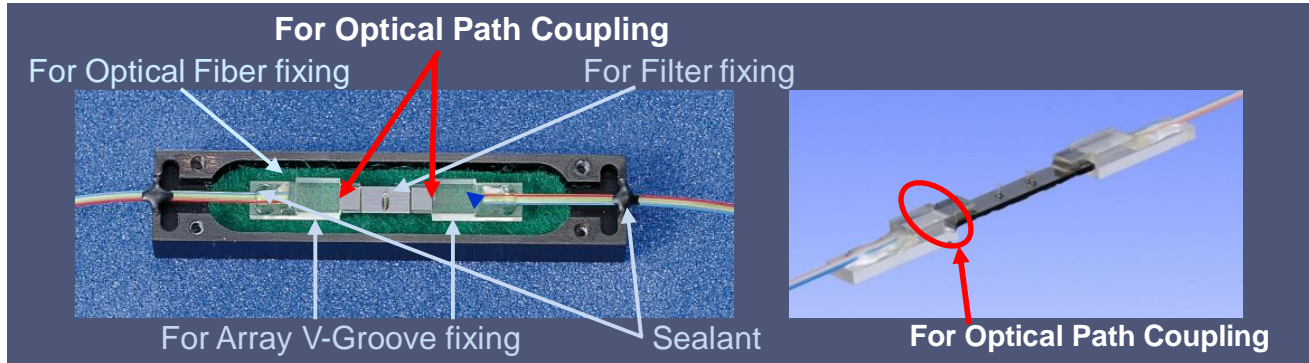
**Adjustable Refractive Index**

Epoxy adhesives with the same refractive index as quartz to deliver low reflectance

**Simple Operability**

The UV curing allows for adhesion in a short time frame

**Structural Images**



## Standard Products Features

Item	Conditions	Units	Epoxy		Acrylate	
			GA700H	GA700L	AT6001	AT8224
Curing Conditions	UV Intensity	mW/cm <sup>2</sup>	30	10	10	10
	time	Min	10	5	5	5
Viscosity	25°C	mPas	280	250	470	145
Refractive Index (after curing)	589nm	-	1.458	1.456	1.505	1.505
	830nm		1.453	1.450	1.495	1.496
	1300nm		1.448	1.446	1.490	1.491
	1550nm		1.447	1.445	1.489	1.489
Optical Transmittance	850nm	% (1mm)	92	94	93	86
	1300nm		91	94	91	89
	1550nm		88	92	86	82
Glass transition temperature ( Tg )	tanδ <sub>max</sub>	°C	145	46	0	115
shrinkage	Density change	%	4	4	7	9
Hardness	Shore D	-	80	44	24	38
Thermal expansion coefficient( CTE )	25 - 100°C	× 10 <sup>-5</sup> °C <sup>-1</sup>	8	21	15	12
Elastic modulus	25°C	dyn/cm <sup>2</sup>	1 × 10 <sup>10</sup>	5 × 10 <sup>9</sup>	2 × 10 <sup>8</sup>	7 × 10 <sup>8</sup>
Bending Adhesion Strength	Initial period	kgf/cm <sup>2</sup>	36	43	22	18
	121°C100% after 10h		15	33	27	21
Water absorption	1mm,after 24h	%	0.5	0.8	3	10
Weight loss on heating	100°C100h	wt%	0	5	3	3
	150°C10h		0	11	3	5

## Adjustable Refractive Index products Features

Item	Conditions	Units	High-Tg Type	Low-Tg Type
Curing Conditions	UV Intensity	mW/cm <sup>2</sup>	30	10
	time	min	10	10
Viscosity	25°C	mPas	250~2000	200~560
Refractive Index	1550nm	-	1.446~1.547	1.445~1.549
Optical Transmittance	1550nm	%	89~90	86~90
Tg	tanδ <sub>max</sub>	°C	140~150	40~50
shrinkage	Density change	%	3~5	4~8
Hardness	Shore D	-	75~80	23~45
CTE	25 - 100°C	× 10 <sup>-5</sup> °C <sup>-1</sup>	6~8	8~22

For more information

<http://www.ntt-at.com/product/adhesive/>



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