



BETASEAL™ 0°ne All Application Auto Glass Urethane Adhesive



Glass Replacement One-Hour Safe Drive-Away in Temperatures as Low as 0° F (-17.8° C)

BETASEAL™ 0°ne All Application Auto Glass Urethane Adhesive from Dow Automotive Systems can be used for any glass replacement to deliver one-hour safe drive-away time in temperatures as low as 0° F (-17.8° C) for standard and high-modulus, nonconductive (HMNC) applications. BETASEAL 0°ne enables technicians to safely use one adhesive for all auto glass replacements. It is easy to use and does not require heating. BETASEAL 0°ne adhesive is available in cartridges, foil packs and EZ Kits (see form 299-51653).

Benefits

- Fast, one-hour drive away in temperatures as low as 0° F (-17.8° C)
- FMVSS crash proven
- Meets all long-term durability requirements
- Provides torsional stiffness to quiet and stabilize the vehicle's ride
- Preserves radio, cellular phone and global positioning system reception in OEM antenna-encapsulated windshields and backlites

Applications

- Structurally bonded or direct glazed automotive glass, such as windshields, backlites, quarter glass and other stationary glass
- Other uses, such as attaching hardware to glass and backfilling to install reveal moldings or other trim

Customizable Solutions

As a global science and technology leader and full-service supplier, we work closely with our customers to bring technology-driven, cost-effective and usable answers to our customers based on the optimum combination of material, process and system costs. Our Technical Service and Development (TS&D) Centers provide in-the-field technical service with quick response to your immediate needs. Our centers also are dedicated to developing new products and solutions for our customers' application needs within customer timelines.

About Us

Dow Automotive Systems, a business unit of The Dow Chemical Company, provides technology- and materials-enabled solutions for interior, exterior, powertrain, vehicle structural enhancement, acoustic management, emissions control and aftermarket applications in the automotive and commercial transportation industries.

Installation Guidelines

- See vehicle manufacturer's recommendations for additional details. Do not use any other manufacturers' primers, cleaners or other chemicals in conjunction with any BETASEAL™ adhesive system
- Apply at temperatures of 0 °F (-17.8 °C) and warmer

Physical Properties

- Appearance – black, smooth paste
- Solids content – 99 percent
- Flash point – >230 °F (110 °C)
- Weight per volume – 11.06 lbs/gal
- Specific gravity – 1.32
- Sag – none
- Odor – minimal
- Tack-free time – skins in 10 minutes after application at 72 °F (22 °C) and 50-percent relative humidity
- Working time – 8-10 minutes
- Full cure – less than 24 hours at 72 °F (22 °C) and 50-percent relative humidity

Cured Physical Properties

- Shore A hardness – Approximately 70
- Elongation – >250 percent
- Tensile strength – >700 psi
- G-Modulus – >2.0 MPa at 10 percent strain after seven days at 72 °F (22 °C) and 50-percent relative humidity
- Specific electrical volume resistivity – >5 x 10¹⁰ ohm cm

Adhesive System Requirements

BETASEAL 0°ne is an adhesive system. When applied according to the installation instructions, BETASEAL 0°ne adhesive helps restore windshield structures to their original strength. The complete system includes the following products:

- BETACLEAN™ GC-800 Glass Cleaner effectively removes contamination from the windshield. It evaporates quickly to ensure a residue-free bonding surface.
- BETAPRIME™ 5500 1-Step Glass/Frit Primer is an easy-to-use, single-application primer. It primes windshields in one pass and chemically prepares glass and frit to assure optimal chemical link with the adhesive.
- BETAPRIME 5404A Pinchweld and Encapsulation Primer promotes adhesion to the vehicle body. It inhibits rust in small nicks and scratches. It also activates PAAS (Pre-Applied Adhesive System), promotes adhesion to PVC and RIM substrates and prepares PVC trim for bonding.
- BETAPRIME 5201 Bare Metal Etch Primer (if required) primes bare metal areas larger than 1/2" (1.3 cm) square.
- BETACLEAN U-424 Urethane Adhesive Cleaner safely removes excess uncured urethane adhesive. It does not harm most automotive finishes, vinyl roof fabrics or unpainted dashboards.

All Applications

BETASEAL 0°ne adhesive is especially formulated to safely bond all vehicles, including those requiring a HMNC adhesive. Dow Automotive Systems conducted extensive laboratory, crash and long-term testing to ensure a safe bond and lasting performance for all applications. BETASEAL 0°ne adhesive enables technicians to simplify replacements by using one adhesive all the time.

Technical Description

BETASEAL 0°ne adhesive is an advanced cure, one-component adhesive with enhanced chemical crosslinking to speed bonding for safe drive away. Advanced cure RINA technology reduces dependence on moisture. RINA creates uniform and reinforced properties throughout the bead for high initial green strength, resulting in faster, safe drive-away times.





1. Wear appropriate safety equipment

- Protect yourself
- Wear safety equipment, such as work gloves, nitrile chemical-resistant gloves, safety glasses, work apron or other protection required by your company



2. Clean and inspect replacement glass

- Use BETACLEAN™ GC-800 Glass Cleaner and a clean, lint-free paper towel to clean the bonding surface of the glass
- Inspect replacement glass for defects
- Verify all primers and adhesives are within use-by dates



3. Cut out the glass

- Protect the customer's vehicle
- Remove all hardware and reveal moldings
- Cut out the windshield or body glass using your preferred method
- Clean any dirt and debris from around the existing urethane



4. Prepare the glass

- Use BETACLEAN GC-800 Glass Cleaner and a clean, lint-free paper towel to clean the bonding surface of the glass
Note: If bonding to glass close to encapsulation, "wet scrub" the glass bonding surface
- If contamination is present, "wet scrub" the bonding surface with an abrasive pad and BETACLEAN GC-800 then apply a second application of BETACLEAN GC-800 and remove with a lint-free paper towel



4a. Prime the glass

- Shake BETAPRIME™ 5500 1-Step Glass/Frit Primer for at least **one (1) minute** before application
- Open BETAPRIME 5500 bottle carefully and insert a clean, unused dauber; to avoid spilling, never pour liquid on dauber
- If using single application BETAPRIME 5500SA, activate according to the directions
- Apply BETAPRIME 5500 along the bond line
- Replace inner seal and cap on bottle immediately
- Allow a minimum of **six (6) minutes** for the primer to dry
- Apply the reveal molding or original molding to the glass, if necessary

4b. Encapsulation and PAAS preparation

- Clean encapsulation or PAAS bead with BETACLEAN GC-800 Glass Cleaner and a clean, lint-free paper towel
- "Wet scrub" the encapsulation with an abrasive pad, then clean again with BETACLEAN GC-800 cleaner and allow to dry completely
Note: Skip this step if bonding to PAAS
- Shake BETAPRIME 5404A Pinch weld and Encapsulation Primer for at least **one (1) minute** to ensure contents are thoroughly mixed
- Apply BETAPRIME 5404A primer to the encapsulation or PAAS surface with dauber
- Replace inner seal and cap on bottle immediately
- Allow a minimum of **six (6) minutes** for the primer to dry



5. Trim back the urethane

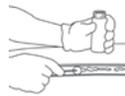
- Trim the urethane, leaving a 1-mm to 2-mm base of original equipment urethane on the pinch weld
- Take care not to damage the vehicle paint or pinch weld



6. Prepare the pinch weld

Note: Exposed bare metal areas over 1/2" x 1/2" (1.3 cm x 1.3 cm) require an etching primer to restore bond strength and durability (see bare metal priming below)

- Shake BETAPRIME™ 5404A primer for at least **one (1) minute** before application
- Inspect the pinch weld for any bare metal or scratches; if found, prime with BETAPRIME 5404A primer
- Open the bottle carefully and insert a clean, unused dauber; to avoid spilling, never pour liquid on dauber
- Apply BETAPRIME 5404A primer to scratches along the bond line; avoid priming existing urethane bead
- Replace inner seal and cap on bottle immediately
- Allow a minimum of **six (6) minutes** for the primer to dry



Bare metal priming:

- Clean metal surface with an abrasive pad, making sure to rough up edges of painted areas
- Wipe area to be primed with a clean, lint-free paper towel dampened with 100% acetone
- Allow **two (2) minutes** to flash
- Shake BETAPRIME 5201 Bare Metal Etch Primer for at least **one (1) minute** before application
- Using a clean, unused dauber, apply an even coat of BETAPRIME 5201 primer
- Replace cap on bottle immediately
- Allow at least **15 minutes** for material to dry; metal and air must be at least 40 °F (4.4 °C) for material to flash
- Apply a coat of BETAPRIME 5404A primer on top of the primed area, making sure to completely cover BETAPRIME 5201 primer
- Replace inner seal and cap on bottle immediately
- Allow a minimum of **six (6) minutes** for the primer to dry

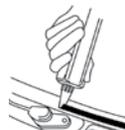


7. Apply BETASEAL™ adhesive

(Choose either glass or pinch weld application)

Glass application:

- Hold the applicator in a vertical position (90°) and dispense the adhesive with a continuous motion in a uniform "V" shaped bead
- Apply adhesive to the glass on top of the bond line Pinch weld application:
- Hold the applicator in a vertical position (90°) and dispense the adhesive with a continuous motion in a uniform "V" shaped bead
- Apply adhesive to the pinch weld perimeter directly on top of the freshly cut original equipment urethane film



Either application:

- Make sure bead is uniform and has no gaps; add material or tool joints, if necessary



8. Install the glass

- Apply BETAPRIME 5404A primer to any molding or encapsulation bonding surface that contacts new urethane to promote adhesion
- Place the glass in the body opening
- Adjust glass to precise alignment
- Lightly press it into position



9. Clean up

- Clean any excess uncured urethane with BETACLEAN™ U-424 Urethane Adhesive Cleaner
- Clean the newly installed glass with BETACLEAN GC-800 Glass Cleaner



10. Recordkeeping

- Attach master lot code sticker to paperwork or manually record primer and adhesive lot numbers
- Record D.O.T. number from glass part on sticker
- Release vehicle to customer after the appropriate drive-away time elapses

Safe Drive-Away Time:

FMVSS 212 with Passenger-side Air Bag

Temperature	Time
0 °F (-17.8 °C) and above	1 hour

Note: If vehicle manufacturers have not published specific make and model drive-away times, use this chart as a guideline.

Product Number	Package Size	Type	Units/ Carton	Cartons/ Case	Approx Weight/ Case
0 ^{ne}	10.5 oz (310 ml)	Cartridge	10	5	51 lb (23 kg)
0 ^{ne} BP	20.3 oz (600 ml)	Foil Pack	9	N/A	15 lb (6.8 kg)
5500	1.4 oz (40 ml)	Bottle	10	5	10 lb (4.5 kg)
5500SA	.3 oz (10 ml)	Applicator	12	39	20 lb (9.1 kg)
5201	.5 oz (15 ml)	Bottle	5	6	3 lb (1.4 kg)
5404A	3.4 oz (100 ml)	Bottle	5	5	10 lb (4.5 kg)
GC-800	18 oz (510 g)	Aerosol	12	N/A	18 lb (8.1 kg)
U-424	32 oz (946 ml)	Bottle	10	N/A	21 lb (9.5 kg)

How Do Advanced Cure Adhesives Work?

They use Dow Automotive Systems' Reinforced Isotropic Network Adhesive (RINA) technology to provide significantly higher amounts of chemical crosslinking. They enable a faster drive-away than conventional adhesives.

Strong Bond

RINA creates uniform chemical, physical and performance properties throughout the adhesive bead. Its reinforced structure absorbs and dissipates crash stresses more effectively than conventional adhesives.

Superior Crosslinking

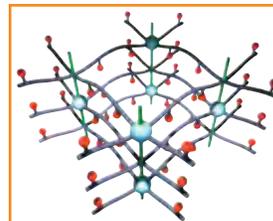
RINA gives more strength and support than conventional adhesives because the internal structure of the bead is bolstered by significantly higher amounts of crosslinking. It speeds bonding to primed glass and prepared substrates.

System Compatibility

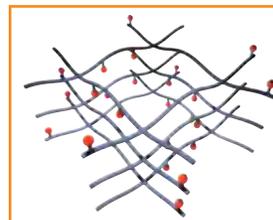
Use no other manufacturers' primers, cleaners or other chemicals in conjunction with any BETASEAL™ adhesive system

Dow Automotive Systems' Commitments

- The products, when shipped, meet the then current sales specifications
- Dow Automotive Systems will notify customer if the sales specifications are changed
- Dow Automotive Systems will supply customer with current MSDS
- Dow Automotive Systems conveys the product with good title, free from any lawful lien or encumbrance



La reticulación superior y la fortaleza de RINA refuerzan la resistencia y la adhesión acelerada.



Los adhesivos convencionales tienen un grado de reticulación significativamente menor

Vehicle Clean Up

- If required, use BETACLEAN™ U-424 Urethane Adhesive Cleaner, following all directions and precautions
- Test BETACLEAN U-424 cleaner on an inconspicuous area prior to using
- BETACLEAN U-424 cleaner is not recommended for newly painted, hard plastic or bonding surfaces
- Dispose of empty containers properly

Safety Precautions

- Keep away from heat, sparks or open flame
- Use only with adequate ventilation
- Avoid breathing vapors
- If swallowed, call physician immediately
- For eye contact, flush with water for 15 minutes and get medical attention
- Wear appropriate safety equipment, such as gloves and eye protection, or as specified by your company
- Avoid skin contact; flush with water, if necessary
- Refer to Material Safety Data Sheet (MSDS) for additional information

Shelf Life

- Maximum shelf life, as stated on product packaging, is achieved when the product is stored at an ambient temperature that does not continuously exceed 110 °F (43.3 °C).
- All materials manufactured by or for Dow Automotive Systems have a shelf life. Urethane adhesives and primers are marked with expiration dates. Unopened product is considered within shelf life up to and including the date marked on the product. Product is considered expired past the date marked and should not be used.

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