

# 419D-P



## 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 and 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—blue, black, clear, green, and white
- No hazardous air pollutants—free of toluene, xylene and MEK

## Available Packaging

| Cat. No.  | Packaging | Net Vol. | Net Wt. |
|-----------|-----------|----------|---------|
| 419D-P-BK | Black pen | 5 mL     | 4.63 g  |
| 419D-P-BL | Blue 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  |

## Contact Information

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## Cured Properties Without Colorants

|  |                             |
|--|-----------------------------|
| Resistivity                                    | 4.6 x 10 <sup>14</sup> Ω·cm |
| Dielectric Strength                            | 1 000 V/mil                 |
| Dielectric Withstand Voltage                   | >1 500 V                    |
| Insulation Resistance                          | 1 x 10 <sup>13</sup> Ω      |
| Moisture Insulation Resistance                 | 1 x 10 <sup>12</sup> Ω      |
| Dielectric Constant @ 1 MHz                    | 2.85                        |
| Dissipation Factor @ 1 MHz                     | 0.004                       |
| Glass Transition Temperature (T <sub>g</sub> ) | 27 °C                       |
| CTE prior T <sub>g</sub>                       | 72 ppm/°C                   |
| Service Temperature Range                      | -65–125 °C                  |

## Usage Parameters

|                              |                           |
|------------------------------|---------------------------|
| Dry Time To Handle           | 10 min                    |
| Minimum Recoat Time          | 3 min                     |
| Recommended Film Thickness   | 25–75 μm                  |
| Theoretical Coverage @ 25 μm | ≤570 cm <sup>2</sup> /pen |

## Uncured Properties Without Colorants

|                   |           |
|-------------------|-----------|
| Viscosity @ 25 °C | 100 cP    |
| Density           | 0.92 g/mL |
| Percent Solids    | 30 %      |
| Shelf Life        | 5 y       |
| Calculated VOC    | 654 g/L   |

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## Safety Data Sheet

Read the product SDS before using this product (downloadable at [www.mgchemicals.com](http://www.mgchemicals.com)).

## Recommended Preparation

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

## Application Instructions

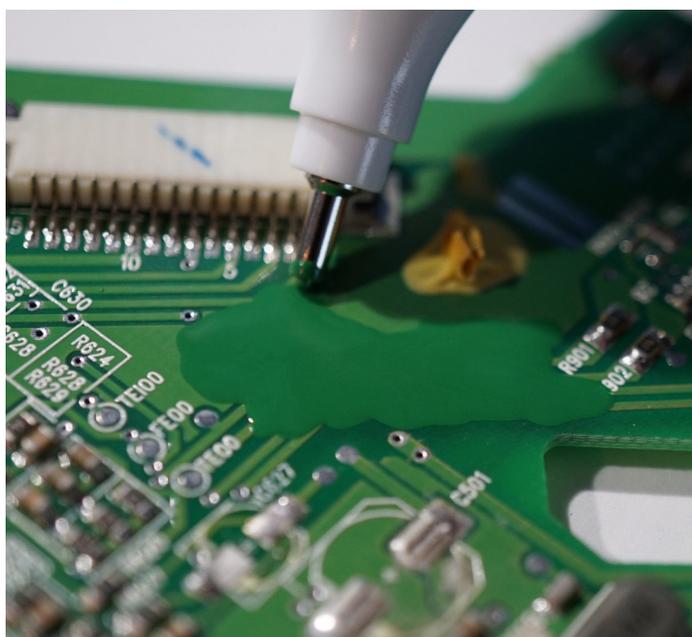
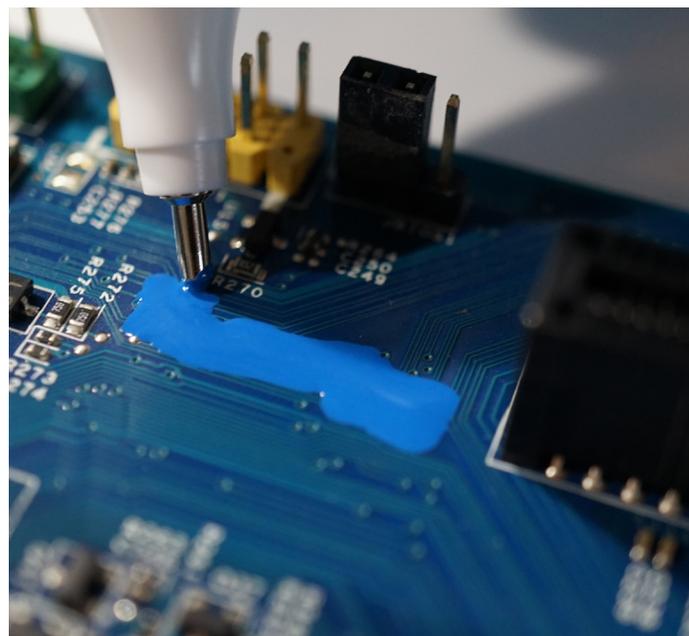
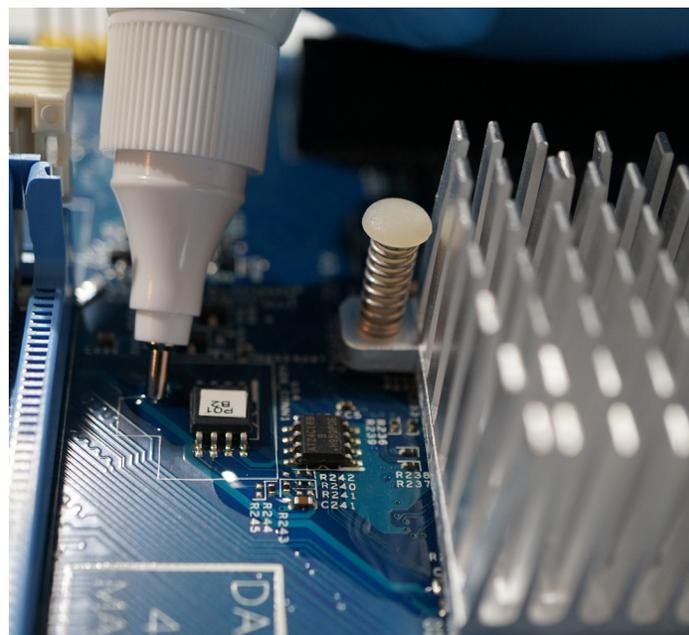
1. Shake pen vigorously until ball moves freely inside.
2. Hold pen at an angle and depress tip against surface.
3. Draw pen across surface while gently squeezing barrel.
4. Let dry 10 min before handling or heat cure.
5. Replace cap and store tip-up after use.

## 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 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.