# 4228A Liquid



# **Red Insulating Varnish**

4228A is an easy-to-use, HAPs-free, 1-part red insulating varnish that insulates high-voltage parts such as motor windings and transformer coils against arcing and discharge. This dielectric coating cures at room temperature and adheres well to many substrates, including metals, glass and most plastics.

The coating's low viscosity makes it easy to coat parts with intricate geometries, and the distinct red color helps operators inspect coverage.



#### **Features & Benefits**

- · Excellent dielectric properties
- Fast dry time
- · HAPs-free
- Adheres well to metals, glass and many plastics
- Provides excellent protection against moisture

## **Available Packaging**

Cat. No.	Packaging	Net Vol.	Net Wt.
4228A-55ML	Bottle	55 mL	57.2 g
4228A-225ML	Can	225 mL	234 g
4228A-1L	Can	850 mL	884 g
4228A-4L	Can	3.60 L	3.74 kg

### **Cured Properties**

Dielectric Strength	3 700 V/mil
Service Temperature	-40-180 °C

## **Usage Parameters**

Dry to Touch	1 h
Recoat Time	10 min
Recommended Film Thickness	25-38 µm
Theoretical Coverage @ 25 µm	130 ft <sup>2</sup> /L
(based on 65% transfer efficiency)	

### **Contact Information**

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## **Uncured Properties**

Viscosity @ 25 °C	800	сР
Density	1.0	g/mL
Percent Solids	55	%
Shelf Life	5	У
Calculated VOC	561	g/L

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### **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.

#### **Recommended Thinner**

When thinning is required, use MG #4354 Thinner 4.

#### **Brush**

4228A 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 the coating with Thinner 4, 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-andrelease strokes with an even motion to avoid paint buildup in one spot. Start and end each stroke off the surface.
- **5.** Wait 10 min before applying another coat, 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 30 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.
- 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 4 hours before applying additional coats or 40 minutes before heat cure.

#### **Cure Instructions**

Allow to dry at room temperature for 10 hours, or after letting sit for 30 minutes, cure the coating in an oven at 80 °C for 2 hours.

### Clean-up

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

## **Storage and Handling**

Store between -5 and 25 °C 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.