



GLASS BONDING SYSTEMS



## BETASEAL™ U-418 Quick Cure Auto Glass Urethane Adhesive



### Speeds Installations by Eliminating Glass Priming Step

BETASEAL™ U-418 Quick Cure Auto Glass Urethane Adhesive provides primerless-to-glass convenience with excellent workability, sag resistance and convenient drive-away times. BETASEAL U-418 adhesive is easy to use and does not require heating. It is available in cartridges.

### Benefits

- Primerless to auto glass
- FMVSS crash proven
- Meets all long-term durability requirements
- Ready to use – no heating required

### 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 40 °F (4.4 °C) and warmer

### Physical Properties

- Appearance – black, smooth paste
- Solids content – 94 percent
- Flash point – > 110 °F (43 °C)
- Weight per volume – 9.94 lbs/gal
- Specific gravity – 1.19
- Sag – none
- Odor – minimal
- Working time – 8-15 minutes at 72 °F (22 °C) and 50 percent relative humidity
- Full cure - 24 hours using a standard 6mm x 12mm bead at 23 °C 50% RH

### Cured Physical Properties

- Shore A hardness – 50-60 (7 days at room temperature)
- Elongation – > 400 percent
- Tensile strength – > 700 psi

### Adhesive System Requirements

BETASEAL™ U-418 is an adhesive system. When applied according to the installation instructions, BETASEAL U-418 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™ 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.

### Technical Description

BETASEAL U-418 adhesive is a one-component, conventional cure adhesive. It eliminates steps and speeds installations by incorporating glass primer into the urethane. It is primerless to glass and requires only BETAPRIME 5404A primer if the metal is scratched during glass removal.

Note: The glass must be clean and dry to ensure proper bonding. BETASEAL U-418 adhesive meets all OEM and FMVSS standards.





**1. Wear appropriate safety equipment**

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



**2. Inspect replacement glass**

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



**3. Cut out the glass**

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



**4. Prepare the glass**

- a) Use BETACLEAN GC-800 Glass Cleaner and 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
- b) If contamination is present, "wet scrub" the bonding surface with an abrasive pad and BETACLEAN GC-800 cleaner, then apply a second application of BETACLEAN GC-800 cleaner and remove with a lint-free paper towel

**4.1. Prime glass surfaces**

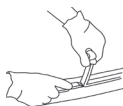
NOTE: IF USING PRIMERLESS-TO-GLASS ADHESIVE AND FRITTED GLASS, SKIP THIS STEP AND PROCEED TO STEP 4.2



- a) Shake BETAPRIME™ 5500 1-Step Glass/Frit Primer for at least **one (1) minute** before application
- b) Open BETAPRIME 5500 bottle carefully and insert a clean, unused dauber; to avoid spilling, never pour liquid on dauber
- c) If using single application BETAPRIME 5500SA, activate according to the directions
- d) Apply BETAPRIME 5500 along the bond line
- e) Replace inner seal and cap on bottle immediately
- f) Allow a minimum of **six (6) minutes** for primer to dry down to 40° F (4.4° C)
- g) Apply the reveal molding or original molding to the glass, if necessary

**4.2. Prepare encapsulation or PAAS**

- a) Clean encapsulation or PAAS bead with BETACLEAN GC-800 Glass Cleaner and a clean, lint-free paper towel
- b) "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
- c) Shake BETAPRIME 5404A Pinchweld and Encapsulation Primer for at least **one (1) minute** to ensure contents are thoroughly mixed
- d) Apply BETAPRIME 5404A primer to the encapsulation or PAAS surface with dauber
- e) Apply BETAPRIME 5404A primer to any molding surface that contacts new urethane to promote adhesion
- f) Replace inner seal and cap on bottle immediately
- g) Allow a minimum of **six (6) minutes** for the primer to dry down to 20° F (-6.6° C)



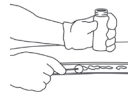
**5. Trim back the urethane**

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



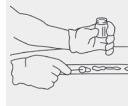
**6. Prepare the pinchweld**

Note: Exposed bare metal areas over ½" x ½" (1.3 cm x 1.3 cm) require an etching primer to restore bond strength and durability (see bare metal priming below)

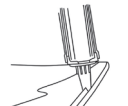


- a) Shake BETAPRIME™ 5404A primer for at least **one (1) minute** before application
- b) Inspect the pinchweld for any bare metal or scratches; if found, prime with BETAPRIME 5404A primer
- c) Open the bottle carefully and insert a clean, unused dauber; to avoid spilling, never pour liquid on dauber
- d) Apply BETAPRIME 5404A primer to scratches along the bond line; avoid priming existing urethane bead
- e) Replace inner seal and cap on bottle immediately
- f) Allow a minimum of **six (6) minutes** for the primer to dry down to 20° F (-6.6° C)

**Bare metal priming:**



- a) Clean metal surface with an abrasive pad, making sure to rough up edges of painted areas
- b) Wipe area to be primed with a clean, lint-free paper towel dampened with 100% acetone
- c) Allow two (2) minutes to flash
- d) Shake BETAPRIME 5201 Bare Metal Etch Primer for at least **one (1) minute** before application
- e) Using a clean, unused dauber, apply an even coat of BETAPRIME 5201 primer
- f) Replace cap on bottle immediately
- g) Allow at least **15 minutes** for material to dry down to 20° F (-6.6° C)
- h) Apply a coat of BETAPRIME 5404A primer on top of the primed area, making sure to completely cover BETAPRIME 5201 primer
- i) Replace inner seal and cap on bottle immediately
- j) Allow a minimum of **six (6) minutes** for the primer to dry down to 20° F (-6.6° C)

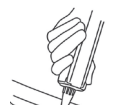


**7. Apply BETASEAL™ adhesive**

(Choose either glass or pinchweld application)

**Glass application:**

- a) Hold the applicator in a vertical position (90°) and dispense the adhesive with a continuous motion in a uniform "V" shaped bead
- b) Apply adhesive to the glass on top of the bond line



**Pinchweld application:**

- c) Hold the applicator in a vertical position (90°) and dispense the adhesive with a continuous motion in uniform "V" shaped bead
- d) Apply adhesive to the pinchweld perimeter directly on top of the freshly cut original equipment urethane film

**Either application:**

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



**8. Install the glass**

- a) Place the glass in the body opening
- b) Adjust glass to precise alignment
- c) Lightly press it into position



**9. Clean up**

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



**10. Recordkeeping**

- a) Attach master lot code sticker to paperwork or manually record primer and adhesive lot numbers
- b) Record D.O.T number form glass part on sticker
- c) Inform the vehicle owner/operator as to the proper safe drive-away time

### Safe Drive-Away Time:

FMVSS 212 with Passenger-side Air Bag

Relative Humidity	Temperature							
	40 ° to 50 °F (4.4° to 10 °C)	50 ° to 60 °F (10° to 15.5 °C)	60 ° to 70 °F (15.5° to 21.1 °C)	70 ° to 80 °F (21.1° to 26.6 °C)	80 ° to 90 °F (26.6° to 32.2 °C)	90 ° to 100 °F (32.2° to 37.7 °C)	100° to 110°F (37.7° to 43.3 °C)	110 °F+ (43.3 °C+)
>90%	13 hours	8 hours	6 hours	5 hours	4 hours	3 hours	3 hours	3 hours
70-90%	15 hours	13 hours	10 hours	7 hours	5 hours	3 hours	3 hours	3 hours
50-70%	24 hours	17 hours	13 hours	8 hours	5 hours	4 hours	4 hours	3 hours
30-50%	24 hours	24 hours	19 hours	13 hours	8 hours	6 hours	5 hours	5 hours
10-30%	24 hours	24 hours	24 hours	23 hours	20 hours	17 hours	15 hours	9 hours

Below 40°F (4.4°C) use BETASEAL Express.

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
U-418	10.5 oz (310 ml)	Cartridge	10	5	51 lb (23 kg)
5201	.5 L (15ml)	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)

### Fast Drive Away

Conventional cure adhesives rely on temperature, humidity and time to cure. The water in the air causes a chemical reaction in the adhesive. The adhesive bead cures from the outside to the center as the moisture diffuses into the adhesive. The curing bonds the adhesive to the substrates and existing bead of urethane adhesive.

### 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

NOTICE: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change over time, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use and for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligations or liability for the information in this document. No warranties are given.

[www.dowautomotiveaftermarket.com](http://www.dowautomotiveaftermarket.com)

Dow Automotive Systems | The Dow Chemical Company | 555 Gaddis Blvd | Dayton, OH 45403 USA  
Telephone: +1-800-453-3779 (toll free) or +1-937-254-1550 | Fax: +1-937-254-3779 | Email: [fxddarg@dow.com](mailto:fxddarg@dow.com)

### 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.



Automotive Systems