

## EP 3204A / EP3203B

Epoxy Adhesive For Bonding And Potting Fluoroplastics

### Typical Properties

(Not for specification purposes. All tests run at 25°C unless otherwise noted)

#### EP 3204A Properties: (formerly EP 3203-1A)

Appearance	Visual	Amber
Specific Gravity	ASTM-D-2393	1.16 g/cm <sup>3</sup>
Viscosity	ASTM-D-792	24,000 cP
Flash Point, closed cup	ASTM-D-92	>95°C (203°F)

#### EP 3203B Properties:

Appearance	Visual	Amber
Specific Gravity	ASTM-D-2393	0.97 g/cm <sup>3</sup>
Viscosity	ASTM-D-792	12,800 cP
Flash Point, closed cup	ASTM-D-92	>95°C (203°F)

#### Mix Ratio:

Parts by weight (volume) 100A:100B (100A : 120B)

#### Mixed Properties:

Initial Viscosity, 100g at 25°C	ASTM-D-792	14,200 cP
Pot life - 80 gram mass - 200 g.mass)	OC-WI-001	90 – 120 minutes 60 minutes

#### Recommended Cure Schedules:

24 hrs at 25°C or alternate 2-4 hours @ 65°C.

Please note: any cure schedule selected for use should be confirmed through testing as being appropriate for your particular processing methods and for your intended application.

#### Cured Properties (cured 7 days at 25°C)

Appearance	Visual	Translucent Amber
Specific Gravity	ASTM-D-792	1.09 g/cc
Shore Hardness	ASTM-D-2240	72D
Linear shrinkage	ASTM-D-2566	0.005 in
Cure shrinkage	ASTM-D-2566	0.30% by volume
Glass Transition Temp (T <sub>g</sub> )	Perkin Elmer Appl.Cast #20	50°C
Coefficient of Thermal Expansion(CTE) (per °C)	ASTM-E-381	110 x 10 <sup>-6</sup>
Water absorption (24 hrs @ 25°C)	ASTM-D-252	0.46%
Thermal Conductivity	ASTM D-2214	0.0005 cal/cm-sec-cm <sup>2</sup> °C
Recommended service temperature		-55-+105°C
Compressive strength	ASTM D-695	10,000 psi
Compressive modulus	ASTM D 695	225,000 psi
Flexural modulus	ASTM-D-790	210,000 psi
Tensile lap shear strength	ASTM-D-638	1600 psi
Tensile Elongation	ASTM-D-638	8%
Volume resistivity @ 25°C	ASTM-D-257	1.56x 10 <sup>10</sup> Ω-cm.
Dielectric Strength	ASTM-D-149	425 volts/mil
Dielectric Constant	ASTM-D-150	3.3 / 2.9
Dissipation Factor @60 kHz / @1MKHz		
Dissipation Factor @60 kHz / @1MHz	ASTM-D-150	0.01 / 0.025

EP 3204A / EP3203B is a 100% solids, unfilled, two- component, specialty epoxy resin adhesive. It is a modified version of the standard EP3203A/B formulation designed to give increase toughness, impact resistance, and elongation under tensile loading. It is recommended for bonding chemically etched or primed fluoroplastics; such as, Teflon<sup>®</sup> and Rulon<sup>®</sup>. It has a convenient one-to-one mix ratio by weight, and can be cured at room temperature to produce a tenacious, resilient, chemically resistant, and water resistant bond.

#### Suggested Applications:

- Bonding fluoroplastics
- Potting around fluoroplastic coated wires or components

#### Benefits:

- translucent
- Outstanding adhesive to chemically etched fluoroplastics
- Convenient mix ratio

#### Storage Guidelines:

Store this material in a clean, cool and dry environment in its tightly closed original container. Products which may crystallize during storage may be reliquified by warming the contents of the shipping containers, loosely covered, to 65°C for 1-4 hours. Allow contents to cool to at least 35°C before continuing. Avoid extended exposure to extreme humidity. If the recommended storage conditions are observed the products will have a minimum shelf-life of 12 months from the date of shipment.

#### Processing Guidelines:

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 hand for 2-3 minutes using a kneading motion. Scrape the bottom and sides of the mixing container carefully and frequently to produce a uniform mixture. Follow with power mixing, if possible, for an additional 2-3 minutes. Avoid excessive power mixing speeds which

could introduce large amounts of air or cause overheating of the mixture resulting in shorter working life.

Apply adhesive to all surfaces to be bonded and joined together. Only contact pressure is required for a high strength bond. Cure per the recommended schedule. In general, optimum properties are achieved if an initial cure at room temperature is followed with a heat cure. (ex. 4 hours at 25°C followed by 2-4 hours at 65°C)

#### 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 material safety data sheets.

#### Exotherm Warning:

#### Personal Hygiene:

##### EP 3204 Part A

**CAUTION!** May cause eye irritation. Prolonged or repeated skin contact may cause irritation, may cause allergic skin reaction. Harmful if inhaled or swallowed. Avoid contact with eyes, skin, or clothing. Wear eye protection and impervious gloves when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Keep containers closed when not in use. Use only with adequate ventilation. Do not take internally.

##### EP 3203 Part B

**WARNING!** Causes severe eye irritation and possible eye damage. Causes severe skin irritation and possible allergic skin reaction. Harmful if inhaled or swallowed. Do NOT get in eyes, on skin, or clothing. Wear chemical splash goggles and impervious gloves when handling. Wash skin and clothing thoroughly after handling. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep containers closed when not in use. Do NOT take internally.

#### 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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