

Components for Vehicle-Mounted Batteries

Adhesives for Fuel Cell Vehicles

■ Hot Melt Adhesive for Separator Bonding

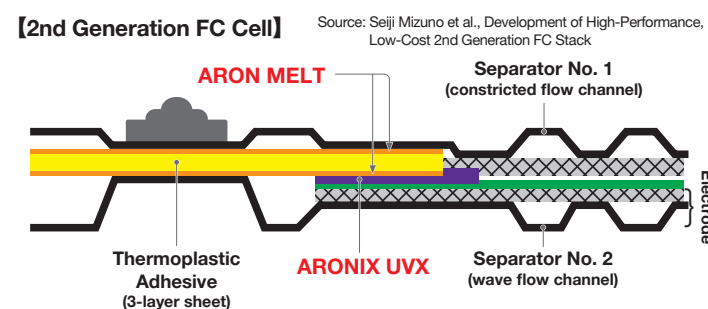
- Special modified polyolefin-type hot melt adhesive
- Excellent bonding durability, chemical resistance, heat resistance, and long-term gas sealing performance
- Enables heat sealing in seconds, achieving high productivity

■ UV Adhesive for Internal Cell Component Lamination

- Acrylate-based UV/LED curable adhesive
- Excellent bonding durability, suppresses catalyst poisoning components
- Enables bonding in seconds, achieving high productivity
- Good screen printability

■ Adopted by Toyota Motor Corporation

- MIRAI(2nd Generation), CROWN Z (FCEV)



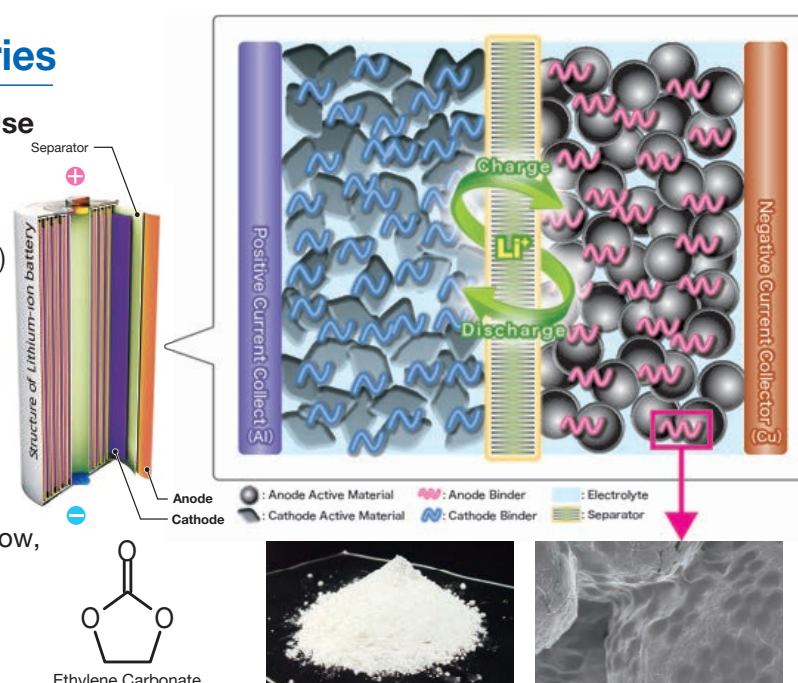
Materials for Lithium-Ion Batteries

■ Ethylene Carbonate for LiB Electrolyte Use

- Highly polar organic solvent. High purity with excellent solubility in organic solvents and polymeric substances
- Available in general purpose grade (99.9%+ purity) and refined grade (99.99%+ purity)
- Only two domestic suppliers

■ Acrylic-Based Binder for LiB Anode Use

- Binds active material to active material, and active material to current collector
- Maintains conductive pathways for electron flow, contributing to long battery life
- Proven use in LiB for electric vehicles



The information in this document is an introduction to the use of our products and is based on data and information available at this point, but does not constitute any guarantee. Please contact our representative for information on the safety of storing, using, or disposing of this product.

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Automotive Products

An introduction to Toagosei Group automotive products with proven applications.

TOAGOSEI TECHNOLOGY



Automotive Products

Glass Peripheral Components

- Adhesive for window moldings
“ARON MIGHTY®”
- Weather-resistant powder coating for wiper blades
“ARON POWDER®”
- Garnish material for quarter window frames
“AROSTOMER TF Series”
- UV adhesive for in-vehicle displays
“ARONIX®”

Engine Peripheral Components

- Motor coil end
insulating powder coating
“ARON POWDER®”
- Waterproof sealant for wire harnesses
“Aron Alpha®”
- Sealant for oil filters
“ARONIX®”
- Ignition plug sealant
“ARON CERAMIC®”
- Starter motor packing
“ESTERAR EA Series”
- Anti-vibration clamp
“AROSTOMER TF Series”

Components for Substrates and Sensing Applications

- Moisture-proof insulating coating
“ARONIX®”
- UV adhesive for camera modules
“ARONIX®”
- LiDAR covers (glass substitute resin)
“ARONIX®”
- Millimeter-wave absorbing sheet
“ARON MIGHTY®”

- Pressure-Sensitive Adhesives & Adhesives
- Coatings & Sealants
- Additives for Fibers and Resins
- Resin Molded Products
- Others

Interior and Exterior Components

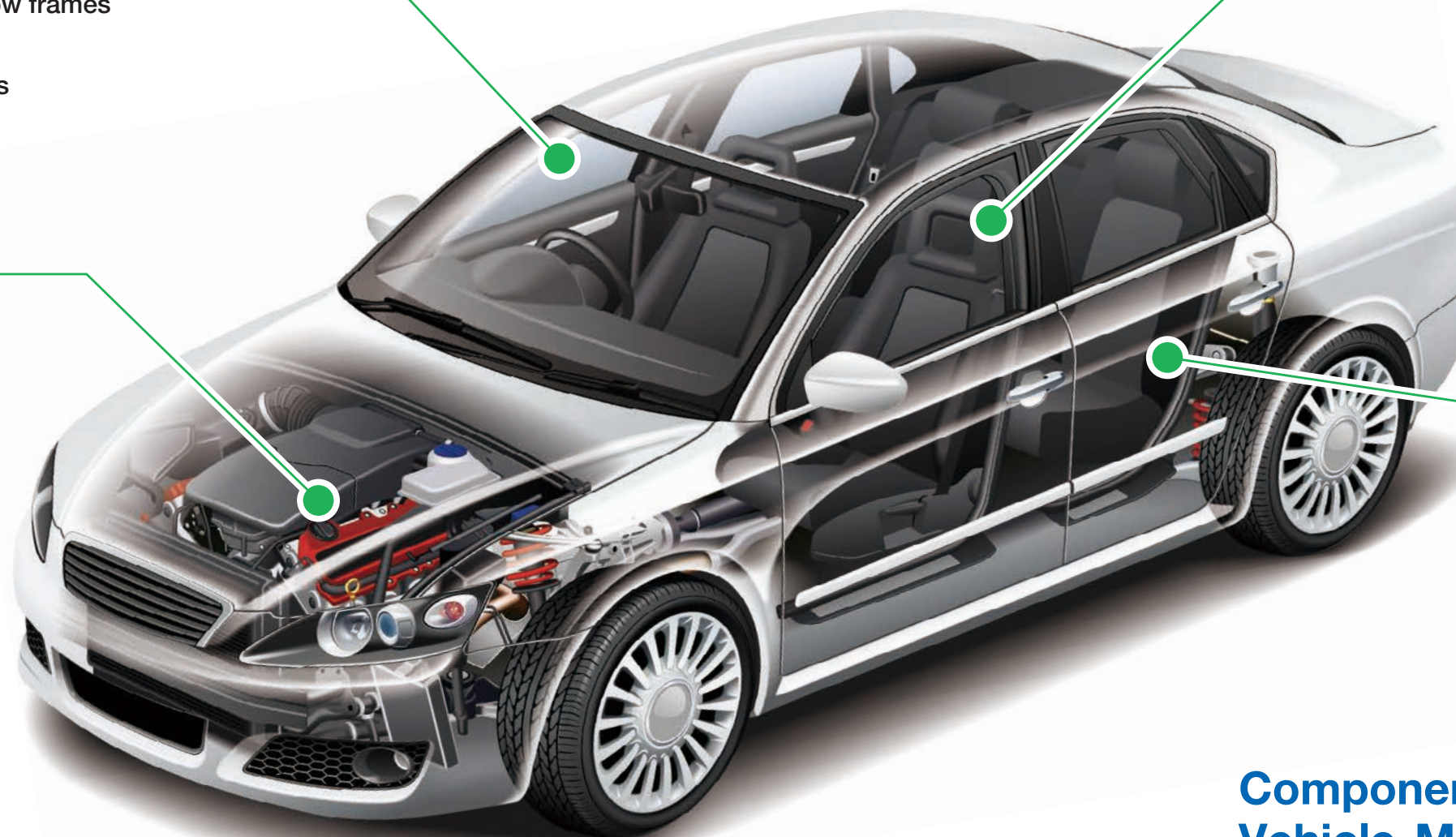
- Adhesives for ceiling, carpet, and board substrates
“ARON MELT®”
- Interior fabric with allergen control
“AlleRemove®”
- Adhesive for decorative interior films
“ARON TUCK®”
- Cabin filter with VOC control
“KESMON®”
- Lamp coating agent
“ARONIX®”
- Antenna packing
“Elastomer AR - AR-1000 Series”

Door Components

- Adhesive for door moldings
“Aron Alpha®”
- Adhesive for weatherstrips
“ARON MELT®”
- Pressure-sensitive adhesive for door trims
“ARON TUCK®”
- Door handle packing
“AROSTOMER TF Series”

Components for Vehicle-Mounted Batteries

- Adhesive for bipolar-type Ni-MH batteries
“ARON MELT®”
- Hot melt adhesive for fuel cell separator bonding
“ARON MELT®”
- UV adhesive for laminating internal fuel cell components
“ARONIX®”
- Lithium-ion anode binder
- Cathode material production chemicals:
Caustic soda, sulfuric acid
- Electrolytes: Ethylene carbonate, caustic potash

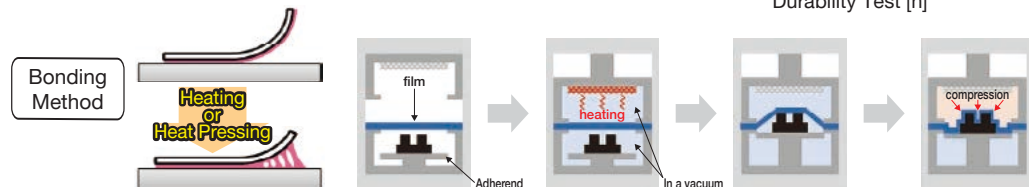
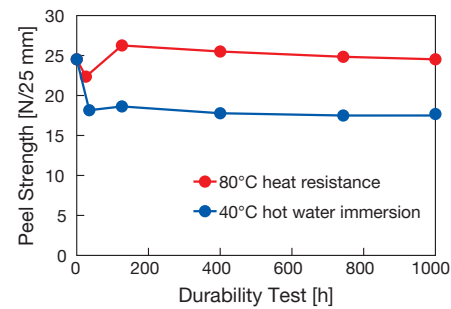


Pressure-Sensitive Adhesives & Adhesives

High-Adhesion, Heat-Resistant Pressure-Sensitive Adhesive

Proven use as decorative film for instrument panels

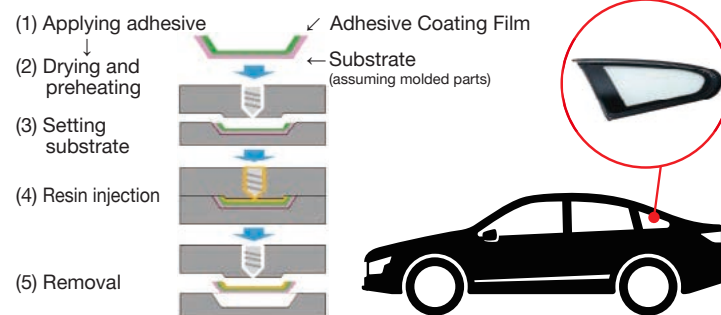
- High adhesion to PP without the need for primer or corona treatment
- Strong adhesion to materials other than PP, including ABS, PC, and PMMA
- Flexible and transparent
- Resistant to prolonged stress and displacement
- Maintains high adhesion and durability even at elevated temperatures



Adhesive for Glass Used in Insert Molding

Proven use in window moldings, emblems, etc.

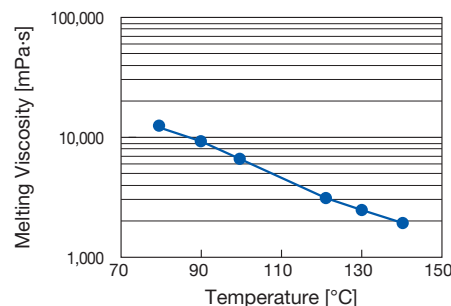
- Capable of adhesion using heat from injection molding
- Good adhesion to metals and various plastics, and especially high adhesion to soft polyvinyl chloride resin
- Available in solution and film types
- Black-colored grade available



Instant Adhesive with High Heat Resistance

Proven use for flocking of window weatherstrips

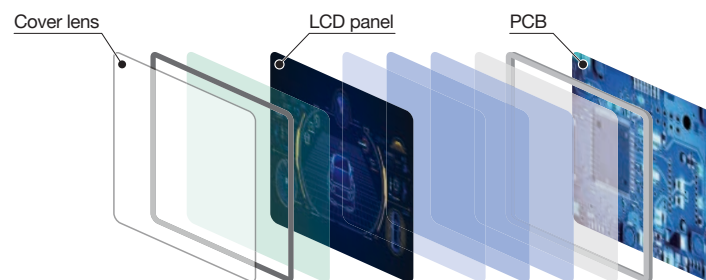
- Suitable for heat-sensitive substrates due to low-temperature application
- Bonds to various materials including wood, ceramics, plastics, and metals
- One-component curing type / solvent-free



UV Adhesive for In-Vehicle Displays

Proven use as film adhesive for in-vehicle displays

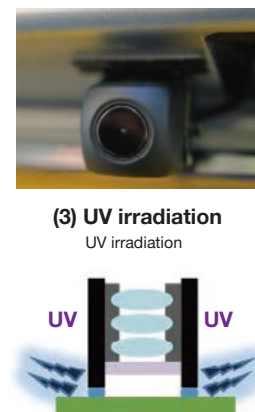
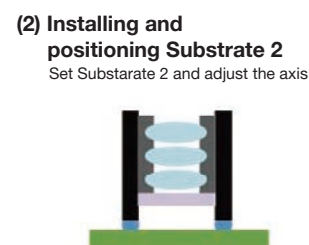
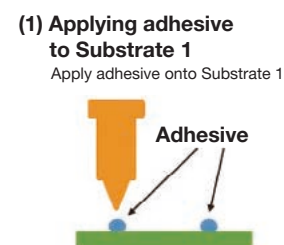
- Solvent-free and low-viscosity acrylic UV adhesive that bonds to PET, PMMA, PC, PI, glass, etc.
- Excellent transparency, ideal for optical materials
- Cures even through UV-absorbing films
- Hydrophobic and low water absorption



UV Adhesive for Camera Modules

UV adhesive for precision fixing with low curing shrinkage and low linear expansion

- Low curing shrinkage rate (2.5%) minimizing positional displacement during curing, making it ideal for precision fixing for camera modules, etc.
- High photosensitivity enables short curing time, contributing to improved productivity
- High glass transition temperature (Tg) and low coefficient of thermal expansion (CTE) minimize displacement of the cured material due to temperature changes

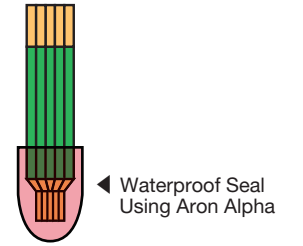


Coatings & Sealants

Waterproof Sealant Utilizing Aron Alpha

Proven use as waterproof sealant for wire harnesses

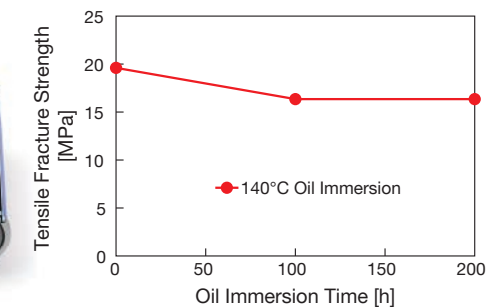
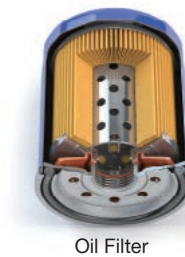
- Penetrates and cures into gaps between copper wires, enabling effective sealing
- Cured material is flexible, providing excellent resistance to impact from bending and breaking
- Meets automotive standards for superior resistance to thermal shock, airtightness, and electrical properties (insulation)
- Excellent heat resistance and cured material remains flexible even at high temperatures



Adhesive, Reinforcement, and Sealant for Areas in Contact with Oil

Proven use as adhesive for oil filters

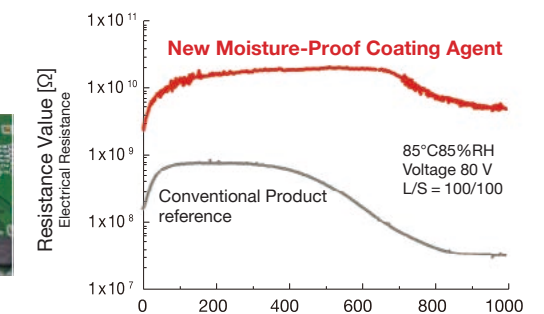
- Solvent-free, resulting in no VOC emissions, low environmental impact, and safety
- Cures by light irradiation and anaerobic reaction, no heat treatment required
- High oil resistance, maintaining hardness even after immersion in 140°C hot oil



Moisture-Proof Insulating Coating

UV coating agent for electrode terminals and electronic circuit board protection

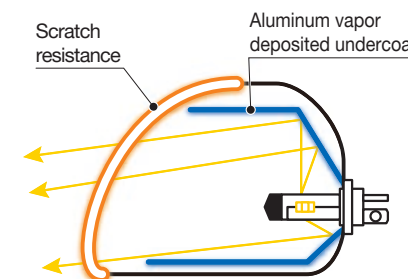
- Single-component and no mixing required, contributing to improved productivity
- Solvent-free and no VOC emissions, allows for easy thick-film formation
- UV curing for energy saving and rapid curing
- High insulation performance under high temperature and humidity due to water resistance and low water absorption (0.4% @ 23°C x 24h)



Scratch-Resistant Coating & Undercoat Agent

Proven use as a lamp coating agent

- Used for headlight scratch protection and as an undercoat for aluminum vapor deposition
- Prevents yellowing and degradation caused by UV and sunlight
- Coating does not affect transparency, maintaining brightness and irradiation performance
- Resistant to car wash detergents and acid rain, maintaining coating durability over a long period



High Weather Resistance & High Corrosion Resistance Powder Coating

Top market share powder coating for wiper blades

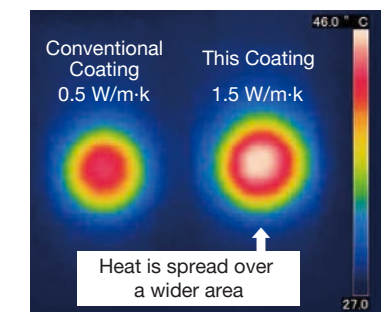
- Matte finish (30% gloss) provides a smooth painted surface
- Weather and corrosion resistance suitable for outdoor use
- Excellent edge coverage protects sharp edges from corrosion
- Can be applied by electrostatic coating method and recovered powder is reusable



High Thermal Conductivity & Insulating Powder Coating

Proven use as insulating coating for motor coil ends and busbars

- High thermal conductivity solves heat management issues → Suppresses overheating
- Reduces power consumption, enables downsizing, and increases output
- Equivalent to heat resistance Class F with flame retardant rating of UL94-V0
- Compatible with flow dipping coating and various spray coatings

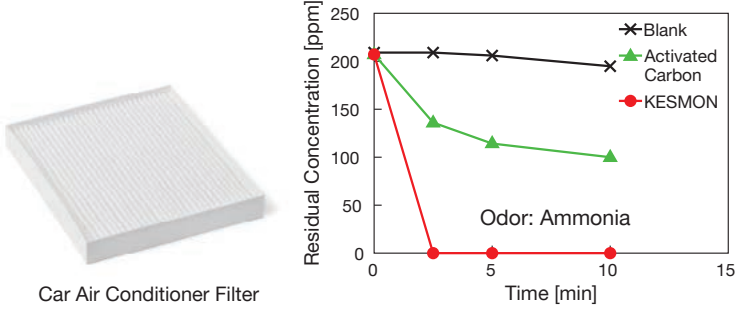


Additives for Fibers and Resins

Deodorant Effective Against Various Household Odors

Proven use in car seats and air conditioner filters

- Deodorant applied to filters via a coating process
- Effective against various odors, including VOCs
- Can be kneaded into plastics
- Excellent immediate effect and heat resistance
- Strong deodorizing ability even in small amounts

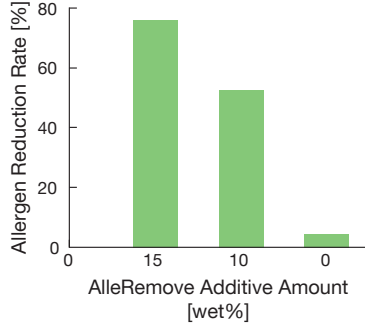
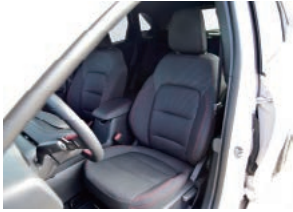


Car Air Conditioner Filter

Anti-allergen Treatment Agent that Reduces Allergens

Proven use in seat covers, headliners, and car mats

- Anti-allergen agent can be applied onto or kneaded into materials
- Applicable to textile products and various interior materials
- Adsorbs and modifies dust mites and pollen to reduce allergens
- High water resistance and discoloration resistance



Modifier for Recycled PET

- Use of ARUFON (low-molecular acrylate polymer) contributes to improving moldability of recycled PET resin
- Also improves moldability of transparent polystyrene-based and PMMA resins without compromising transparency

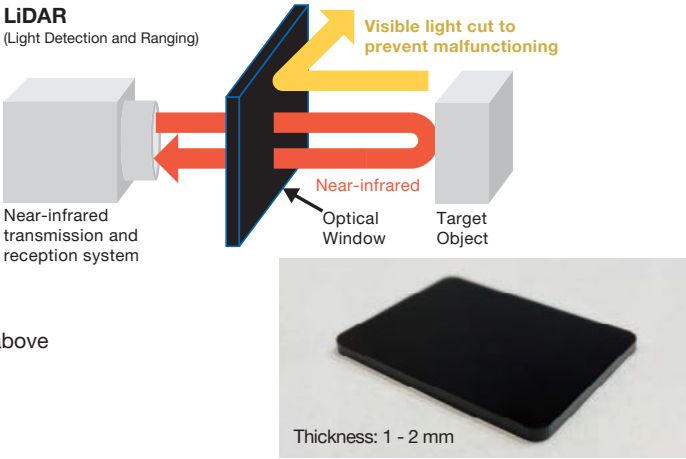


Resin Molded Products

Lightweight Glass-Replacement Resin with Excellent Optical Properties

Proven use as LiDAR covers

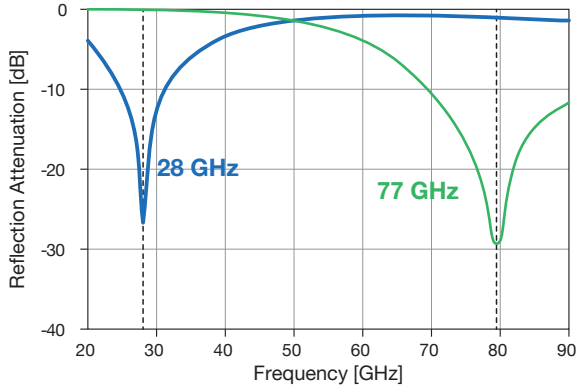
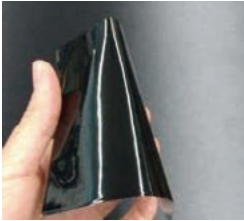
- Excellent optical performance
90% transmission of near-infrared / 100% cut of visible light / Low phase shift
- Durability
 - Heat resistance : High elastic modulus even above 200°C
 - Chemical resistance : Resistant to various chemicals, cleaning agents, and oils
 - High hardness : Scratch-resistant with pencil hardness of 4H or above
- Workability
 - Machinability : Compatible with NC routers and laser cutters
 - Conductive processing : Compatible with heater processing using ITO coating and silver wiring



Millimeter-wave Absorbing Sheets

Noise absorption sheets for millimeter-wave radars

- Capable of absorbing more than -20 dB of electromagnetic noise in the 15 GHz to 90 GHz frequency range
- High flexibility achieved through special resin formulation
- Thin and lightweight due to carbon blend
- Easy application by simply peeling off the liner
- Can be easily cut into desired shapes using scissors
- Flame retardant and heat dissipation properties can also be added

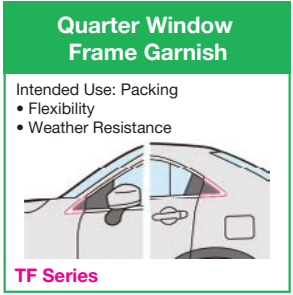


Resin Molded Products

Styrene-based Thermoplastic Elastomer

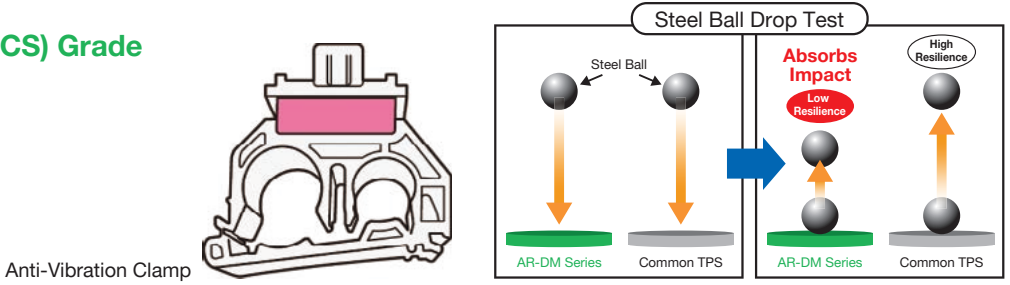
Standard Grade

- Excellent weather resistance and moldability
- Compatible with over-molding and co-extrusion with olefin resins
- Available in natural and black colors
- Proven use as sealing material for quarter window frame garnishes, exterior door handles, and hole plugs, etc.



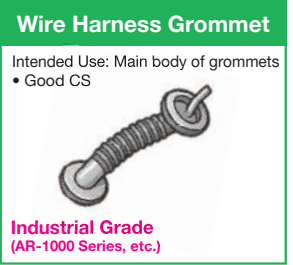
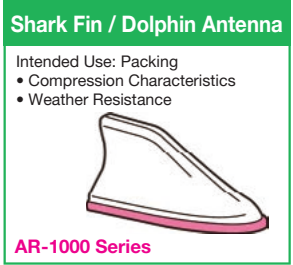
Low Compression Set (Good CS) Grade

- Excellent vibration damping
- Low resilience characteristics
- Proven use as anti-vibration clamps



Low Compression Set (Good CS) Grade

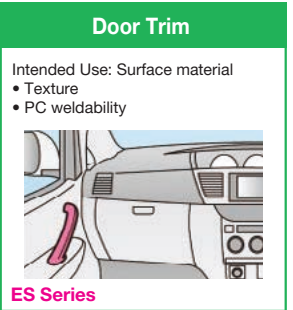
- Excellent compression set characteristics
- High heat resistance and excellent weather resistance
- High chemical resistance against acids, alkalis, etc.
- Suitable as an EPDM substitute
- Proven use as shark fin / dolphin antenna packings and wire harness grommets, etc.



Polyester-based Thermoplastic Elastomer

Soft Grade

- Achieves soft hardness range (A50 - A80)
- Can be integrally molded with PC, ABS, etc.
- Excellent abrasion resistance
- Available in natural and black colors
- Proven use in side visor seal materials, door trims, etc.



Hard Grade

- Achieves rubber elasticity and high strength
- Excellent flexural fatigue resistance, oil resistance, and resilience
- Available in natural and black colors
- Proven use in brake fluid tank caps



Brake Fluid Tank

High Heat Resistance Grade

- Exhibits excellent compression set characteristics even at high temperatures
- Excellent flexibility and oil resistance
- Ideal as a substitute for silicone rubber and acrylic rubber
- Proven use as starter motor packings

