

# 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

- Material Group I (CTI  $\geq 600$  V, PLC=0)
- 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

## Contact Information

MG Chemicals, 1210 Corporate Drive  
Burlington, Ontario, Canada L7L 5R6

Email: [support@mgchemicals.com](mailto:support@mgchemicals.com)

Phone: North America: +1(800)-340-0772

International: +1(905)-331-1396

Europe: +44(1663) 362888

## Cured Properties

Dielectric Strength	3 700 V/mil
Comparative Tracking Index (CTI)	600 V
Service Temperature	-40–180 °C

## Usage Parameters

Dry to Touch	1 h
Recoat Time	10 min
Recommended Film Thickness	25–38 $\mu\text{m}$
Theoretical Coverage @ 25 $\mu\text{m}$ (based on 65% transfer efficiency)	130 $\text{ft}^2/\text{L}$

## Uncured Properties

Resin Type	Acrylic, modified alkyd
Viscosity @ 25 °C	800 cP
Density	1.0 g/mL
Percent Solids	55 %
Calculated VOC	561 g/L

# 4228A Liquid



## Application Instructions

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.

## 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-and-release 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.
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 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.