

EpoPro X7102

Electrically Conductive Epoxy Adhesive

Typical Properties

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

Properties:

Appearance	Visual	Black paste
Specific Gravity	STM-D-1475	2.5 g/cm ³
Viscosity	ASTM-D-1824	80,000 cP
Spindle #/RPM (Model RVT)		14/10
Gel time at 150°C, 10 g	FTM D-2471	5 minutes
*Work life @ 25°C, 10 g	FTM-203	1-2 days
Flash Point, open cup	ASTM-D-92	>118°C (244°F)

*NOTE: EpoPro X7102 will not gel for at least 2 days in an environment of 25°C and less than 50% relative humidity. However, the usable work life depends on environmental conditions and the viscosity constraints of the particular application.

Recommended Cure Schedules:

1 hour @ 165°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

Lap shear, (aluminum substrate)	ASTM-D-1002	2000 psi
Die shear, (gold substrate)	MIL-STD-883-B	1500 psi
Glass Transition Temp (TMA)	Perkin Elmer Appl.Cast #20	143°C
Coefficient of Thermal Expansion (CTE) (per °C)	ASTM-E-381	
Alpha 1		50 x 10 ⁻⁶
Alpha 2		140 x 10 ⁻⁶
Weight loss, 300°C, TGA	MIL-STD-883C Method 5011	0.2
Thermal Conductivity	ASTM D-2214	>1.0 W/m-K
Volume resistivity at 25°C	ASTM-D-257	1 x 10 ⁻² Ω-cm
Outgassing	ASTM-E-595	
Total Mass Loss (TML)		0.2%
Collectible Condensable Volatile Materials (CVCM)		0.01%

EpoPro X7102 is a developmental premixed, frozen, one-component, nickel-filled epoxy adhesive designed for conductive bonding, grounding, EMI/RFI shielding and other applications where both thermal conductivity and electrical are required. This 100% solids system contains no solvents or diluents, this feature greatly reduces the likelihood of outgassing or void formation during curing and operational life. EpoPro X7102 has been formulated with extremely pure resins and fillers to provide the utmost in ionic purity for contact with microelectronic chips and circuitry.

Suggested Applications:

- Conductive bonding
- Grounding & EMI/RFI shielding

Benefits:

- Extremely high purity
- Meets requirements of MIL STD 883C Method 5011
- 100% solids system

Storage Guidelines:

EpoPro X7102 is considered non-hazardous for shipping purposes. However, this product is packaged in special cartons containing enough dry ice for a limited storage life of approximately 48-72 hours during shipment. Upon receipt, frozen syringes must be transferred to a freezer for storage at or below -40°C in order to ensure product shelf-life and reliability. Under these conditions the products will have a minimum shelf-life in unopened containers of 12 months from the date of shipment.

Processing Guidelines:

EpoPro X7102 is premixed, frozen and packed in dry ice for your convenience. Avoid handling dry ice or frozen syringes from shipping container with bare hands. The temperature may be -75°C or less and serious skin burns and permanent damage could occur. Always store frozen syringes at or below -40°C for best shelf life.

Remove syringe(s) from freezer storage and thaw to room temperature before use. Do not attempt to quick thaw by heating, as this will greatly reduce work life. Keep containers sealed while thawing and wipe condensation from the syringes prior to use. Typical thawing time for a 3cc syringe is approximately 15-30 minutes at 25°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.

Personal Hygiene:

EPOPRO X7102

WARNING! Causes eye irritation. Causes skin irritation and possible allergic skin reaction. Harmful if inhaled or if 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 container closed when not in use. Use only with adequate ventilation. 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:

IMPORTANT: The following supercedes Buyer's documents. **SELLER / MANUFACTURER MAKES NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No statements herein are to be construed as inducements to infringe any relevant patent. Under no circumstances shall Seller / Manufacturer be liable for incidental, consequential or indirect damages for alleged negligence, breach of warranty, strict liability, tort or contract arising in connection with the product(s). Buyer's sole remedy and Seller's sole liability for any claims shall be Buyer's purchase price. Data and results presented are based on controlled or laboratory work and must be confirmed by Buyer by testing for its intended conditions of use. The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended

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