4225

Epoxy Conformal Coating

4225 is a 2-part epoxy conformal coating. It cures to a durable, tough, semi-flexible coating with an excellent finish.

4225 protects against harsh chemicals, humidity, corrosion, oil, dirt, thermal shock, and abrasion. It also prevents high-voltage arcing, short circuits, and static discharges. 4225 is a promising choice where extreme physical and chemical resistance are required.

Features and Benefits

- Certified IPC-CC-830C
- 2:1 mix ratio
- Ready to spray
- Excellent corrosion and chemical resistance
- HAPS Free
- Fluoresces under UV-A light
- Suitable for use with selective coating equipment

Available Packaging

Cat. No.	Packaging	Net Vol.	Net Wt.
4225-1.35L	2 Can Kit	1.35 L	1.27 kg
4225-2.7L	3 Can Kit	2.70 L	2.54 kg
4225-10.8L	3 Can Kit	10.80 L	10.20 kg

Contact Information

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Cured Properties

Resistivity	1.8 x 10^{12}	Ω·cm
Dielectric Strength	566	V/mil
Dielectric Withstand Voltage	>1 500	V
Insulation Resistance	1 x 10^{12}	Ω
Moisture Insulation Resistance	1 x 10^{12}	Ω
Glass Transition Temperature (T_g)	42	˚C
CTE Prior T_g	210	ppm/˚C
CTE After T_g	245	ppm/˚C
Service Temperature Range	-40–140	˚C

Usage Parameters

Working Life @22 °C	4	h
Dry Time To Handle (1 coat)	7	h
Minimum Recoat Time	15	min
Recommended Film Thickness	25–50	µm
Theoretical Coverage @25 µm	162 440	cm^2/L

Uncured Mixed Properties

Viscosity @25 ˚C	20	cP
Density	0.95	g/mL
Percent Solids	41	%
Shelf Life	2	y
Calculated VOC	698	g/L

Application Instructions

Read the product SDS before using this product (downloadable at www.mgchemicals.com).

Recommended Preparation

Clean the substrate with Isopropyl Alcohol, MG #824, so the surface is free of oils, dust, and other residues.

Mixing

Stir contents of the part A and part B container thoroughly. Measure 2 parts of A and 1 part of B by volume. Pour both parts into a mixing container while stirring. Ensure all contents are transferred. Thoroughly mix parts A and B together.

Brush

4225 can be applied by brush for rework or touch-ups. Thinning is not required for most brush applications. Desired coating thickness can be achieved in a single application. Applied coating can be cured immediately.

Manual Spray Guns

Use a standard fluid nozzle gun with a minimum tip diameter of 0.8–1.0 mm. The settings listed below are recommendations; however, performance will vary with different brands:

Inlet	Air flow	Air cap
20–40 psi	10–15 SCFM	8–10 psi

1. Stir the mixed coating gently but thoroughly.
2. Spray a test pattern to ensure good flow quality.
3. Tilt the board at 45° and spray a thin even coat from a distance of 20–25 cm (8–10 in). Use spray-and-release strokes with an even motion to avoid paint buildup in one spot. Start and end each stroke off the surface.
4. Wait 15 min between coats to avoid trapping solvent.
5. Rotate the board 90° and spray again to ensure good coverage.
6. Apply additional coats until desired thickness is achieved (go to step 2).
7. Let dry 7 hours at room temperature before applying heat cure.
8. Close the part A and B containers tightly between uses to prevent skinning.

Dip Coat

Use a Ford or Zahn cup to monitor the viscosity of the coating, as the solvent will evaporate over time.

1. Hang the PCB on a dipping arm.
2. Slowly lower the PCB into a tank and leave immersed in the mixed coating for 2 min to allow penetration.
3. Slowly withdraw the PCB from the tank at a rate of approximately 6" per minute.
4. Let dry for 15 min before applying additional coats or 7 hours before heat cure.

Selective Coating

For higher volume applications, coating can be applied via selective coating equipment. A fluid nozzle ranging from 0.5 mm to 1.0 mm diameter and 5–10 psi fluid pressure is recommended depending on nozzle size. Thin the coating to adjust viscosity to the level appropriate for the valve being used.

Cure Instructions

The product will cure at room temperature after 48 hours. After letting sit for 7 hours, cure the coating in an oven at one of these time/temperature options:

Temperature	65 °C	80 °C	100 °C
Time	4 hours	2 hours	40 minutes

Clean-up

Discard unused mixed epoxy and clean spray system and equipment with MEK or MG #434 Acetone.

Storage and Handling

Store between -5 and 40 ˚C in a in a dry area, away from sunlight (see SDS).

Disclaimer

This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.