



AN ELLSWORTH ADHESIVES COMPANY 

# TECHNICAL DATA SHEET EP1115 Clear

03/26/2009

W186 N11687 MORSE DRIVE GERMANTOWN, WI 53022  
262-502-6610 FAX 262-502-4743

## DESCRIPTION:

*Resinlab™* EP1115 Clear is a two part unfilled epoxy adhesive designed for bonding of metals, ceramics and most plastics. This product gives good resistance to water, salt spray, inorganic acids and bases and most organic solvents. This product gives better water and temperature resistance than standard 5 minute epoxy.

It was especially formulated to a 1:1 mix ratio for use in either MMD equipment or side by side dual cartridges for easy dispensing. A handling cure is normally achieved at room temperature within 2 – 4 hours with full cure in 24 hours. An elevated temperature cure schedule can be used to reach final properties quickly. 30 minutes at 60°C to 10 minutes at 100°C is typical.

## TYPICAL PROPERTIES:

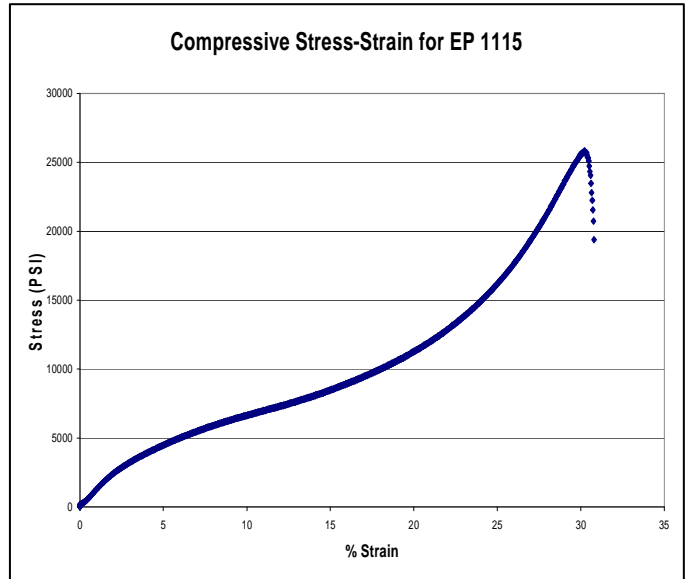
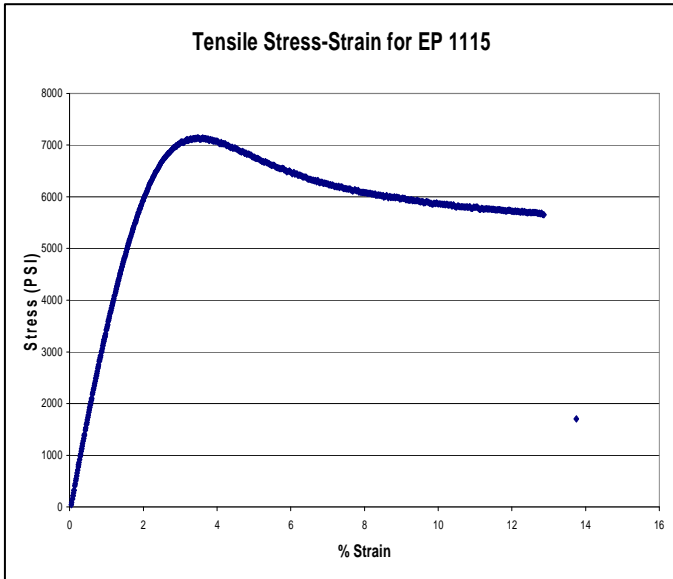
All properties given are at 25°C unless otherwise noted.

| <u>PROPERTY:</u>     |        | <u>VALUE:</u>      | <u>TEST METHOD:</u> |
|----------------------|--------|--------------------|---------------------|
| Color                |        | Clear              |                     |
| Viscosity            |        |                    | TM R050-12          |
| RVT, #6, 2.5 RPM     | Part A | 16,000 cps (mPa-s) |                     |
| RVT, #6, 2.5 RPM     | Part B | 88,000 cps (mPa-s) |                     |
|                      | Mixed  | 50,000 cps (mPa-s) |                     |
| Specific Gravity     | Part A | 1.16               | TM R050-16          |
|                      | Part B | 1.05               |                     |
|                      | Mixed  | 1.10               |                     |
| Pot Life             |        | 8-12 min.          | TM R050-19          |
| Mass                 |        | 50 grams           |                     |
| Hardness             |        | 80                 | TM R050-17          |
| Scale                |        | Shore-D            |                     |
| Water Absorption     |        | 0.88 %             | TM R050-35          |
| 24 hours             |        |                    |                     |
| Temperature Range ** |        | -40 to 130°C       |                     |

RESINLAB L.L.C. MAKES NO EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY, FITNESS OR OTHERWISE with respect to its products. In addition, while the information contained herein is believed to be reliable, no warranty is expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof. All recommendations or suggestions for use are made without guarantee inasmuch as conditions of use are beyond our control. The properties given are typical values and are not intended for use in preparing specifications. Users should make their own test to determine the suitability of this product for their own purposes.

W186 N11687 MORSE DRIVE GERMANTOWN, WI 53022  
262-502-6610 FAX 262-502-4743

| <u>PROPERTY:</u>                                     | <u>VALUE:</u> |                         | <u>TEST METHOD:</u> |
|--|---------------|-------------------------|---------------------|
| Tensile  | <b>PSI</b>    | <b>N/mm<sup>2</sup></b> | TM R050-36          |
| Yield Strength                                       | 5,000         | 34.5                    |                     |
| Ultimate Strength                                    | 7,000         | 48.3                    |                     |
| Break Strength                                       | 5,500         | 37.9                    |                     |
| Elongation At Break                                  | 10-25 %       |                         |                     |
| Yield Modulus  | 350,000       | 2,415                   |                     |
| Tensile Lap Shear<br>(2024 T3 Al Abraded / MEK Wipe) | 2,500         | 17.2                    | TM R050-37          |
| Compressive  |               |                         |                     |
| Yield Strength                                       | 6,000         | 41.4                    | TM R050-38          |
| Ultimate Strength                                    | 25,000        | 172.4                   |                     |
| Break Strength                                       | 25,000        | 172.4                   |                     |
| Modulus  | 300,000       | 2,070                   |                     |





AN ELLSWORTH ADHESIVES COMPANY 

# TECHNICAL DATA SHEET EP1115 Clear

03/26/2009

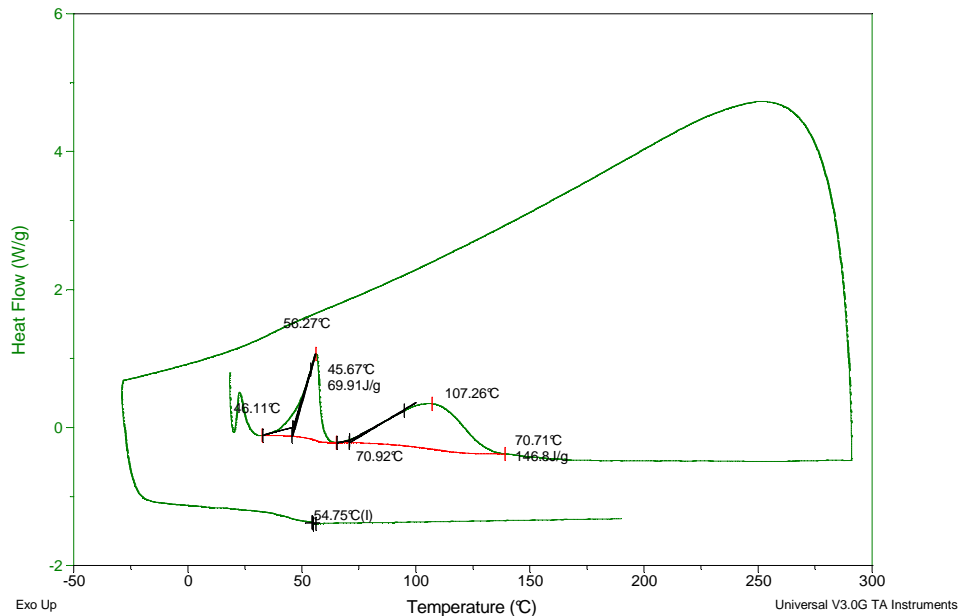
W186 N11687 MORSE DRIVE GERMANTOWN, WI 53022  
262-502-6610 FAX 262-502-4743

| <u>PROPERTY:</u>                        | <u>VALUE:</u>                                   | <u>TEST METHOD:</u> |
|---|---|---------------------|
| Linear Coefficient of Thermal Expansion | 80 ppm/°C (below Tg)*<br>200 ppm/°C (above Tg)* |                     |
| Thermal Conductivity                    | 0.106 BTU/(hr·ft·°F) *<br>0.183 W/m° K *        |                     |
| Dielectric Constant (25°C, 100Hz)       | 4.5 *   |                     |
| Dielectric Strength                     | 440 V/mil *<br>17.3 kV/mm *                     |                     |
| Volume Resistivity                      | 8 x 10 <sup>12</sup> ohm-cm *                   |                     |
| Glass Transition Temp                   | 55°C  | TM R050-25          |
| 1 <sup>st</sup> Exothermic Energy       | 69.91 J/g                                       |                     |
| 1 <sup>st</sup> Onset Temp (by DSC)     | 46°C  |                     |

Sample: EP 1115  
Size: 15.0000 mg  
Method: HP DSC  
Comment: 300 Full Cure + Tg

DSC

File: Z:\...DSC\EP 1115\EP 1115.001  
Operator: NVo  
Run Date: 12-Oct-07 11:20



RESINLAB L.L.C. MAKES NO EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY, FITNESS OR OTHERWISE with respect to its products. In addition, while the information contained herein is believed to be reliable, no warranty is expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof. All recommendations or suggestions for use are made without guarantee inasmuch as conditions of use are beyond our control. The properties given are typical values and are not intended for use in preparing specifications. Users should make their own test to determine the suitability of this product for their own purposes.

W186 N11687 MORSE DRIVE GERMANTOWN, WI 53022  
262-502-6610 FAX 262-502-4743

### INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing. Cartridges should be stored in a vertical position to allow any air to accumulate at the tip. Mixer should be attached keeping the cartridge vertical and any air pocket purged this way. Ease of dispensing is greatly affected by ambient / material temperature.
2. If used in bulk, weigh and mix parts A and B accurately and thoroughly, scraping sides of container often. Do not pour from mixing container, transfer to a new container as residual unmixed material may cause a tacky spot on surface. If product is used in a side-by-side cartridge, attach a new static mixer with each cartridge, pre-bleed the first 3 inches of dispensed material or until a uniform color is obtained. Maintain adequate velocity during dispensing to ensure complete mixing.
3. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.
4. Clean up uncured resin with suitable organic solvent such as MEK, acetone or other organic solvent.

### SIDE - BY - SIDE CARTRIDGE SUITABILITY RATING

POOR FAIR AVERAGE GOOD **EXCELLENT**

This rating scale is a general guideline to give the user an expected level of success in a typical bench-top dispensing scenario.

Important process variables to consider are: Cartridge type and size, wall thickness; manual or pneumatic gun type; static mixer design and dimensions; product viscosity spread and ratio; shot size, shot frequency, flow rate; temperature range during use.

This scale also address's product stability in a cartridge. Factors such as filler content and settling rate, storage temperature and cartridge orientation are important factors which affect this.

It is important for the user to define the optimum static mix for each dispensing process, a change in any of the above variables can affect the mix quality. Dispensing the product on a flat surface using the dispensing pattern can help show the quality of mixing in terms of thoroughness and lead/lag consistency.

|                          |             |        |
|--------------------------|-------------|--------|
| <b><u>MIX RATIO:</u></b> | Part A to B |        |
|                          | by weight   | 1 to 1 |
|                          | by volume   | 1 to 1 |

\* Asterisk denotes values considered typical to associated resin systems or extrapolated from other test results.

\*\* Temperature Rating is based on average design requirements and is not intended as a guarantee of suitability for all applications operating at that temperature.

---

W186 N11687 MORSE DRIVE GERMANTOWN, WI 53022  
262-502-6610 FAX 262-502-4743

**Notes:**

Values presented above are considered to be typical properties, not to be used for specification purposes. Contact our Technical Department for further information.

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50°C) aggravate this phenomena. Heating the individual component to 50 to 60°C while stirring can usually restore products to original state. Storage at 25 +/- 10°C is optimum for most products.

**SHELF LIFE:**

12 months at 25°C. Specialty packaging may be less.