

ERA-182
THERMALLY CONDUCTIVE EPOXY ADHESIVE

ERA-182 is a thermally conductive and electrically insulating epoxy adhesive. It has a paste consistency and will not run or sag during cure. It exhibits excellent adhesion to aluminum, glass and other difficult to bond substrates. Its thermal properties will increase the efficiency of high wattage semiconductors by providing a thermally conductive bond to a heat sink.

TYPICAL HANDLING PROPERTIES:

Resin	ERA-182A
Hardener	ERA-182B
Mix ratio by weight, phr	4
Pot Life (100 grams) at 25°C, mins	120
Recommended Cure Schedule	30 mins at 90°C
Alternate Cure Schedule	48 hrs at 25°C

TYPICAL CURED PROPERTIES AFTER RECOMMENDED CURE:

Color	Black
Specific Gravity	2.3
Hardness, Shore D	95
Lap Shear Strength to Aluminum, psi	
at -55°C	2300
at 25°C	2300
at 65°C	2400
at 93°C	900
Thermal Conductivity (ASTM F433), Btu.in/hr.ft ² .°F	
at 40°C	8.7
at 125°C	8.3
Flexural Strength at 25°C, psi	12,700
Flexural Modulus at 25°C, psi	1.5x10 ⁶
Service Temperature range	-55°C to 120°C
Glass Transition Temperature, °C	77
Coefficient of Linear Thermal Expansion, 10 ⁻⁶ /°C	
from -55°C to 25°C	27
from 25°C to 65°C	40
from 65°C to 100°C	61

Flammability (ASTM D635)		
	Average time of burning, sec	125
	Average extent of burning, mm	15
Water Absorption (7 day immersion), at 25°C, %		0.11
Dielectric Strength, volts/mil (3 mm thick sample)		460
Dielectric Constant at 1 kHz		
	at 25°C	5.87
	at 65°C	6.23
	at 93°C	7.49
Dissipation Factor at 1 kHz		
	at 25°C	0.008
	at 65°C	0.008
	at 93°C	0.042
Volume Resistivity, ohm-cm		
	at 25°C	9×10^{15}
	at 65°C	2×10^{14}
	at 93°C	9×10^{10}

INSTRUCTIONS FOR USE:

Mix ERA-182A thoroughly before each use. If the contents are hard or lumpy, warm to 80°C before mixing.

At room temperature, mix 100 grams of ERA-182A with 4 grams of ERA-182B. Mix thoroughly until uniform in consistency and vacuum degas. Cure as recommended to achieve the desired properties. Typical cured properties were determined using the recommended cure schedule. Some difference in properties may occur with the alternate or other cure schedules.

FOR INDUSTRIAL USE ONLY:

These materials are intended for industrial use only, and the practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

WARNING!!

Although the system contains low volatility materials, care should be taken in handling. Adequate ventilation of the work place and ovens is essential. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. In case of skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 10 minutes and seek medical attention. Refer to the Material Safety Data Sheet for additional health and safety information.

SHELF LIFE:

The shelf life of these materials is greater than two years when stored in unopened containers at an average temperature of 25°C.