419D-P Pen

Overcoat Pen

419D-P pen applies an acrylic coating that cures to a durable, flexible and smooth finish. It functions as both a solder resist and a conformal coating. It is easy to apply and can be handled in 10 minutes. It may be removed with appropriate strippers, or soldered through for repair or rework.

419D-P is used to repair scratches and chips in permanent solder masks, to touch up areas missed during conformal coating applications, or to repair conformal coating after replacing isolated components. It can also be used to protect conductive pen traces.



Features & Benefits

Protects PCBs from solder drips

Prevents shorting and arcing

Protects electronics from moisture, corrosion,fungus, dirt, and static discharges

Comes in a variety of colors—black, clear, green, and white

No hazardous air pollutants—free of toluene, xylene and MEK

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.

1. Shake pen vigorously until ball moves freely inside.
2. Hold pen at an angle and depress tip against surface.
3. Draw pen across surface while gently squeezing barrel.
4. Let dry 10 min before handling or heat cure.
5. Replace cap and store tip-up after use.

Available Packaging

Part #	Packaging	Net Vol.	Net Wt.
419D-P-BK	Black pen	5 mL	4.63 g
419D-P-CL	Clear pen	5 mL	4.63 g
419D-P-GR	Green pen	5 mL	4.63 g
419D-P-WH	White pen	5 mL	4.63 g

Cure Instructions

Allow to dry at room temperature for 24 hours, or after letting sit for 10 min, cure the coating in an oven for 1 h @ 65 ˚C.

Storage and Handling

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

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Liquid Properties

Binder System	Acrylic	—
Dry Time to Handle	10 min	—
Minimum Recoat Time	3 min	—
Recommended Film Thickness	25–75 µm	—
Density	0.9 g/mL	ASTM D1475
Viscosity @ 25 ˚C	100 cP	Brookfield Engineering labs Inc. IPCTM-65- Method 2.4.24.4
Percent Solids	30%	—
Theroretical Coverage @ Recommended Thickness	≤570 cm^2/pen	Calculated
Calculated VOC	654 g/L	—
Shelf Life	5 y	—

Cured Properties

Solderability	Excellent	—
Chemical Resistance	Poor	—
Resistivity	4.6 x 10^{14} Ω·cm	ASTM D257
Breakdown Voltage Dielectric Strength @	>1 500 V 1 000 V/mil	ASTM D149
Dielectric Constant @ 1 MHz Dissipation Factor @ 1 MHz	2.9 0.004	ASTM D150
Insulation Resistance	1 x 10^{13} Ω·cm	IPC-TM-650 2.5.7.1
Moisture Insultation Resistance	1 x 10^{12} Ω·cm	IPC-TM-650 2.6.3.4
Glass Transition Temperature (T_g)	27 ˚C	ASTM E1545
Coefficient of Thermal Expansion (CTE)	72 ppm/˚C (Prior T_g)	ASTM E831
Service Temperature Range	-65–125 ˚C	—

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.

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