GLUDITEC
Glue & Dispensing Technology

Technical Data Sheet

ET5109

Two-part Epoxy for Bonding

ET5109 is a two-component, room-temperature curing, thixotropic paste adhesive of high strength with good environmental and excellent chemical resistance. Used for bonding metals, electronic components, GRP structures, and many other items where a higher than normal temperature or more aggressive environment is to be encountered in service.

FEATURE

- Fast curing
- General purpose
- Low shrinkage
- Bonds a wide variety of materials
- Tough and resilient

TYPICAL UNCURED PROPERTIES

Properties	ET5109-A	ET5109-B
Color	Beige paste	Grey paste
Specific gravity	1.6	1.5
Viscosity at 25°C (Pas)	100	Thixotropic

TYPICAL CURING PROPERTIES

Properties	ET5109
Mix Ratio (A:B) by Weight	2:1
Pot Life (100 gm at 77°F)	110 minutes
Cure time to reach LLS > 145 psi (1MPa)	13 hr @ 10°C 10 hr @ 15°C 5 hr @ 23°C 90 min @ 40°C 20 min @ 60°C 5 min @ 100°C
Cure time to reach LLS > 1450 psi (10MPa)	25 hr @ 10°C 15 hr @ 15°C 8 hr @ 23°C 2 hr @ 40°C 30 min @ 60°C 6 min @ 100°C

DIRECTION OF USE

- The strength and durability of a bonded joint are dependent on the proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent, such as acetone, alcohol, or other proprietary degreasing agents, in order to remove all traces of oil, grease, and dirt. The strongest and most durable joints are obtained by either mechanically abrading or chemically etching ("pickling") the degreased surfaces. Abrading should be followed by a second degreasing treatment.
- ET5109 is available in cartridges incorporating mixers and can be applied as ready to use adhesive with the aid of the tool recommended by Gluditec.
- The resin/hardener mix may be applied manually or robotically to the pretreated and dry joint surfaces. Gluditec's technical support group can assist the user in the selection of a suitable application method as well as supply adhesive dispensing equipment. A layer of adhesive 0.05 to 0.10 mm thick will normally impart the greatest lap shear strength to the joint. Gluditec stresses that proper adhesive joint design is also critical for a durable bond. The joint components should be assembled and secured in a fixed position as soon as the adhesive has been applied.

STORAGE AND SHELF LIFE

This product must be stored at room temperature provided the components are stored in sealed containers. The expiry date is indicated on the label

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TYPICAL CURED PROPERTIES (*1)

Properties	ET5109
Glass Transition Temp., (DSC), °C	85
Water Absorption Ratio (25°C/24hr), %	2.6
Shear Strength, Al vs. Al, Kgf/cm²	207
Tensile strength, MPa	30
Tensile Modulus, MPa	3,100
Elongation, %	0.9
Flexural Strength, MPa	60
Flexural Modulus, MPa	3,500
Shear modulus, MPa	1,200 @ 50°C 32 @ 75°C 25 @ 100°C 22 @ 125°C
Dielectric strength (kV/mm)	25
Volume Resistivity, ohm-cm	2.7 E+15
Surface Resistivity, ohm	4.6 E+16
Dielectric Constant. 60Hz	4.0
Loss tangent, % at 60Hz	1.3

CAUTION

Our products are generally quite harmless to handle, provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming into contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary, as will the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper, not cloth towels, should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data Sheets for the individual products and should be referred to for fuller information.

The data contained in this bulletin is provided only as a guide for evaluation/consideration. These material characteristics are typical properties that are based on a limited number of samples tested in the laboratory. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any product or method. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.