Product Datasheet

EpoPro 7001 A/B

Silver Filled, Electrically & Thermally Conductive Epoxy Adhesive System

Typical Properties

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

Resin / A-side Properties:

Appearance	Visual	Silver-Gray liquid
Specific Gravity	ASTM D-792	3.3 g/cc
Viscosity	ASTM-D-2393	Soft Paste
Flash point, closed cup	ASTM D-92	248°C (478°F)

Hardener/ B-side Properties:

Appearance	Visual	Amber liquid
Specific Gravity	ASTM-D-1475	1.00 g/cc
Viscosity	ASTM-D-2393	2,000 cP
Flash Point, closed cup	ASTM D-92	150°C (302°F)

Mix Ratio:

Parts by weight 100A : 5B (100A:10B by volume)

Mixed Properties:

Initial Viscosity at 25°C	ASTM-D-2393,	120,000cP
Gel time, 10g at 25°C		120 minutes
Gel time, 10g at 65°C		20 minutes

Recommended Cure Schedules:

24-48 hrs at 25°C **or** 2 hours at 65°C **or** 1 hour at 95°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	Silvery-Gray
Specific Gravity	ASTM D-1475	3.1 g/cc
Shore Hardness	ASTM D-2240	85D
Moisture absorption 30 days @27°C	ASTM D-570	0.09%
Thermal conductivity	ASTM D-638	1.96 W/mK
Glass Transition Temp (Tg)	Perkin Elmer Appl. Cast #20	60°C
Coefficient of thermal expansion (ppm / °C)	ASTM E-381	
Alpha 1		92
Alpha 2		249
Volume. resistivity	ASTM D-257	0.003 Ω-cm
Lap Shear strength, AL-to-AL	ASTM D-1002	1,400 psi

EpoPro 7001A/B is a 100% solids silver filled epoxy adhesive that provides electrical and thermal conductivity, and excellent adhesion to most surfaces. The material is easy to process and ideal for many applications including lead attachment, forming conductive pathways, EMI and RFI shielding, and electrical grounding.

Suggested Applications:

- Electrical and Thermal Conductivity Bonds between metals, plastic and other materials
- EMI / RF protection & Static dissipitation
- Solder replacement / lead attachment
- Low temperature chip bonding

Benefits:

- Easy to mix & apply
- Electrical and Thermal Conductivity
- Resistant to moisture and humidity
- Excellent bond strength to metals & other materials
- High purity / low ionic contamination
- Low Outgassing

Outgassing @ 10^{-6} Torr

Total Mass loss	ASTM E-595	0.50%
Collectable condensable Volatile materials	NASA SP-R-0022A & ESA PSS-01-702	0.03%

Extractable Ionic Contaminants, ppm

Extraction Ratio:100 gm of deionozed water to 1g of sample. Sample Preparation: Cured on Teflon®; pulverized to –40/+60 mesh.

Test Method MIL STD 883C Method 5011

Ions	**24 hours @100°C**	**48 hours @ 121°C / 2 atm**
Sodium	<5	<10
Potassium	<2	<3
Ammonium	<1	<3
Iron	ND	ND
Chloride	<7	<10
Bromide	ND	ND

Storage Guidelines:

Store this material in a clean, dry environment in its tightly closed original container. These products are not considered temperature sensitive, but should ideally be stored at temperatures between 18 - 30°C (64-86°F). Under these conditions the products will have a minimum shelf-life of 12 months from the date of shipment. The 7001A may separate during shipment and storage, re-mix thoroughly in the original container prior to use.

This product can be supplied in pre-mixed and frozen syringes. When stored and shipped at -40C, pre-mixed and frozen syringes will have a minimum shelf-life of 6 months from date of shipment.

Processing Guidelines:

Mix the 7001A in its own container prior to use to re-disperse any settled material. Then weigh the desired amount of resin into a mixing container whose weight has been tared. Weigh the requided amount of hardener into mixing container with the resin. Mix thoroughly by means of mechanical mixer or manual stirring. Check for uniform color as a sign of complete mixing.

Vacuum de-airing is recommended to remove any entrapped air from the mixing procedure. To de-air place in a vacuum chamber an pull a vacuum of >29 inches of mercury. De-airing for several minutes until the majority of the air bubbles have broken. After mixing and de-gassing, apply the adhesive to surfaces to be bonded using a spatula or other tools. Ensuring that the surface to be bonded is clean and dry surfaces will help to produce the best bond strength.

To reduce the cure time, allow the material to gel at room temperature (about 2 hours) and then post-cured using and of the heat cures listed above.

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 7001A

CAUTION! May cause eye irritation. Prolonged or repeated skin contact may cause irritation, and may cause skin reaction. Harmful if inhaled, if swallowed. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Do not inhale mist. Use with adequate ventilation. For industrial use only.

EpoPro 7001B

CORROSIVE! Causes severe eye and skin burns and possible allergic skin reaction. Vapor irritating to eyes, skin and nasal mucous membranes. Harmful if swallowed. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Do not inhale mist. Use with adequate ventilation. For industrial use only.

First Aid

In case of contact:

Skin - Wash skin thoroughly with mild soap and water. Remove contaminated clothing and wash before reuse. Discard contaminated shoes and other articles made of leather

Eyes - Flush eyes with plenty of water for 15 minutes and get prompt medical attention.

Inhalation - Remove person to fresh air

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
Valencia, CA 91355
www.spolymers.com
info@spolymers.com

Tel: 661-294-1790
Fax: 661-294-0640