

# 4228 Liquid



## Red Insulating Varnish

4228 is a highly insulating coating with excellent arc and corona resistance. This red, low viscosity, one part varnish coating is easy to use and adheres well to many substrates.

The 4228 insulates transformers, coils, motor windings, and various electric generator parts against arc and corona. As well, it protects these parts from corrosion and moisture.



## Features & Benefits

- Insulation Class H—Suitable for service up to 180 °C
- Excellent oil and moisture resistant
- Excellent finish—tough, flexible, glossy, and durable red coat
- Good adhesion
- Good water and salt water resistance

## Available Packaging

Cat. No.	Packaging	Net Vol.	Net Wt.
4228-55ML	Bottle	55 mL	58.3 g
4228-255ML	Can	255 mL	238 g
4228-1L	Can	850 mL	901 g
4228-4L	Can	3.60 L	3.81 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 (dry)	3 000 V/mil
(wet)	1 500 V/mil
Service Temperature	-40–180 °C

## Usage Parameters

Dry to Touch	30 min
Recoat Time	4 h
Recommended Film Thickness	25–38 µm
Theoretical Coverage @ 25 µm (based on 65% transfer efficiency)	130 ft <sup>2</sup> /L

## Uncured Properties

Viscosity @ 25 °C	590 cP
Density	1.1 g/mL
Percent Solids	52 %
Shelf Life	5 y
Calculated VOC	514 g/L

# 4228 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

4228 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 4 hours 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 24 hours, or after letting sit for 30 minutes, cure the coating in an oven at 80 °C for 1 hour.

## 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.