Product Datasheet

SP&S Specialty Polymers and Services

LIQUIDWELD™ 10A/B

FAST SETTING, EPOXY PASTE ADHESIVE

LIQUIDWELD™ 10 A/B is a fast setting, two part epoxy paste adhesive that offers an easy to use one-to-one by volume or weight mix ratio and rapidly produces strong bonds. It cures rapidly even conditions as cold as 5ºC (41ºF) and still rapidly develops bond strength. LIQUIDWELD™ 10 develops strong bonds to wood, metal, plastic, tile, board stock, or cardboard, and many other materials.

Once cured, the adhesive is temperature, chemical, and environmentally resistant up to at least 140°F (60°C). The cured adhesive is machinable and can be sawn, ground, tapped, drilled, and sanded with conventional tools.

LIQUIDWELD™ 10 is ideal for repair and small assembly jobs. It often used for assembling metal, ceramic, glass, & stone items. It is also used for maintenance operations such as repairing or rebuilding machinery, rebuilding stripped screw holes, and repairing plastic and metal tooling. It an easy to use and fast option for many general plugging, sealing, and bonding applications.

APPLICATIONS & BENEFITS

- Maintenance & repair of metal, wood, etc.
- Filling, sealing and repairing leaks, cracks, etc
- Building, repairing and modifying tools, molds, & fixtures
- Small assembly jobs

HANDLING PROPERTIES	VALUE	TEST METHOD
LIQUIDWELD™ 10A		
Visual Appearance	Black paste	Visual
Density	1.48 g/cm³	ASTM E-201
Viscosity, Part A, at 25ºC	250,000 cP	ASTM D-2393
LIQUIDWELD™ 10B		
Visual Appearance	White paste	
Density	1.44 g/cm³	ASTM E-201
Viscosity, Part B, at 25ºC	150,000 cP	ASTM D-2393
Mixed Properties		
Mixed Viscosity	240,000 cP	ASTM D-2393
Mix Ratio	1A: 1B by weight and by volume	
Shelf Life	at least 2 years at room temperature (~ 25ºC)	
Sag Resistance:	No sagging at up to 0.3” in thickness	ASTM D-2730
Pot life (2 fl. Oz mass) at 25ºC	3-4 minutes	Gardner
Cure Schedules:	minimum handling strength within in 4 hours at 25ºC. Heat cures are not recommended because of the speed of reaction of this system.	

PHYSICAL PROPERTIES

	VALUE	TEST METHOD
Color	Gray	Visual
Shore D Hardness	85	ASTM D-2240
Tensile Strength, psi	3850 psi	ASTM D-638
Lap Shear Strength		ASTM D-1002

Development of Bond Strength vs. Temperature:

Cure time	Test Value at 25ºC (77ºF)
1 hour at 5ºC (41ºF)	1420 psi (10 MPa)
4 hours at 5ºC (41ºF)	1560 psi (11 MPa)
24 hours at 5ºC (41ºF)	1710 psi (12 MPa)
30 minutes at 25ºC (77ºF)	1700 psi (12 MPa)
1 hour at 25ºC (77ºF)	2100 psi (15 MPa)
4 hours at 25ºC (77ºF)	2800 psi (19.7 MPa)
24 hours at 25ºC (77ºF)	2840 psi (20 MPa)

Effect of Temperature on Bond Strength:

Test Temperature	Test Value
-64ºC (-40ºF)	1560 psi (11 MPa)
25ºC (77ºF)	2840 psi (20 MPa)
40ºC (104ºF)	2420 psi (17 MPa)
60ºC (140ºF)	1140 psi (8 MPa)

Effect of Tropical Aging at 49ºC and 95% relative humidity:

Aging Period	Test Value
Initial results	2840 psi
10 days	1710 psi
30 days	1000 psi

Effect of Heat Aging at 60ºC (140ºF):

Aging Period	Test Value
Initial results	2840 psi
10 days	2840 psi
30 days	2990 psi
60 days	2560 psi

NOTE: Typical Properties determined using LIQUIDWELD™ 10 A/B cured 24 hours at 25ºC cure and tested at 25ªC - unless otherwise stated. Values are based on laboratory or average production results – not for specification purposes.

SUGGESTED PROCESSING GUIDELINES

LIQUIDWELD™ 10 can be applied by brush, roller, squeegee, knife, or spatula. It is also available in a Dual syringe version that is just slight lower viscosity and as LIQUIDWELD™ 10DS suitable for meter-mix dispensing and can be supplied in dual syringes cartridges for use with static mixing nozzles.

For manual mixing, weigh Part A and Part B in the recommended ratio as accurately as possible into a clean mixing container. Always use weighing equipment having accuracy in proportion to the amounts being weighted. Blend by using a spatula or stirring stick for 1 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture.

Apply to clean, dry surfaces. For best adhesion, abrade the surface with a wire brush, scouring pad, steel wool or coarse sandpaper. After abrasion, clean the surface of any loose material and degrease with solvent or detergent to remove any contaminants. The material may then be applied with any suitable application method include brushes, spatulas, trowels, etc.

Optimal bond strengths are typically achieved with an adhesive bondline thickness of 3 – 5 mils, but larger gaps and thicker bondlines are possible with this adhesive without major loss of mechanical strength

PACKAGING AVAILABLE

This product is available in a wide range of kits including 1/2-pints, pints, quarts, ½-gallons, and 1-gallons.

It can be supplied in 4oz and 7oz squeeze tubes for easy dispensing of small volumes of material, or in dual syringe cartridges in 1:1 by volume mix ratios to eliminate the need for hand mixing.

Please call use with any special packaging requests, or for information on custom kitting.

STORAGE GUIDELINES

Store this material in a clean, cool and dry environment in its tightly closed original containers. Products may settle during storage and should be thoroughly re-mixed prior to use. Avoid extended exposure to high humidity. Tightly re-seal after use. If the recommended storage conditions are observed the products will have a minimum shelf-life of 24 months from the date of shipment.

HANDLING PRECAUTIONS

Mandatory and recommended industrial hygiene procedures should be followed whenever these products are being handled and processed. For additional information please consult the corresponding safety data sheets.

FIRST AID

In case of contact:
Skin – Immediately wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Destroy contaminated shoes and other articles made of leather.
Eyes – Immediately flush eyes with plenty of water for 15 minutes and get prompt medical attention.
Inhalation - Remove person to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

Ingestion - Do not induce vomiting. Dilute with plenty of water and contact physician immediately. Never give anything by mouth to an unconscious person.

DISCLAIMER

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Specialty Polymers & Services, Inc. (SP&S)
27822 Fremont Court **Tel: 661-294-1790**
Valencia, CA 91355 **Fax: 661-294-0640**
www.spolymers.com **info@spolymers.com**