

RED INSULATING VARNISH

4228-LIQUID

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** Red Insulating Varnish**SDS Code:** 4228-Liquid**Related Part #** 4228-55ML, 4228-225ML, 4228-945L, 4228-1L, 4228-4L, 4228-1G

### Recommended Use and Restriction on Use

**Use:** High voltage protective coating for electronic and electrical devices**Uses Advised Against:** Not available

### Details of Manufacturer or Importer

**Manufacturer**

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

MG Chemicals (Head Office)  
9347-193 Street  
Surrey, British Columbia V4N 4E7  
CANADA

**☎** +1-800-340-0772  
**FAX** +1-800-340-0773  
**E-MAIL** [support@mgchemicals.com](mailto:support@mgchemicals.com)  
**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)

**☎** +1-905-331-1396  
**FAX** +1-905-331-2682  
**E-MAIL** [info@mgchemicals.com](mailto:info@mgchemicals.com)

**E-MAIL** (Competent Person): [sds@mgchemicals.com](mailto:sds@mgchemicals.com)

### Emergency Phone Number

**For hazardous material incidents ONLY**—leaks, spills, fires, exposures or accidents  
USA or CANADA: Call CHEMTREC ☎: **+1-800-424-9300**



**For emergencies involving dangerous goods;** Collect 24/7  
CANADA: Call CANUTEC ☎: **+1-613-996-6666** or **\*666** on cellular phones

**RED INSULATING VARNISH****4228-LIQUID****Section 2: Hazard(s) Identification****Classification of Hazardous Chemical****GHS Categories**

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	3	Warning	Flame
Carcinogenicity	2	Warning	Health
Specific Target Organ Toxicity    Repeated Exposure	2	Warning	Health
Sensitization    Skin	1	Warning	Exclamation
Skin Irritation	2	Warning	Exclamation
Eye Irritation	2	Warning	Exclamation
Specific Target Organ Toxicity    Single Exposure	3	Warning	Exclamation
Hazardous to Aquatic Environment    Acute	2	none	none


*Note:* The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories do not allow comparisons between classes.

**Label Elements**

<b>Signal Word</b>	<b>WARNING</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H226: Flammable liquid and vapor
	H373: May cause damage to liver, kidney, and inner ear through prolonged or repeated exposure H351: Suspected of causing cancer

*Section continued on the next page*

**RED INSULATING VARNISH****4228-LIQUID***Continued...*

<b>Pictograms</b>	<b>Hazard Statements</b>
	H317: May cause an allergic skin reaction H315: Causes skin irritation H319: Causes serious eye irritation H335: May cause respiratory irritation H336: May cause dizziness or drowsiness
No Symbol Mandated	H401: Toxic to aquatic life
<b>Prevention</b>	<b>Precautionary Statements</b>
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take action to prevent static discharges.
P233	Keep container tightly closed.
P260	Do not breathe mist/vapors/spray.
P271	Use only outdoors or in well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection.
P273	Avoid release to the environment.
<b>Response</b>	<b>Precautionary Statements</b>
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P304 + P340, P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.

*Section continued on the next page*

**RED INSULATING VARNISH**
**4228-LIQUID**
*Continued...*

<b>Response</b>	<b>Precautionary Statements</b>
P303 + P361 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of water/shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
<b>Storage</b>	<b>Precautionary Statements</b>
P403 + P235	Store in well-ventilated place. Keep cool.
P405	Store locked up.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents/container in accordance to local/regional/international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

**Section 3: Composition/Information on Ingredients**

<b>CAS #</b>	<b>Chemical Name</b>	<b>%(weight)</b>
1330-20-7	xylene (mixed isomers)	42%
100-41-4	ethylbenzene	6%
1317-61-9	iron (III) oxide	2%
96-29-7	butan-2-one oxime <sup>a)</sup>	0.8%

a) Also known as MEKO

**RED INSULATING VARNISH****4228-LIQUID****Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statement</i>
<b>IF INHALED</b>	P304 + P340, P312, P308 + P313
<b>Immediate Symptoms</b>	<i>irritation, headache, drowsiness, dizziness, cough, nausea</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing.  If feeling unwell: Call a POISON CENTRE/doctor.  If exposed or concerned: Get medical advice/attention.
<b>IF ON SKIN (or hair)</b>	P303 + P361 + P352, P333 + P313, P363
<b>Immediate Symptoms</b>	<i>irritation, dry skin, redness</i>
<b>Response</b>	Take off immediately all contaminated clothing. Wash with plenty of water/shower.  If skin irritation or rash occurs: Get medical advice/attention.  Wash contaminated clothing before reuse.
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>irritation, redness, pain</i>
<b>Response</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  If eye irritation persists: Get medical advice/attention.
<b>IF SWALLOWED</b>	P301 + P330, P331, P314, P308 + P313
<b>Immediate Symptoms</b>	<i>irritation, burning sensation, abdominal pain, dizziness, drowsiness, nausea</i>
<b>Response</b>	Do NOT induce vomiting. Rinse mouth.  If you feel unwell: Get medical attention.  If exposed or concerned: Get medical advice/attention

**RED INSULATING VARNISH****4228-LIQUID****Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.  Use water spray to cool containers.
<b>Specific Hazards</b>	The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion.  Prevent fire-fighting wash from entering waterway or sewer system.
<b>Combustion Products</b>	Produces carbon oxides (CO, CO <sub>2</sub> )
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See personal protection recommendations in Section 8.
<b>Precautions for Response</b>	Do not breathe the mist/spray/vapors. Remove or keep away all sources of extreme heat or open flames.
<b>Environmental Precautions</b>	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
<b>Containment Methods</b>	Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite).
<b>Cleaning Methods</b>	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with soap and water to remove the last traces of residue.
<b>Disposal Methods</b>	Dispose of spill waste according to Section 13.

**RED INSULATING VARNISH****4228-LIQUID****Section 7: Handling and Storage****Prevention**

Keep out of reach of children.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Do not breathe mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Keep container tightly closed.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge.

Avoid release to the environment.

**Handling**

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection.

Wash hands thoroughly after handling.

**Storage**

Store in well-ventilated place. Keep cool.

Store locked up.

**RED INSULATING VARNISH****4228-LIQUID****Section 8: Exposure Controls/Personal Protection****Substances with Occupational Exposure Limit Values**

Chemical Name	Country/ Provinces	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
xylene	ACGIH	100 ppm	Not established
	U.S.A. OSHA PEL	100 ppm	150 ppm
	Canada AB	100 ppm	150 ppm
	Canada BC	100 ppm	150 ppm
	Canada ON	100 ppm	150 ppm
	Canada QC	100 ppm	150 ppm
ethylbenzene	ACGIH	100 ppm	Not established
	U.S.A. OSHA PEL	100 ppm	125 ppm
	Canada AB	150 ppm	200 ppm
	Canada BC	20 ppm	Not established
	Canada ON	100 ppm	125 ppm
	Canada QC	100 ppm	125 ppm

*Note:* Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH<sup>1</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database<sup>2</sup> and data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

**Engineering Controls****Ventilation**

Keep airborne concentrations below the occupational exposure limits (OEL).

**Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

**RECOMMENDATION:** Use safety glasses with lateral protection (side shields).

**Skin Protection**

For likely contacts, use polyvinyl alcohol (PVA), viton, or other chemically resistant gloves.

For incidental contacts, use nitrile or other chemically resistant gloves.

*Section continued on the next page*



**RED INSULATING VARNISH****4228-LIQUID**

**Respiratory Protection** For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

**RECOMMENDATION:** Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

**General Hygiene Considerations**

Wash hands thoroughly with water and soap after handling.

**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b>	1%
<b>Appearance</b>	Red	<b>Upper Flammability Limit</b>	7%
<b>Odor</b>	Aromatic	<b>Vapor Pressure @20 °C</b>	0.67 kPa [5 mmHg]
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	Not available
<b>pH</b>	Not available	<b>Specific Gravity @20 °C</b>	1.06
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Not available
<b>Boiling Point</b>	136 °C [276.8 °F]	<b>Partition Coefficient</b>	Not established
<b>Flash Point</b> <sup>a)</sup>	24 °C [75.2 °F]	<b>Auto-ignition Temperature</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Flammability (solid, gas)</b>	Not applicable	<b>Viscosity @40 °C</b>	>20.5 mm <sup>2</sup> /s

a) Pensky-Martens closed cup value

**RED INSULATING VARNISH****4228-LIQUID****Section 10: Stability and Reactivity**

<b>Reactivity</b>	Not available
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Ignition sources, open flames, excessive heat, and incompatible substances
<b>Incompatibilities</b>	Strong oxidizing agents, strong bases, strong acids
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

**Section 11: Toxicological Information****Routes of Exposure**

Eye Contact, Ingestion, Inhalation, and Skin Contact

**Symptoms Summary**

<b>Eyes</b>	Causes irritation, redness, or pain.
<b>Skin</b>	Causes irritation, dry skin, and redness.
<b>Inhalation</b>	May cause irritation, headache, drowsiness, dizziness, cough, and nausea. May cause irritation of nose and throat.
<b>Ingestion</b>	May cause irritation, burning sensation, abdominal pain, dizziness, drowsiness, and nausea (see also inhalation symptoms).
<b>Chronic</b>	<p>Prolonged and repeated exposure is possibly carcinogenic based on inhalation studies on rats.</p> <p>Long term exposure to loud noises and product vapors may lead to some hearing loss.</p> <p>Chronic inhalation or ingestion of large doses may cause central nervous system depression.</p> <p>Prolonged or repeated over-exposure to the xylene and ethylbenzene component may lead to kidney damage (nephropathy).</p>

*Section continued on the next page*

**RED INSULATING VARNISH****4228-LIQUID****Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
xylene	4 350 mg/kg Rat	>1 700 mg/kg Rabbit	5 000 ppm 4 h Rat
ethylbenzene	3 500 mg/kg Rat	>5 000 mg/kg Rabbit	35 500 mg/m <sup>3</sup> 2h Mouse
iron (III) oxide	>5 000 mg/kg Rat	Not available	>5.05 mg/L Rat 4 h (dust)
butan-2-one oxime	930 mg/kg Rat	200 µL/kg Rabbit	Not available

*Note:* Toxicity data from the RTECS<sup>2</sup> and ECHA databases were consulted. The data from supplier (M)SDS were also consulted.

**Other Toxicological Effects****Skin corrosion/irritation**

Causes skin irritation based on Draize tests on animals.

**Serious eye  
damage/irritation**

Causes severe eye irritation based on Draize tests on animals.

**Sensitization**  
(allergic reactions)

The butan-2-one oxime causes skin sensitization.

**Carcinogenicity**  
(risk of cancer)**Ethylbenzene [CAS# 100-41-4]**

IARC Group 2B: Possibly carcinogenic to humans

ACGIH A3: Confirmed animal carcinogen with unknown relevance to humans

CA Prop 65: Listed as a carcinogen

NTP: Not listed

**Mutagenicity**  
(risk of heritable genetic effects)

Based on available data, the classification criteria are not met.

**Reproductive Toxicity**  
(risk to sex functions)

Based on available data, the classification criteria are not met.

**Teratogenicity**  
(risk of fetus malformation)

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Xylene and ethylbenzene can affect the central nervous system by inhalation causing drowsiness or dizziness.

*Section continued on the next page*

**RED INSULATING VARNISH****4228-LIQUID****STOT-repeated exposure**

Prolonged or repeated over-exposure to p-xylene and ethylbenzene and noise can lead to hearing loss (cochlear impairment) according to rat inhalation studies.

At high levels of exposures, ethylbenzene causes damage of the liver.

**Aspiration hazard**

Mixture is not a class 1 aspiration hazard. It has a mixture viscosity  $>20.5 \text{ mm}^2/\text{s}$  at  $40^\circ\text{C}$ .

**Section 12: Ecological Information**

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

Xylene isomers mixture are expected to be acute category 2 environmental toxicant with minimal LC50 of 2.5 mg/L for fish.

Ethylbenzene is an acute category 2 environmental toxicant with minimal LC50 of 4.2 mg/L for *Oncorhynchus mykiss* (rainbow trout); 2.9 mg/L 48 h *Daphnia magna* (water flea).

**Acute Ecotoxicity**

Category 2

Toxic to aquatic life

Avoid release to the environment.

**Chronic Ecotoxicity**

Based on available data, the classification criteria are not met.

**Biodegradability**

Biodegrades in soil and groundwater through aerobic and anaerobic denitrification conditions.

**Other Effects**

VOC (Regulated Volatile Organic Content) = 49% [514 g/L]

**Section 13: Disposal Information**

Dispose of contents in accordance with all local, regional, national, and international regulations.

## RED INSULATING VARNISH

## 4228-LIQUID

### Section 14: Transport Information

#### Ground

**Refer to TDG regulations** (Canadian Transportation of Dangerous Goods regulations);  
**USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Sizes 5 liter and under

**Limited Quantity**



Sizes greater than 5 liter

**UN number:** UN1263

**Shipping Name:** PAINT

**Class:** 3

**Packing Group:** III

**Marine Pollutant:** No

Flash Point = 24 °C [75.2 °F]



#### Air

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Sizes up to 60 L (passenger), 120 L (cargo)

**UN number:** UN1263

**Shipping Name:** PAINT

**Class:** 3

**Packing Group:** III

**Marine Pollutant:** No

Flash Point = 24 °C [75.2 °F]



#### Sea

**Refer to IMDG Regulations.**

Sizes 5 liter and under

**Limited Quantity**



Sizes greater than 5 liter

**UN number:** UN1263

**Shipping Name:** PAINT

**Class:** 3

**Packing Group:** III

**Marine Pollutant:** No

Flash Point = 24 °C [75.2 °F]



**Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.**

**RED INSULATING VARNISH****4228-LIQUID****Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

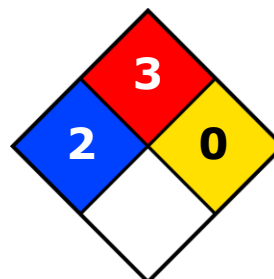
All hazardous ingredients are listed on the DSL/NDSL.

**Industry and Science Canada**

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

**USA****Other Classifications****HMIS<sup>®</sup> 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<sup>®</sup> 704 CODES**

*Approximate HMIS and NFPA Risk Ratings Legend:*

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

**CAA** (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product contains ethylbenzene and xylene that are listed as hazardous air pollutants.

**EPCRA** (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains ethylbenzene (CAS # 100-41-4; reportable quantity = 1 000 lb) and xylene (CAS# 1330-20-7, reportable quantity = 100 lb), which are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

**TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

*Section continued on the next page*

**RED INSULATING VARNISH****4228-LIQUID**

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

This product contains ethylbenzene (CAS # 100-41-4), which is listed as a carcinogen.

**Europe**

**RoHS** (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

**WEEE** (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

**Section 16: Other Information**

<b>SDS Prepared by</b>	Michel Hachey
<b>Date of Review</b>	20 April 2016
<b>Supersedes</b>	30 July 2014
<b>Reason for Changes:</b>	Reclassification due to new information in compliance with HCS 2012 and WHMIS 2015.

**Reference**

- 1) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)
- 2) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

*Section continued on the next page*



Quality System Certified to ISO 9001:2008

SAI Global File #004008

Burlington, Ontario, Canada

## RED INSULATING VARNISH

**4228-LIQUID**

**Technical Queries** 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).

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

**Mailing Addresses** *Manufacturing & Support*  
1210 Corporate Drive  
Burlington, Ontario, Canada  
L7L 5R6

*Head Office*  
9347-193rd Street  
Surrey, British Columbia, Canada  
V4N 4E7

**Disclaimer** This material safety data sheet is provided as an information resource only. *M.G. Chemicals, Ltd.* believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional, national, and international regulations.