

Crash-Proven Drive Away Times

# BETASEAL

AUTO GLASS  
URETHANE ADHESIVE



**Dow Automotive**

**Crash testing is the only way to prove an adhesive system's safe drive away claims. BETASEAL\* safe drive away times are confirmed through actual vehicle crashes. We use the same adhesives and procedures for our tests that you would for an aftermarket replacement.**



### Crash tests don't lie

Crash tests eliminate theories and demonstrate how the adhesive performs. The adhesive holds or it doesn't.

### Demand proof

Don't take chances with your customers. Use what's proven — BETASEAL adhesives.

**Demand to see the crash test results that validate safe drive away claims.**

### Advanced Cure

Advanced-cure urethane adhesive is a one-component material with enhanced chemical crosslinking to speed bonding for safe drive aways. 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 aways.

### **BETASEAL Express** Advanced Cure Auto Glass Urethane Adhesive



Crash tested  
April 2002



#### *Safe Drive Away Time*

Temperature	FMVSS 212 with passenger side air bag
0°F (-17.8°C) and above	1 hour

### **BETASEAL DashHMC** High Modulus, Non Conductive Auto Glass Urethane Adhesive



Crash tested  
March 2002



#### *Safe Drive Away Time*

Temperature	FMVSS 212 with passenger side air bag
15°F (-9.4°C) and above	1 hour

Note: For use in high modulus, nonconductive applications. Consult the NAGS™ list for vehicles that require high modulus, nonconductive adhesives.

## Conventional Cure

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.

## BETASEAL U-400HV Rapid Cure Auto Glass Urethane Adhesive



Crash tested  
April 2001



### Safe Drive Away Times

FMVSS 212 with Passenger Side Air Bag



Relative Humidity	Temperature								
	40°-50°F (4.4° to 10°C)	50°-60°F (10° to 15.5°C)	60°-70°F (15.5° to 21.1°C)	70°-80°F (21.1° to 26.6°C)	80°-90°F (26.6° to 32.2°C)	90°-100°F (32.2° to 37.7°C)	100°-110°F (37.7° to 43.3°C)	110°F+	(43.3°C)
>90%	7 hours	5 hours	4 hours	3 hours	2 hours	2 hours	2 hours	2 hours	2 hours
70-90	8 hours	6 hours	5 hours	3 hours	2 hours	2 hours	2 hours	2 hours	2 hours
50-70	8 hours	7 hours	5 hours	4 hours	3 hours	2 hours	2 hours	2 hours	2 hours
30-50	24 hours	12 hours	7 hours	5 hours	3 hours	3 hours	3 hours	3 hours	2 hours
10-30	24 hours	20 hours	12 hours	7 hours	6 hours	5 hours	5 hours	5 hours	4 hours

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

## BETASEAL U-418 and U-418HV Quick Cure Primerless to Auto Glass Urethane Adhesive



Crash tested  
May 2001



### Safe Drive Away Times

FMVSS 212 with Passenger Side Air Bag

Relative Humidity	Temperature								
	40°-50°F (4.4° to 10°C)	50°-60°F (10° to 15.5°C)	60°-70°F (15.5° to 21.1°C)	70°-80°F (21.1° to 26.6°C)	80°-90°F (26.6° to 32.2°C)	90°-100°F (32.2° to 37.7°C)	100°-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	3 hours
70-90	15 hours	13 hours	10 hours	7 hours	5 hours	3 hours	3 hours	3 hours	3 hours
50-70	26 hours	17 hours	13 hours	8 hours	5 hours	4 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	5 hours
10-30	48 hours	40 hours	25 hours	23 hours	20 hours	17 hours	15 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 these charts as guidelines.

*Reduce risk with  
The Technology Leader*



**Dow Automotive**

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