

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

*BETASEAL™ U-418 speeds installations – eliminates the glass priming step.*

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

Product benefits include:

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

### *Applications*

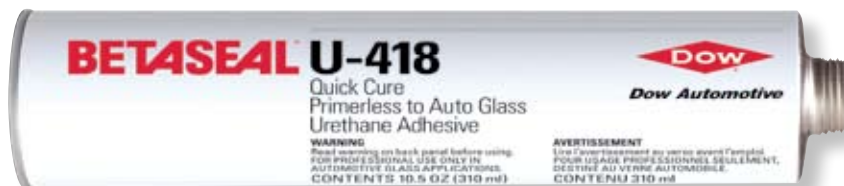
- ▶ Structurally bonded or direct glazed automotive glass, such as windshields, backlites, quarter glass and other stationary glass
- ▶ Other uses such as attaching hardware to glass and backfilling to install reveal moldings or other trim

### *Application details*

- ▶ 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%
- ▶ Flash point – > 110°F (43°C)
- ▶ Weight per volume – 10.1 lbs/gal
- ▶ Specific gravity – 1.2
- ▶ Sag – none
- ▶ Odor – minimal
- ▶ Tack-free time – 25 minutes after application at 72°F (22°C) and 50% RH
- ▶ Working time – 15 minutes at 72°F (22°C) and 50% RH
- ▶ Full cure – less than 24 hours at 72°F (22°C) and 50% RH



### *Cured physical properties*

- ▶ Shore A hardness – 55-60 (7 days at room temperature)
- ▶ Elongation – > 400%
- ▶ Tensile strength – > 700 psi

BETASEAL™ U-418

**Adhesive system requirements**

BETASEAL™ U-418 is an adhesive system. When applied according to the installation instructions, BETASEAL U-418 helps restore windshield structures to their original strength. The complete system includes the following products:

- ▶ BETACLEAN™ GC-800 Glass & Surface 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 5201TF 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 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 meets all OEM and FMVSS standards.

**Safe drive-away times:**

FMVSS 212 with Passenger-side Air Bag

| Relative Humidity | Temperature                |                             |                               |                               |                               |                                |                                 |         |
|-------------------|----------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|---------------------------------|---------|
|                   | 40°-50°F<br>(4.4° to 10°C) | 50°-60°F<br>(10° to 15.5°C) | 60°-70°F<br>(15.5° to 21.1°C) | 70°-80°F<br>(21.1° to 26.6°C) | 80°-90°F<br>(26.6° to 32.2°C) | 90°-100°F<br>(32.2° to 37.7°C) | 100°-110°F<br>(37.7° to 43.3°C) | 110°F+  |
| > 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             | 26 hours                   | 17 hours                    | 13 hours                      | 8 hours                       | 5 hours                       | 4 hours                        | 4 hours                         | 3 hours |
| 30-50             | 36 hours                   | 30 hours                    | 19 hours                      | 13 hours                      | 8 hours                       | 6 hours                        | 5 hours                         | 5 hours |
| 10-30             | 48 hours                   | 40 hours                    | 25 hours                      | 23 hours                      | 20 hours                      | 17 hours                       | 15 hours                        | 9 hours |

Below 40°F (4.4°C) use BETASEAL™ Express or BETASEAL O<sup>ne</sup>.

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

**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.



Crash test: May 2001

## Installation instructions



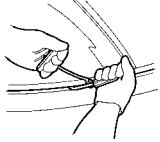
### 1. Wear appropriate safety equipment

- ▶ 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 & Surface 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

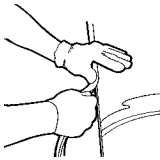


### 4. Dry fit the glass

- ▶ Fit new glass into the opening
- ▶ Determine how to best position the glass
- ▶ Mark this position with "paint safe" tape as guides

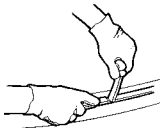
### 5. Prepare the glass

- ▶ Use BETACLEAN GC-800 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. Apply a second application of BETACLEAN GC-800 and remove with a lint-free paper towel



### 5a. Encapsulation and PAAS preparation

- ▶ Clean encapsulation or PAAS bead with BETACLEAN™ GC-800 and a clean, lint-free paper towel
- ▶ "Wet scrub" the encapsulation with an abrasive pad, then clean again with BETACLEAN GC-800. Allow to dry completely
- ▶ **Note:** skip this step if bonding to PAAS
- ▶ Shake BETAPRIME™ 5404A Pinchweld and Encapsulation Primer for at least **one (1) minute** to ensure contents are thoroughly mixed
- ▶ Apply BETAPRIME 5404A 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
- ▶ Apply reveal molding or original molding to the glass, if necessary



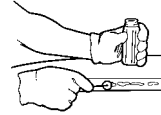
### 6. Trim back the urethane

- ▶ Trim the urethane with an appropriate tool leaving a 1 mm to 2 mm base of original equipment urethane on the pinchweld
- ▶ Take care not to damage the vehicle paint or pinchweld



### 7. Prepare the pinchweld

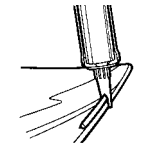
**Note:** exposed bare metal areas over 1/2" x 1/2" (1.3 cm x 1.3 cm) require an etching primer to restore bond strength and durability (See bare metal priming below)



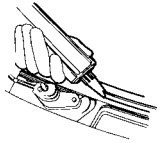
- ▶ Shake BETAPRIME 5404A for at least **one (1) minute** before application
- ▶ Inspect the pinchweld for any bare metal or scratches
- ▶ If found, prime these with BETAPRIME 5404A
- ▶ Open the bottle carefully. Insert a clean, unused dauber. To avoid spilling, never pour liquid on dauber
- ▶ Apply BETAPRIME™ 5404A 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 5201TF Bare Metal Etch Primer for at least **one (1) minute** before application
- ▶ Using a clean, unused dauber, apply an even coat of BETAPRIME 5201TF
- ▶ Replace cap on bottle immediately
- ▶ Allow at least **30 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 on top of the primed area making sure to completely cover BETAPRIME™ 5201TF etching primer
- ▶ Replace inner seal and cap on bottle immediately
- ▶ Allow a minimum of **six (6) minutes** for the primer to dry



Apply to glass or pinchweld



### 8. Apply BETASEAL™ Urethane Adhesive

(Choose either glass or pinchweld 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

*Pinchweld 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 pinchweld 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.



### 9. Install the glass

- ▶ Apply BETAPRIME 5404A to any molding or encapsulation bonding surface that contacts new urethane to promote adhesion
- ▶ Place the glass in the body opening
- ▶ Use the tape guides to correctly position the glass. Adjust glass to precise alignment.
- ▶ Lightly press it into position
- ▶ Back paddle urethane around edge of glass into gaps
- ▶ Replace the press-in style molding, if required
- ▶ Replace any additional hardware



### 10. Clean up

- ▶ Clean any excess uncured urethane with BETACLEAN U-424 Urethane Adhesive Cleaner
- ▶ Clean the newly installed glass with BETACLEAN GC-800
- ▶ Complete the job paperwork and record lot numbers
- ▶ Release the car to the customer after the appropriate drive-away time elapses

### Vehicle clean up

- ▶ If required, use BETACLEAN™ U-424 Urethane Adhesive Cleaner following all directions and precautions
- ▶ Test BETACLEAN U-424 on an inconspicuous area prior to using
- ▶ BETACLEAN U-424 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 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.

### System compatibility

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

### Dow Automotive's commitments

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

### Packaging

| 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)      |
| 5201TF         | .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)     |

### Exclusion of all other warranties

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*We listen. We deliver.*



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