

## ADHESIVES

GC Electronics offers three basic types of adhesives:

- 1. EPOXY CEMENTS:** Among the strongest and most universal of all bonding materials. They consist of two parts which must be mixed before applications. Epoxies dry without heat or pressure at room temperature through catalytic action.
- 2. CYANOACRYLATE ADHESIVES:** Do not require the use of an added catalyst, nor heat or pressure. Dries within seconds through the process of polymerization.
- 3. SOLVENT-RELEASE ADHESIVES:** Resins or polymers in solution. This general category also includes welding type adhesives which create a bond of exceptional strength.

## EPOXY CEMENTS

Two-component, solventless cements which form an exceptionally strong bond (up to 4,000 psi) and they do not shrink on curing. May be used to cement porous and non-porous substances including all metals, glass, ceramics, most plastics, cardboard, wood, rubber, and fiber. They resist moisture, most solvents, acid, and alkalis. The consistency of epoxy is that of semi-fluid or putty. They have a tendency to "fill-in" and will produce strong bonds even if the parts to be cemented do not match perfectly. Epoxy cures at room temperature, but elevated temperatures (up to 80°C) may be employed to speed up the curing time. All GC epoxy cements are easy to prepare as they require a 50/50 composition to be mixed. This can be judged when squeezing out the tube, for the exact ratio is not critical. The working life, often called "pott life" of the mixture, is the time span from mixing the two parts until the chemical reaction starts to harden the compound. A product with short working, and correspondingly short curing time, is indicated where a single repair is to be made and the mixture can be applied immediately after preparation. For production purposes, a type with long pott life should be selected.



### Quik Stik

5 Minutes Set

Clear, fast curing epoxy adhesive. In view of its short pott life, use is recommended when a single repair must be made and the mixed adhesives can be used within one or two minutes. Cemented items can be safely handled within eight to twelve minutes, with full hardness obtained after several hours. This cement is relatively thin in consistency and should be used to cement closely matching surfaces. The glue line is usually invisible.

**Part No. 10-114** Pkg. of two 1/2 fl. oz. Tubes

**Part No. 19-822** Double Syringe .0105 oz.



### 2 Part Epoxy Super Glue

5-6 Hour Set

Versatile epoxy cement particularly suitable for cementing non-porous materials. Cures at room temperature. Bond strength of over 3000 psi. Will not shrink through curing. Resistant to water, solvents, heat, cold and fungus. Excellent dielectric properties. Mix in equal parts from two tubes.

**Part No. 10-100** Pkg. of two 3/4 oz. Tubes



### 2 Part Epoxy Glue

5 Hours Set

Provides an exceptionally hard and strong bond. Good dielectric properties. Gray-white in color with fillers added to increase viscosity and make it thixotropic (non-running). May be used to fill gaps or to replace broken sections. Bonds may be over-filled and filed or sanded after curing.

**Part No. 10-347**  
Pkg. of two 2 fl. oz. Tubes  
N.S.N. 8040-00-281-2308



### Epoxy Putty

GC Epoxy Putty is a two part epoxy in a single tube. Amount needed is cut off and kneaded together. Two minute work life. Dielectric strength: 400 volts/mil. Sets hard in 20 minutes, may be drilled and tapped. Max. useful temp. 300° F.

Applications: Plumbing repairs, works under water. Electrical, use in place of tape.

**Part No. 19-348** 4 oz. Tube



### Conductive Epoxy

Electrically conductive silver filled two part for attaching electrical components. Mix ratio 1/1. Pot life 40 min. Cure 24 hours. Vol. res. .005 ohm-cm max.

**Part No. 19-2092** .2116 oz. Kit



### GC Potting Epoxy

Black opaque epoxy used for potting and encapsulating electronic circuits. Use to environmentally protect or conceal circuits. This product is excellent when used with Chassis Boxes. Working Time (Pott Life), 1 Hour, Mix ratio: 1 to 1, Temperature Range: -40° to 300° F.

Electrical Properties:  
Volume Resistivity:  $8.3 \times 10^{14}$  Ohm-cm  
Dielectric Constant: 3.5 (25°C, 100 Hz)  
Dielectric Strength: 410 v/mil

**Part No. 19-823** 8 oz. Kit (2-4 oz. Bottles)

**Part No. 19-824** 18 oz. Kit (2-9 oz. Bottles)

**Part No. 19-824-2G** 2 gal. Kit (two 1 gal. containers)

**MATERIAL SAFETY DATA SHEET**

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Type: Adhesive  
 Product Name: **Epoxy Putty**  
 Part Number(s): **19-348**

**Section 1 – Identification of Product**

HMIS Ratings:	Least	0
Health 1	Slight	1
Flammability 1	Moderate	2
Reactivity 0	High	3
Protective Equipment A	Severe	4

**Section 2 – Hazardous Ingredients**

Hazardous Components	CAS#	Approx %	ACGIH-TLV	OSHA-PEL
Glycidyl Ethers of Bisphenol A Resins	25068-38-6	13.05	N.E	N.E
Tri(Dimethylaminomethyl)Phenol	90-72-2	1.37	N.E	N.E
Crystalline Silica	14808-60-7	12.64	N.E	N.E

**Section 3 – Physical Data**

Appearance:	Putty-like
Odor:	Mild amine odor
Boiling Point:	N/A
Specific Gravity (H <sub>2</sub> O=1)	1.5
Vapor Pressure (mm Hg.)	Nil
Volatile by Volume (%)	0
Vapor Density (Air=1)	N/A
Evaporation Rate (BUAC=1)	Nil
Solubility in Water:	None

**Section 4 – Fire and Explosion Hazard Data**

Flash Point (Method Used):	None
Flammable Limits (% by Volume):	LEL N/A UEL N/A
Fire Extinguishing Media:	Water spray, foam, CO <sub>2</sub> , dry chemicals
Special Fire Fighting Procedures:	None
Unusual Fire and Explosion Hazard:	CO, aldehydes, acids, oxides of sulfur and nitrogen may be formed.

<b>Section 5 – Health Hazard Data</b>
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Primary Routes of Entry:                     Inhalation  
      Skin Contact  
      Eye Contact  
      Ingestion

## Effects of Overexposure

Skin Contact:                                    Possible irritant and sensitizer.

Eye Contact:                                    Possible irritant and sensitizer.

Ingestion:                                      Irritation of intestinal tract.

Medical Conditions Aggravated by Exposure: None

## Emergency and First Aid Procedures

Ingestion:                                      Induce vomiting

Skin Contact:                                  Wash with soap and water immediately.

Eye Contact:                                  Flush with water, consult a physician.

<b>Section 6 – Reactivity Data</b>
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Stability:                                       Stable                                     Unstable

Conditions to Avoid:                        None

Incompatibility (Materials to Avoid):    None

Hazardous Decomposition Products:    CO, aldehydes, acids, oxides of sulfur and nitrogen.

Hazardous Polymerization:               May Occur                     Will Not Occur

Conditions to Avoid:                        None

<b>Section 7 – Spill or Leak Procedures</b>
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Steps to be taken in case  
 material is released or spilled:            Spills or leaks: Dispose of in a normal manner; not a hazardous waste.  
     Not a potential pollutant.

Waste Disposal Method:                    Incinerate in furnace or bury in landfill according to applicable  
 regulations.

<b>Section 8 – Special Protection Information</b>
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Respiratory Protection (specify type):    None required

Ventilation:                                    Local exhaust – only if heated above 100°F.

Protective Gloves:                            Polyethylene gloves for prolonged use.

Eye Protection:                                Safety glasses.

Other Protective Equipment  
 and Hygienic Practices:                    N/A