422B Liquid

Silicone Modified Conformal Coating

422B is a 1-part, acrylic-silicone blend conformal coating that cures to a durable, flexible and smooth finish. It is easy to apply and can be handled in only 8 minutes. It may be removed with appropriate strippers or soldered through for repair or rework.

422B is designed for applications where both high service temperature and flexibility are required. It puts minimum stress on components during thermal cycling, making it ideal for applications that involve a wide temperature range. It provides strong protection against moisture, corrosion, fungus, dirt, dust, thermal shock, short circuits, high-voltage arcing, and static discharge.

Features & Benefits

Certified UL 94 V-0 (File# E203094)

Maximum service temperature of 200 °C

Fluoresces under UV-A light

Suitable for use with selective coating equipment

Excellent corrosion resistance

Cure Instructions

Allow to dry at room temperature for 48 hours, or after letting sit for 8 minutes, cure the coating in an oven for 20 min @ 65 ˚C.

Storage and Handling

Store between -5 and 27 ˚C in a in a dry area, away from sunlight (see SDS).

Available Packaging

Part #	Packaging	Net Vol.	Net Wt.
422B-55ML	Bottle	55 mL	49.4 g
422B-1L	Can	945 mL	849 g
422B-4L	Can	3.78 L	3.39 kg
422B-20L	Pail	18.9 L	16.9 kg
422B-200L	Drum	200 L	179 kg

422B Liquid

Liquid Properties

Binder System	Silicone	—
Dry Time to Handle	8 min (1 coat) 15 min (2 coats)	—
Minimum Recoat Time	3 min	—
Recommended Film Thickness	25–75 µm	—
Density	0.9 g/mL	ASTM D1475
Viscosity @ 25 ˚C	10 cP	Brookfield Engineering labs Inc. IPCTM-65- Method 2.4.24.4
Percent Solids	28%	—
Theroretical Coverage @ Recommended Thickness	70 000 cm^2/L	Calculated
Calculated VOC	289 g/L	—
Shelf Life	5 y	—

Cured Properties

UL	94 V-0	—
Color	Clear	—
Resistivity	1.2 x 10^{15} Ω·cm	ASTM D257
Breakdown Voltage Dielectric Strength	>1 500 V 1 056 V/mil	ASTM D149
Dielectric Constant @ 1 MHz Dissipation Factor @ 1 MHz	1.99 0.012	ASTM D150
Glass Transition Temperature (T_g)	29 ˚C	ASTM E1545
Coefficient of Thermal Expansion (CTE)	275 ppm/˚C (Prior T_g)	ASTM E831
Service Temperature Range	-40–200 ˚C	—

422B Liquid

Application Instructions

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

Recommended Preparation

Clean the substrate with MG #824 99.9% Isopropyl Alcohol, so the surface is free of oils, dust, and other residues.

Recommended Thinner

When thinning is required, use MG #435 Thinner.

Brush

This product 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. Dilute 1-part coating to 1-part thinner (MG #435 Thinner). Adjust ratio if required.
2. Stir the coating gently, but thoroughly.
3. Spray a test pattern to ensure good flow quality.
4. 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.
5. Wait 3 min between coats to avoid trapping solvent.
6. Rotate the board 90° and spray again to ensure good coverage.
7. Apply additional coats until desired thickness is achieved (go to step 3).
8. Let dry for 8 min at room temperature before applying heat cure.

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 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 3 min before applying additional coats or 8 min before heat cure.

Selective Coating

For higher volume applications, coating can be applied via selective coating equipment. The settings listed below are recommendations and performance will vary with different brands.

Settings	PVA	Nordson Asymtek
Platform	PVA 650	SL 940E
Valve	FCM100	SC 280N
Dilution	None	None
Air Pressure	Not available	80 psi
Fluid Pressure	17 psi	23 psi
Dispense Height	10 mm	12.7 mm
Pass Width	8 mm	Not available
Coating Speed	400 mm/s	381 mm/s

Clean-up

Clean spray system and equipment with MEK or acetone, MG #434.