



# TECHNICAL DATA SHEET

TDS# 2505

DATE: JUNE 2013

## BACON INDUSTRIES

### LOW EXPANSION ADHESIVE LCA-4LV

Adhesive LCA-4LV is a highly filled gyro grade epoxy adhesive having a low coefficient of thermal expansion, good dimensional stability and excellent chemical resistance. It is useful in applications requiring bonding or hermetic sealing of metal, ceramic, glass and other substrates.

Compared to Adhesive LCA-4 (see Data Sheet No. 2504), Adhesive LCA-4LV is less viscous, has a longer working life and generally requires additional cure time to develop similar properties.

### RECOMMENDED MIXING AND HANDLING PARAMETERS

Adhesive	LCA-4LV
Activator	BA-5
Parts by weight of activator required per hundred of adhesive	4.50
Viscosity of mixed adhesive, poise	
at room temperature	3000
at 160°F	100
Work Life at room temperature, minutes	100
Pot Life (tack-free time) at room temperature, minutes	240

### TYPICAL PROPERTIES OF CURED ADHESIVE:

	Cure		
	2 hr at 200°F	8 hr at 200°F	1 hr at 140°F + 48 hr at 160°F
Specific Gravity (ASTM D792-A)	1.86	1.86	1.86
Color <sup>1</sup>	Lt Green	Lt Green	Lt Green
Hardness (ASTM D1706), Shore D	91	92	92
Lap Shear Strength to aluminum (ASTM D1002), psi			
at -65°F	2300	2600	2200
at 77°F	2300	2500	2000
at 200°F	2300	2500	2100
Flexural Strength (ASTM D790), psi	12000	12000	10000
Young's Modulus in Flexure (ASTM D790), 10 <sup>6</sup> psi	1.6	1.6	1.6
Glass Transition temperature			
by Dif. Scanning Calorimetry, °F	176	217	199
by Thermal Mech. Anal., °F	175	199	178
Coeff. of Linear Therm. Exp. (ASTM D831-A), 10 <sup>-6</sup> /°F			
between -65°F and 80°F	15	15	16
between 80°F and 135°F	22	20	21
between 250°F and 300°F	63	66	60

(over)

Weight Change in water, %			
24 hr immersion (ASTM D590-A)			
plus drying 24 hr at 120°F	+0.010	+0.005	+0.002
Weight Change after 24 hr in solvent plus			
drying 24 hr at 120°F			
Methanol	+0.007	-0.007	-0.006
Toluene	+0.004	-0.003	-0.002
HCFC 141b	-0.002	-0.004	-0.009
Acetone	+0.005	0.004	0.001
n-Hexane	+0.005	0.004	0.002
Chloroform	+0.230	0.001	0.138
Dielectric Constant at 1 kHz			
at 77°F	5.21	---	---
at 200°F	5.47	---	---
Dissipation Factor at 1 kHz			
at 77°F	0.003	---	---
at 200°F	0.008	---	---
Volume Resistivity, 10 <sup>14</sup> ohm-cm			
at 77°F	20	---	---
at 200°F	0.7	---	---
Permeability to water vapor			
at 212°F, 10 <sup>-9</sup> g/cm-sec-atm	1	---	---

#### NOTES

<sup>1</sup> Activator BA-9 (BA-5 without color and thickener) may be used at a ratio of 4.20 parts by weight of Activator BA-9 per hundred parts by weight of Adhesive LCA-4LV. Cured properties of the adhesive are the same except the color is cream.

#### **INSTRUCTIONS FOR USE:**

Stir well the contents of the container each time before removing material. If the contents are hard or lumpy, warm to 200°F and mix thoroughly before removing material. Prolonged storage at room temperature may result in the Adhesive LCA-4LV resin crystallizing. Warming to 200°F will melt the resin and restore the adhesive to its original consistency. Weigh the ingredients accurately so that each amount specified does not vary more than 5%.

#### **FOR INDUSTRIAL USE ONLY! WARNING!!**

May cause injury to skin following prolonged or repeated contact. Use with adequate ventilation. Refer to Material Safety Data Sheets for detailed health and safety information.

#### **SHELF LIFE:**

The shelf life of these materials are greater than two years when stored in unopened containers at an average temperature below 85°F.

#### **AVAILABILITY:**

Adhesive LCA-4LV/BA-5 and LCA-4LV/BA-9 are available in quart and four fluid ounce kits, and Adhesive LCA-4LV/BA-9 is available in One-Shot kits (see Data Sheet No. 2011). Prices are listed on Data Sheet No. 2201. These systems are available also in Freeze-Paks. See Data Sheets No. 2031 and 2032.