



ES6228

Metal Bonding Epoxy Adhesive

DESCRIPTION

ES6228 is a thin paste viscosity epoxy adhesive designed to provide good bonds to metal surfaces. A unique feature of ES6228 is its ability to bond to slightly oily metal surfaces. This is useful in situations where the complete removal of residual mill oil on metal surfaces is not possible. The thin paste consistency of ES6228 wets the metal surface well for good adhesion. This viscosity also provides some gap filling capabilities, so “close fitting” joints are adequate, and matched-metal joints are not required.

ES6228 has a 1 to 1 mix ratio by weight or volume, for easy measuring. The white resin and black hardener combine to a smooth gray system that is easy to mix and apply. The cured material has very good properties, with high bond strength and elongation, for tough, durable assemblies.

PRODUCT SPECIFICATIONS

	ES6228 Part A	ES6228 Part B	ASTM Method
Color	White	Black	Visual
Viscosity,	Thin Paste	Thin Paste	D2392
Specific Gravity, gms./cc	1.32	1.30	D1475
Mix Ratio	100 : 100 By Weight or Volume		PTM&W
Pot Life, 4 fl.oz. Mass @ 77°F	2 hours		D2471

PACKAGING WEIGHTS

	Quart Kit	Gallon Kit	Pail Kit
ES Part A	2.25 lb.	9 lb.	45 lb.
ES Part B	2.25 lb.	9 lb.	45 lb.
Kit	4.5 lb.	18 lb.	90 lb.

DIRECTIONS FOR USE

PREPARATION: All surfaces to be bonded or patched must be free of dirt, oil and grease. The ability of ES6228 to bond to slightly oily surfaces should be considered as “insurance” for a good bond, rather than justification to avoid adequate surface preparation. The better the surface prep, the better the results! Sanding or roughening the area to be bonded increases the surface area and enhances the bond. See PTM&W Bulletin “Guidelines for Metal Surface Preparation” for more information.

MIXING: Measure out equal parts of ES6228 A and B, combine, and mix thoroughly until a uniform gray color and consistency is reached. Mix for at least 1 to 2 minutes, scraping the sides and bottom of the container to avoid leaving unmixed material that will cause soft spots in the cured material.

DIRECTIONS FOR USE. Continued

APPLICATION and CURING: Apply mixed material to roughened area of the parts to be bonded. Press surfaces firmly together and let set for 24 hours or more at 75oF. If necessary, place assembly in a jig or other device to prevent movement during initial curing time. Curing time is 24 to 36 hours at 75oF, or 2 hours at 140oF. The material to be bonded may be preheated to accelerate curing time, or very light heat can be applied after the parts have been bonded.

TYPICAL MECHANICAL PROPERTIES

	ES6228 A/B	ASTM Method
Mix Ratio, By Weight	100 : 100 By Weight or Volume	PTM&W
Color	Gray	Visual
Mixed Viscosity, centipoise	Thin Paste	D2393
Pot Life, 4 fl. Oz. Mass, @77°F	2 hours	D2471
Cured Hardness, Shore D	83 Shore D	D2240
Cure Time @ 77°F @ 140°F	24 - 36 hours 2 hours	
Specific Gravity, grams, cc	1.30	D1475
Tensile Strength, psi	9,500 psi	D638
Elongation at Break, %	8 %	
Compressive Strength, psi	12,000 psi	D695
Aluminum to Aluminum Tensile Lap Shear: @ 77°F @ 140°F	3,480 psi 3,150 psi	D1002

SAFETY and HANDLING

PTM&W epoxy products are made from raw materials carefully chosen to minimize or even eliminate toxic chemicals, and therefore offer the user high performance products with minimum hazard potential when properly used. Generally, the PTM&W epoxy resins and hardeners will present no handling problems if users exercise care to protect the skin and eyes, and if good ventilation is provided in the work areas. However, breathing of mist or vapors may cause allergenic respiratory reaction, especially in highly sensitive individuals. As such, avoid contact with eyes and skin, and avoid breathing vapors. Wear protective rubber apron, clothing, nitrile rubber gloves, face shield or other items as required to prevent contact with the skin. In case of skin contact, immediately wash with soap and water, followed by a rinse of the area with vinegar, and then a further wash with soap and water. The vinegar will neutralize the hardener and lessen the chances of long term effects. Use goggles, a face shield, safety glasses or other items as required to prevent contact with the eyes. If material gets into the eyes, immediately flush with water for at least 15 minutes and call a physician. Generally, keep the work area as uncluttered and clean as possible, and clean up any minor spills immediately to prevent accidental skin contact at a later time. Keep tools clean and properly stored. Dispose of trash and empty containers properly. Do not use any of these types of products until Material Safety Data Sheets have been read and understood.

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**PTM&W Industries, Inc.**

10640 S. Painter Avenue Santa Fe Springs, CA 90670-4092

562-946-4511 800-421-1518 FAX: 562-941-4773

Visit Us At: www.ptm-w.comSend Questions To: info@ptm-w.com