

## Description

Our 4226 Super Corona Dope is a highly insulating coating with excellent arc and corona resistance. This low viscosity, one part varnish coating is easy to use and adheres well to many substrates.

## Applications & Usages

The 4226 insulates transformers, coils, motor windings, and various electric generator parts against arc and corona. As well, it protects these parts from corrosion and moisture.

## Benefits

- **High dielectric strength**—4100 V/mil (dry); 3000 V/mil (wet)
- **Excellent moisture resistant**
- **Excellent finish**—tough, flexible, glossy, and durable transparent coat
- **Good Adhesion**

## Curing & Work Schedule<sup>a)</sup>

| <i>Properties</i>              | <i>Value</i>     |
|--------------------------------|------------------|
| Tack Free                      | 10 min           |
| Recoat Time                    | 4 h              |
| Dry to Handle                  | 20 min           |
| Full Cure (at 25 °C [77 °F])   | 2 to 3 day       |
| Full Cure (at 80 °C [176 °F])  | 1 h              |
| Full Cure (at 110 °C [230 °F]) | 30 min           |
| Storage Temp. <sup>b)</sup>    | 25 °C<br>[104°F] |
| Shelf life <sup>c)</sup>       | 5 years          |

a) Cure times assume a thickness of 1 mil and standard conditions.

b) The product should not be exposed to direct sunlight.

c) After date of shipment

## Service Ranges

| <i>Properties</i>                                     | <i>Value</i>  |
|---|---|
| Service Temperature                                   | -40 to +180 °C<br>[-40 to +356 °F]                  |
| Max coverage <sup>d)</sup> per 1L for 38 µm [1.5 mil] | < 78 000 cm <sup>2</sup><br>[< 84 ft <sup>2</sup> ] |
| Recommended thickness                                 | 25 to 38 µm<br>[1 to 1.5 mil]                       |

d) Estimated based on dip method and assuming a 90% transfer efficiency. Actual value will be somewhat less than quoted.

## Chemical Components

| <b>Name</b>          | <b>CAS Number</b>  |
|----------------------|--------------------|
| Modified Alkyd Resin | <i>proprietary</i> |
| Xylene               | 1330-20-7          |
| Ethyl Benzene        | 100-41-4           |

## Properties of Cured 4226

| <i>Physical Properties</i>                     | <i>Method</i> | <i>Value</i>               |
|--|---------------|----------------------------|
| Color  | Visual        | Clear                      |
| Moisture resistance                            |               | Excellent                  |
| Oil resistance                                 | ASTM          | Fair                       |
| <i>Electric Properties</i>                     | <i>Method</i> | <i>Value</i>               |
| Dielectric strength @2 mil (dry) <sup>a)</sup> | ASTM D149     | 4100 V/mil                 |
| @2 mil (wet) <sup>b)</sup>                     | ASTM D149     | 3000 V/mil                 |
| Insulation Class <sup>c)</sup>                 |               | 130(B)<br>150(F)<br>180(H) |

a) After conditioning in air at 25 °C for 24 h; coat thickness 50 µm

b) After conditioning in water at 25 °C for 24 h; coat thickness 50 µm

c) Meets UL EIS standards

## Properties of Uncured 4226

| <i>Physical Property</i>   | <i>Method</i> | <i>Value</i>           |
|----------------------------|---------------|------------------------|
| Viscosity at 25 °C [77 °F] | ASTM D2196    | 105 cP [0.105 Pa·s]    |
| Solids Content (w/w)       |               | 35% ±1%                |
| Density                    |               | 0.926 g/ml ±0.010 g/mL |
| Flash Point                | ASTM D93      | 27 °C [81 °F]          |
| Odor                       | —             | aromatic               |

a) Brookfield viscometer with spindle LV1

## Compatibility

**Adhesion**—The 4226 insulation coating adheres well to copper and steel; however, it is not compatible with contaminants like water, oil, and greasy flux residues that may affect adhesion. If contamination is present on the substrate, clean the surface first.

### 838 Adherence Compatibility

| Substrate | Note      |
|-----------|-----------|
| Copper    | Excellent |
| Steel     | Excellent |

## Health, Safety, and Environmental Awareness

Please see the 4226-Liquid **Material Safety Data Sheet** (MSDS) for more details on transportation, storage, handling and other security guidelines.

**Environmental Impact:** The 4226 formulation has a volatile organic content of 65.0% (w/w) [or 602 g/L]. The coating is RoHS compliant.

**Health and Safety:** The liquid is flammable and should be kept away from flames and other ignition sources. As with most paint materials, avoid breathing in fumes or direct contact with the material. Solvents therein can cause irritation and other symptoms like headaches, pain, as well as having long term exposure effects.

Use in the open air, in fume hoods, or in well ventilated area. For short or long term (8 hours) at levels of exposures exceeding 100 ppm of xylene or ethyl benzene, use NIOSH approved respirator with organic vapor cartridges rated for this order of concentrations.

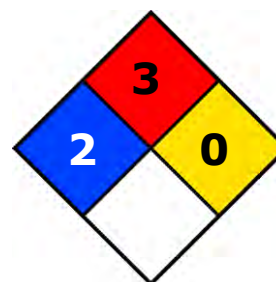
Wear safety glasses or goggles and disposable gloves to avoid exposures. Wash hands thoroughly after use.

The cured coating presents no known hazard.

### HMIS® RATING

|                             |   |          |
|-----------------------------|---|----------|
| <b>HEALTH:</b>              | * | <b>2</b> |
| <b>FLAMMABILITY:</b>        |   | <b>3</b> |
| <b>PHYSICAL HAZARD:</b>     |   | <b>0</b> |
| <b>PERSONAL PROTECTION:</b> |   |          |

### NFPA® 704 CODES



*Approximate HMIS and NFPA Risk Ratings Legend:*

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

## Application Instructions

Dip or spray application are possible. Follow the procedure below for best results. The product may be diluted with xylene or other similar low cost solvents.

### Prerequisites

- Ensure that the substrate is free of scratches, gouges, and raised metal burrs
- Ensure surface to be coated is clean: oil free, dust free, and rust free

## To coat by dipping method

1. Hang PCB on a dipping arm
2. Lower board in dip tank
3. Immerse at **least 12" below the top to minimize entrapments**
4. Let dwell for 2 minutes to allow for penetration
5. Withdraw slowly at about 10 cm/min [5 in/min]
6. Let air dry 4 h before recoat to avoid solvent entrapment
7. Repeat steps 1 to 6 if higher thickness required

**NOTE:** Dipping in undiluted 4226 typically yields 1 to 1.5 mil dry film thickness per coat.

## To coat by spray gun method

1. Mix thoroughly, and spray a test pattern.  
This step ensures good flow quality and helps establish appropriate distance to avoid runs.
2. At a distance of 20 to 25 cm (8 to 10 inches), spray a thin and even coat onto the part. For best results, use spray-and-release strokes with an even motion to avoid excess paint in one spot.
3. If additional coats are required, rotate the part 90° to ensure good coverage.
4. Wait at least 4 hours at room temperature before recoat. The delay avoids trapping solvent between coats.
5. Apply additional coats until desired thickness are achieved. (Go to Step 1)

**NOTE:** Dilution with a thinner may be required.

**ATTENTION:** Using excessive coat thickness can cause defects. Do not heat cure between coats because this causes wrinkling.

## To air dry the electric insulation coating

- Let air dry 72 hours

While this product can be air dried, it is highly recommended that you bake the product for optimal dielectric properties.

## To heat cure

- Wait 1 h or more at room temperature for the coating to dry
- Put in an oven 110 °C [230 °F] for 30 min.  
OR
- Put in an oven at 80 °C [176 °F] for 60 min.

## Packaging and Supporting Products

| Cat. No.         | Form   | Net Volume        | Net Weight       | Shipping Weight                           |
|------------------|--------|-------------------|------------------|---|
| <b>4226-55ML</b> | Liquid | 55 mL    2 oz     | 53 g    0.12 lb  | 0.3 kg <sup>a)</sup> 0.6 lb <sup>a)</sup> |
| <b>4226-1L</b>   | Liquid | 950 mL    1 quart | 0.9 kg    2.0 lb | 1.1 kg    2.4 lb                          |
| <b>4226-4L</b>   | Liquid | 4 L    1 gal      | 3.5 kg    7.8 lb | 3.8 kg    8.4 lb                          |

a) 4226-55ML shipping weight is for a pack of 5 bottles



ISO 9001 Registered Quality System,  
Burlington, Ontario, Canada QMI File # 004008

# Super Corona Dope 4226 Technical Data Sheet

4226-Liquid

## Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at [www.mgchemicals.com](http://www.mgchemicals.com).

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## Warranty

*M.G. Chemicals Ltd.* warrants this product for 12 months from the date of purchase by the end user. *M.G. Chemicals Ltd.* makes no claims as to shelf life of this product for the warranty. The liability of *M.G. Chemicals Ltd.* whether based on its warranty, contracts, or otherwise shall in no case include incidental or consequential damage.

## Disclaimer

This information is believed to be accurate. It is intended for professional end users having the skills 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.