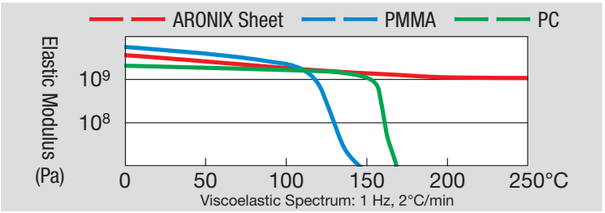
Features of the ARONIX Sheet NIR

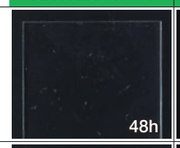
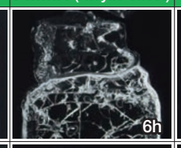
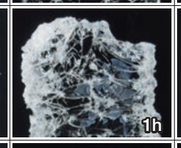
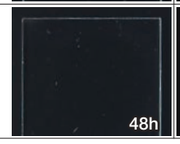
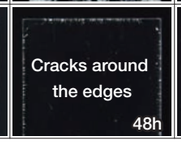
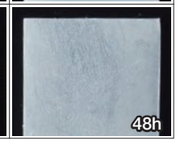
1) Heat Resistance
(maintains a high elastic modulus even above 200°C)

	ARONIX Sheet	PMMA (Acrylic Sheet)	PC (Polycarbonate)
After Heating	200°C×30 min	150°C×5 min	180°C×5 min
		 Deformation	 Deformation



Viscoelastic Spectrum: 1 Hz, 2°C/min

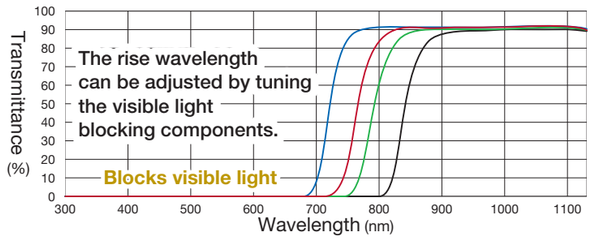
2) Chemical Resistance
(excellent resistance to a wide range of chemicals)

	ARONIX Sheet	PMMA (Acrylic Sheet)	PC (Polycarbonate)
Acetic Acid	 48h	 6h	 6h
Acetone	 48h	 1h	 1h
Brake Fluid	 48h	 Cracks around the edges 48h	 48h

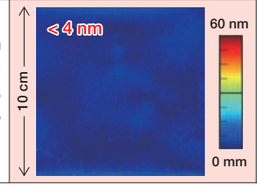
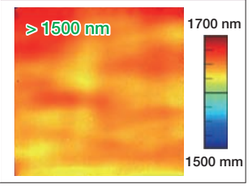
Testing Method: Test pieces were immersed in each chemical.

Optical Performance

1) Excellent Visible Light Blocking and High Near-Infrared Transmittance



2) Low Retardation (retardation under 4 nm)

	ARONIX SHEET	PC (Polycarbonate)
Retardation	 <4 nm, 10 cm, 60 nm, 0 mm	 >1500 nm, 1700 nm, 1500 nm

Measured using the Photron “KAMAKIRI,” at 1 mm thickness

3) Increased Transmittance with Anti-Reflective (AR) Coating

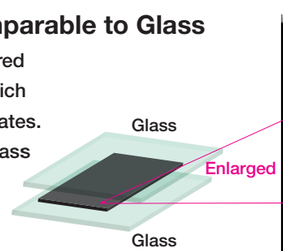
	AR Configuration
ARONIX Sheet NIR	Compatible with direct AR coating
Comparison PMMA (Acrylic Sheet)	Hard coat required as base layer

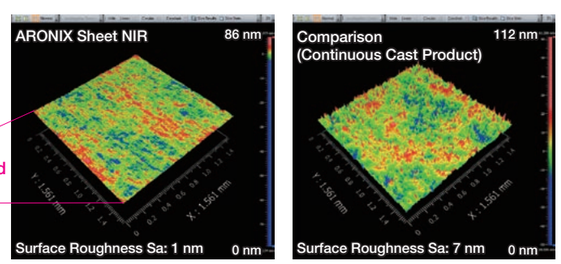

Near-infrared transmittance improved by approximately 2-4% with anti-reflective (AR) coating.
Film can be designed by partner companies.

	905 nm Transmittance		
Angle of incidence	0°	30°	45°
Without AR	91%	90%	89%
	Increased transmittance with AR		
With AR	94%	93%	91%

4) Surface Roughness Comparable to Glass

The ARONIX Sheet NIR is manufactured using the glass casting method in which resin liquid is cured between glass plates. Because the surface replicates the glass surface, it has a surface roughness equivalent to that of glass.





White Light Interference Measurement Results

東亞合成株式会社
1-14-1 Nishi-Shimbashi, Minato-ku, Tokyo 105-8419 Tel: +81-3-3597-7332 Fax: +81-3-3597-7353
URL https://www.toagosei.co.jp

3rd Edition - July 1, 2025

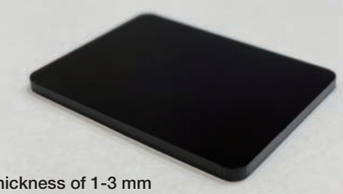
TOAGOSEI

LiDAR Cover and Adhesives

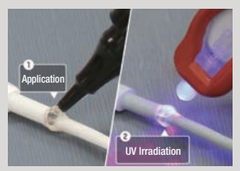
ARONIX® Sheet NIR

ARONIX®, Aron Alpha®, ARON MELT®, Aron Mighty®, ARON TACK®

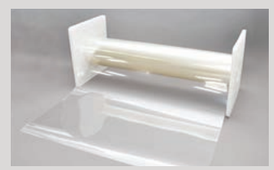
Near-Infrared Transmitting Cover


Thickness of 1-3 mm

Adhesives for Various Components, Housings, and Covers

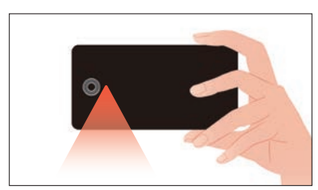


Light-Curable Adhesive


Transparent Adhesive Film

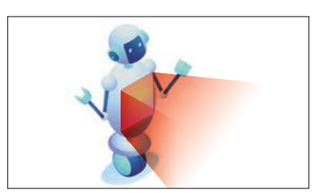
Products with Built-In LiDAR (Intended Applications)

Sensor Covers for Autonomous Driving

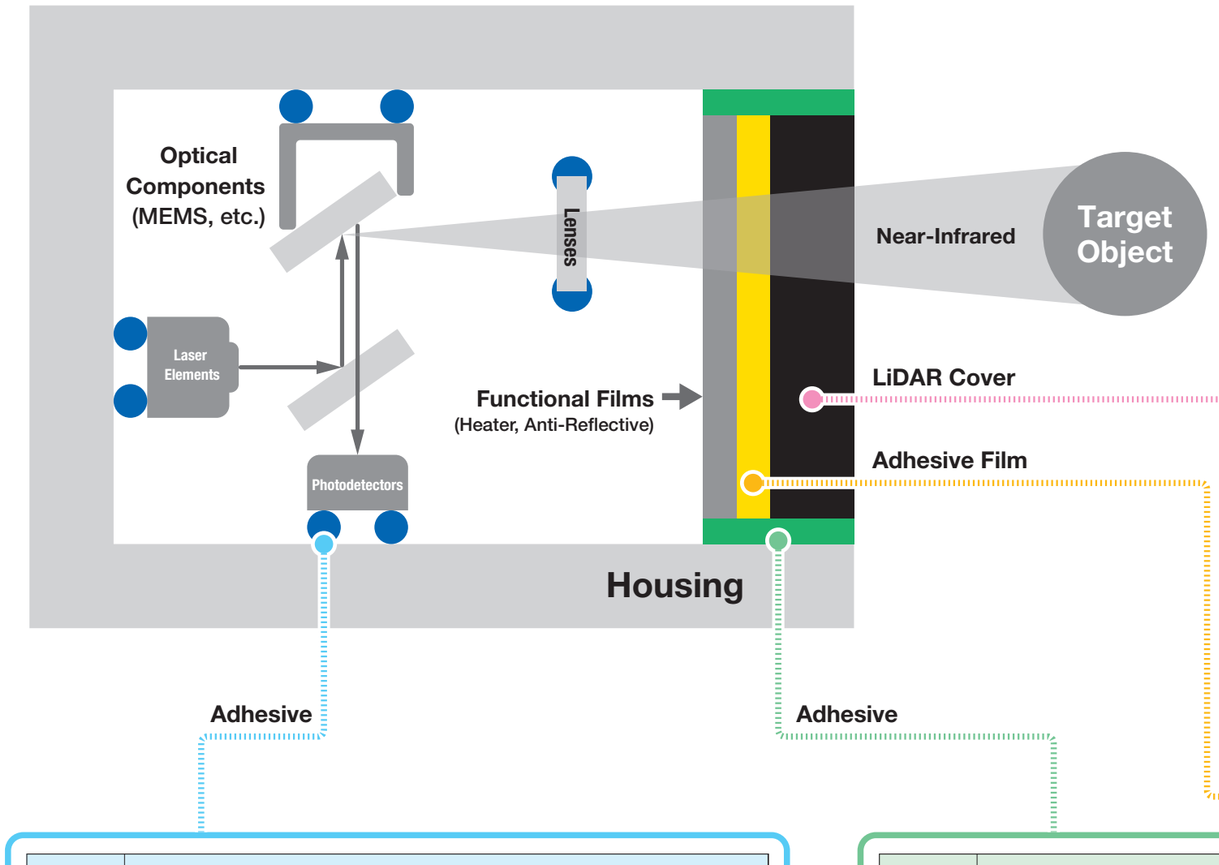

Smartphones


Drones


Industrial Robots

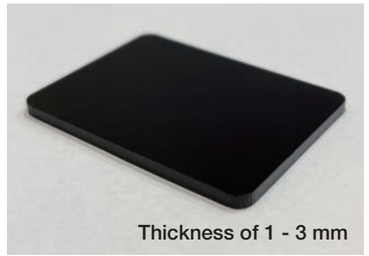

Mapping Robots

LiDAR Overview Diagram and Areas of Application for Our Products



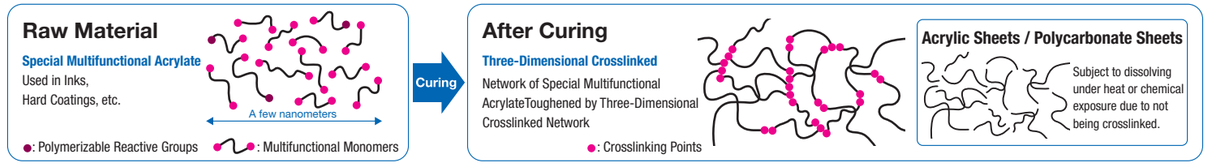
ARONIX Sheet NIR

(1) Optical Performance	Near-Infrared Transmittance Visible Light Blocking Low Retardation	Approximately 90% Transmittance of 950 nm and 1550 nm 100% Blocking of Visible Light Average Retardation: 9 nm (2 mm thickness, 940 nm)
(2) Durability	Heat Resistance Chemical Resistance High Hardness	High elastic modulus even above 200°C Resistant to chemicals, cleaning agents, and oils Resistant to scratches with a pencil hardness of 4H and above
(3) Workability	Machinability Conductive Processability	Compatible with general purpose NC routers and laser cutters Compatible with heater processing using ITO coating and silver wiring

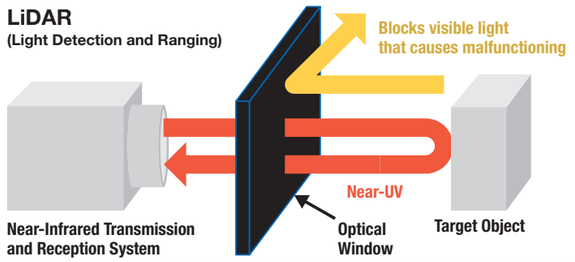


Specific gravity of 1.2 (about half of that of glass)

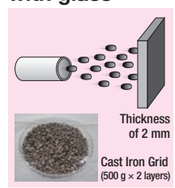
Structure of Glass-Replacement Resin (reason behind superior durability)

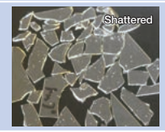


LiDAR
(Light Detection and Ranging)



Comparison with glass



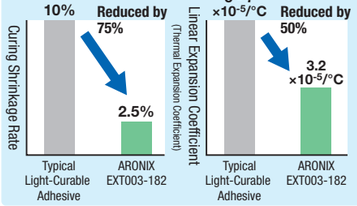
	ARONIX Sheet NIR	Chemically Strengthened Glass [2] (Colorless)
Thickness	2 mm No Cracks	2 mm Shattered Into Pieces (first shot)
Apperrance (after the test)		

Testing Method:ISO 20567-1-2017 method B

Intended Use	Adhesives “Adhesion of Various Components, MEMS / Housings”	
Curing Method	Light Curing	Light curing or moisture curing (in unexposed areas)
Product Name	ARONIX	Aron Alpha
Grade	EXT003-182	LC-032
Composition	Acrylate	Cyanoacrylate
Tg	109°C	140°C
Viscosity	80,000 mPa·s (25°C)	100mPa·s (25°C)
Usage Method	(1) Application (2) Lamination (3) Light Irradiation	(1) Application (2) Lamination (3) Light Irradiation * Areas that cannot be irradiated are pressed until hardened.
Properties	· Small curing shrinkage for minimal misalignment · Low coefficient of linear expansion for minimal thermal shrinkage	· Instant curing upon light irradiation with no whitening at the adhered area · Can bond gaps exceeding 0.5 mm

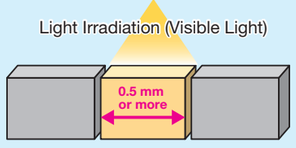
ARONIX EXT003-182

Minimizes misalignment to realize high-precision adhesion



Aron Alpha LC-032

New Technology
Light Curing Aron Alpha

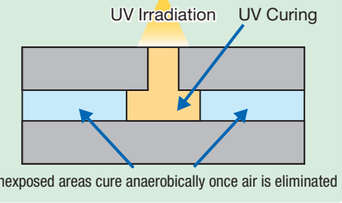


Can bond widths of 0.5 mm or more which was difficult with conventional Aron Alpha

Intended Use	Adhesives “Adhesion of LiDAR Covers / Housings”	
Curing Method	UV Curing or Anaerobic Curing	Moisture Curing
Product Name	ARONTITE	ARON MELT
Grade	ATX-PI-1	R-1100H
Composition	Acrylate	Urethane
Tg	83°C	-37°C
Viscosity	6,000mPa·s (25°C)	2,500mPa·s (120°C)
Usage Method	(1) Application (2) Lamination (3) UV Irradiation * For areas where UV irradiation is not possible, apply a curing accelerator to the other adherent and press upon bonding.	(1) Heated and liquefied at 120°C using a dedicated applicator (2) Application (3) Lamination (4) Pressing (moisture curing over time)
Properties	· Unexposed areas cure when used with a curing accelerator and air is eliminated	· Applicable at low temperatures · Excellent water resistance and durability

ARONTITE ATX-PI-1

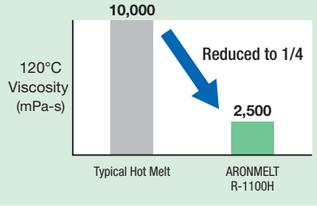
Two-Step Curing: Light and Anaerobic
(for adhesion even in areas where light does not reach)



Unexposed areas cure anaerobically once air is eliminated

ARON MELT R-1100H

Suitable for precision products that cannot be exposed to a temperature of 150°C or above



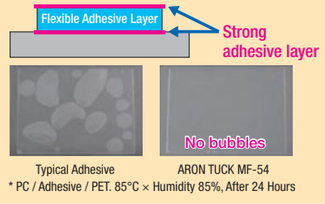
Intended Use	Adhesives “Adhesion of LiDAR Covers / Functional Films”	
Curing Method	Heat Curing	Not Required
Product Name	ARON MIGHTY	ARON TUCK
Grade	AF-60	MF-54
Composition	Epoxy	Acrylic
Tg	40°C	-27°C
Viscosity	20, 25 μm	25, 50 μm
Usage Method	(1) Lamination (2) Heat Curing * 160°C, 3Mpa x 30 - 60 min	(1) Lamination (2) Heat Curing * 50°C, 0.5 MPa x 20 min or, 80°C, 0.5 MPa x 5 min
Properties	· Excellent Heat Resistance · Stress Relief with Flexibility	· High Transparency, High Heat Resistance · Excellent Blister (Bubble) Resistance

ARON MIGHTY AF-60

Highly transparent thermosetting adhesive film

ARON TUCK MF-54

Realizes strong adhesion and flexibility with phase separation technology



* PC / Adhesive / PET. 85°C × Humidity 85%, After 24 Hours