



Automotive Lighting Adhesives, Materials and Services

H.B. Fuller is committed to the advancement of automotive exterior lighting adhesives, lighting electronic component design, materials and manufacturing.

We have been a leading global innovator and supplier of lighting adhesives for over 25 years. Today, we continue to be a leading partner for new cost-effective solutions for our customers. Our adhesives have been used on headlamps, tail lamps and signal lamps on vehicles manufactured in the Americas, Europe, and Asia Pacific regions.

The structural lamp bonding adhesives from H.B. Fuller are based on one-component and two-component reactive urethane systems. These products feature low VOC raw materials, fast time to leak test, high temperature resistance, and fast cure.

We embrace the convergence between automotive lighting and electronics, and our Engent business' electronic component design, materials and manufacturing capabilities offer unique solutions:

- Industry leading design for manufacturing (DFM) engineering services
- Best in class SMT assembly equipment and capability
- Complete failure analysis capability and competency
- Reliability validation
- Equipment solutions – materials application
- Materials solutions – component, board and device
- Manufacturing ramp-up services
- On-site technology deployment

Lamp Bonding Adhesives

NP2075VF149

This is a warm applied, one-component, reactive adhesive with excellent in-process thermal stability, high green strength and outstanding adhesion performance at high operating temperatures.

swift®bond 2139/1 + swift®hardener 2111

This is a room temperature applied, two component, reactive adhesive with excellent fogging resistance properties. It has faster initial cure properties when compared to the swift®bond 2140 + swift®hardener 2111. This solution allows for a short time to leak test and other downstream operations.

swift®bond 2140 + swift®hardener 2111

This is a room temperature applied, two component, reactive adhesive with excellent fogging resistance properties. It has slower initial cure properties when compared to the swift®bond 2139/1 + swift®hardener 2111, which allows for more flexibility in the headlamp assembly process.

1K HOT MELT POLYURETHANE REACTIVE TECHNOLOGY

| Product | Time to Leak Test at Room Temperature (minutes) | Heat Resistance | Color | Viscosity at 163°C (mPa-s) | Application Temperature | Shelf Life (months) | Typical Substrates |
|-------------|---|-----------------|-------|----------------------------|-------------------------|---------------------|--------------------|
| NP2075VF149 | 8-15 | >107°C | Black | 10,000 | 135-160°C | 6 | PP (treated) PC |

2K POLYURETHANE TECHNOLOGY

| Product | Time to Leak Test at Room Temperature (minutes) | Heat Resistance | Color | In-Use Viscosity at 20°C (mPa-s) | Shelf Life (months)* | Typical Substrates | Fogging |
|---|---|-----------------|----------------|----------------------------------|----------------------|--------------------|---------|
| swift®bond 2139/1 + swift®hardener 2111 | 8-15 | 120°C | Black Beige | 130,000 40,000 | 9 6 | PP (treated) PC | >130°C |
| swift®bond 2140 + swift®hardener 2111 | 15-30 | 120°C | Black Beige | 130,000 40,000 | 9 6 | PP (treated) PC | >130°C |

*The swift®bond 2139/1 and swift®bond 2140 have a 9 month shelf life and the swift®hardener 2111 has a 6 month shelf life.

For more information: www.hbfuller.com/automotive, www.tonsan.com, www.engentaat.com.



Connecting what matters.™



IMPORTANT: It is the user's responsibility to test and determine the suitability of a product for the user's intended use. Any product samples provided for testing are provided in accordance with standard limited warranties as stated on our technical data sheets.

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