

4228

Safety Data Sheet

Section 1: Identification


Product Identifier and Other Means of Identification

Product Identifier: 4228**Other Means of Identification:** Dielectric Coating**Related Part #** 4228-55ML, 4228-225ML, 4228-1L, 4228-4L, 4228-20L

Recommended Use and Restriction on Use

Use: High voltage protective coating**Uses Advised Against:** INDUSTRIAL USE ONLY

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** support@mgchemicals.com**WEB** www.mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY (leaks, spills, fires, exposures or accidents)
USA or CANADA—Call Verisk 3E at **+1-866-519-4752** or **+1-760-476-3962**
(Service access code: 335388)**For emergencies involving the transport of dangerous goods;** 24/7 service
CANADA—Call CANUTEC collect at **+1-613-996-6666** or ***666** on cellular phones



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Section 2: Hazard(s) Identification
Classification of Hazardous Chemical
GHS Categories

Criteria		Category	Signal Word	Pictograms
Carcinogenicity		1B	Danger	Health
Reproductive Toxicity		2	Warning	Health
Specific Target Organ Toxicity	Repeated Exposure	2	Warning	Health
Flammable Liquid		3	Warning	Flame
Sensitization	Skin	1	Warning	Exclamation
Skin Irritation		2	Warning	Exclamation
Eye Irritation		2	Warning	Exclamation
Specific Target Organ Toxicity	Single Exposure	3	Warning	Exclamation
Acute Toxicity	Dermal ^{a)}	4	Warning	Exclamation
Acute Toxicity	Inhalation ^{a)}	4	Warning	Exclamation
Hazardous to Aquatic Environment	Acute	2	<i>none</i>	<i>none</i>

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


a) CLP Annex VI mandated classifications

Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H350: May cause cancer H361: Suspected of damaging fertility or the unborn child H373: May cause damage to organs (liver, kidney, and inner ear) through prolonged or repeated exposure
	H226: Flammable liquid and vapor

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Pictograms	Hazard Statements
	H317: May cause an allergic skin reaction H315: Causes skin irritation H319: Causes serious eye irritation H312 + H332: Harmful in contact with skin or if inhaled H335: May cause respiratory irritation H336: May cause dizziness or drowsiness
No Symbol Mandated	H401: Toxic to aquatic life
Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, and lighting equipment.
P243	Take action to prevent static discharges.
P260	Do not breathe mist, vapors, and 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, and face protection.
P273	Avoid release to the environment.

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Response	Precautionary Statements
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 or attention.
P303 + P361 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of water or shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P363	Wash contaminated clothing before reuse.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTRE or doctor if you feel unwell.
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 or attention.
Storage	Precautionary Statements
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents in accordance to local, regional, national, and international regulations.

Hazards Not Otherwise Classified

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

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Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
1330-20-7	xylene (mixed isomers)	36%
100-41-4	ethylbenzene	9%
108-88-3	toluene	0.9%
96-29-7	butan-2-one oxime ^{a)}	0.9%

a) Also known as MEKO (methyl ethyl ketoxime)

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statement</i>
IF ON SKIN (or hair)	P303 + P361 + P352, P333 + P313, P308 + P313, P363
Immediate Symptoms	<i>irritation, dry skin, redness</i>
Response	Take off immediately all contaminated clothing. Wash with plenty of water or shower. If skin irritation or rash occurs: Get medical advice or attention. IF exposed or concerned: Get medical advice or attention. Wash contaminated clothing before reuse.
IF INHALED	P304 + P340, P312, P308 + P313
Immediate Symptoms	<i>Irritation of respiratory tract, cough, sore throat, drowsiness, dizziness, headaches</i>
Response	Remove person to fresh air and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE or doctor. If exposed or concerned: Get medical advice or attention.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>redness, severe irritation, pain, blurred vision</i>
Response	Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

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IF SWALLOWED	P301 + P330, P331, P308 + P313
Immediate Symptoms	<i>burning sensation, abdominal pain, nausea, headaches, dizziness, drowsiness</i>
Response	Rinse mouth. Do NOT induce vomiting. If exposed or concerned: Get medical advice or attention

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.
Specific Hazards	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.
Combustion Products	Produces carbon oxides (CO, CO ₂)
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Remove or keep away all sources of extreme heat or open flames. Do not breathe the mist, spray, and vapors.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite).
Cleaning Methods	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. RECOMMENDATION: Use a grounded stainless steel or carbon steel container.
Disposal Methods	Dispose of spill waste according to Section 13.

4228**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.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

Do not breathe mist, vapors, and spray. Use only outdoors or in a well-ventilated area. Keep container tightly closed.

Avoid release to the environment.

Handling

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

Wear protective gloves, protective clothing, eye protection, and face protection.

Wash hands thoroughly after handling.

Storage

Store in a well-ventilated place. Keep cool.

Store locked up.

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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 (mixed isomers)	ACGIH	100 ppm	150 ppm
	U.S.A. OSHA PEL	100 ppm	Not established
	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	20 ppm	Not established
	U.S.A. OSHA PEL	100 ppm	Not established
	Canada AB	100 ppm	125 ppm
	Canada BC	20 ppm (2B)	Not established
	Canada ON	100 ppm	125 ppm
	Canada QC	100 ppm	125 ppm
toluene	ACGIH	20 ppm	Not established
	U.S.A. OSHA PEL	200 ppm	300 ppm
	Canada AB	50 ppm	Not established
	Canada BC	20 ppm	Not established
	Canada ON	20 ppm	Not established
	Canada QC	100 ppm	150 ppm

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h. (2B) Carcinogen

Engineering Controls
Ventilation

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

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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.

Respiratory Protection

For over-exposures up to 10 x OEL of mist, vapors, or 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.

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Section 9: Physical and Chemical Properties

Physical State	Liquid	Lower Flammability Limit	1%
Appearance	Red	Upper Flammability Limit	9%
Odor	Aromatic	Vapor Pressure @20 °C	0.67 kPa [5 mmHg]
Odor Threshold	≥0.324 ppm	Vapor Density	3.16 (Air = 1)
pH	Not available	Relative Density @20 °C	1.06
Freezing/Melting Point	Not available	Solubility in Water	Negligible
Initial Boiling Point	136 °C [276.8 °F]	Partition Coefficient (n-octanol/water)	Not available
Flash Point ^{a)}	24 °C [75.2 °F]	Auto-ignition Temperature ^{b)}	430 °C [806 °F]
Evaporation Rate	0.86 (ButAc = 1)	Decomposition Temperature	Not available
Flammability	Flammable	Viscosity @40 °C	>20.5 mm ² /s

a) Pensky-Martens closed cup value

b) Values based on the component with the lowest auto-ignition value.

Section 10: Stability and Reactivity

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

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Section 11: Toxicological Information**Summary of Effects and Symptoms by Routes of Exposure**

Skin	Causes skin redness, skin irritation, and dry skin.
Inhalation	May cause irritation of the respiratory tract, cough, sore throat, drowsiness, dizziness, and headaches. Severe overexposure may lead to lost of consciousness.
Eyes	Causes redness, severe irritation, pain, and blurred vision.
Ingestion	May cause a burning sensation, abdominal pain, and headaches, nausea.
Chronic	<p>Prolonged or repeated exposure may defat skin and cause dermatitis. Prolonged and repeated exposure may lead to skin sensitization.</p> <p>Prolonged and repeated exposure is possibly carcinogenic based on inhalation studies on rats.</p> <p>Prolonged or repeated exposure may damage the liver and kidneys.</p> <p>Long term exposure to loud noises and product vapors may lead to some hearing loss.</p>

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Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
xylene	4 350 mg/kg Rat	>5 000 mg/kg Rabbit	5 000 ppm 4 h Rat
ethylbenzene	3 500 mg/kg Rat	>5 000 mg/kg Rabbit	35 500 mg/m ³ 2 h Mouse
toluene	5 580 mg/kg Rat	12 124 mg/kg Rabbit	49 g/m ³ 4 h (vapor) Rat
butan-2-one oxime	2326 mg/kg Rat	>1 000 mg/kg Rabbit	20 mg/L 4 h (vapor) Rat
ATE Mixture	>5 000 mg/kg Rat	>5 000 mg/kg Rabbit	27 mg/L 4 h (vapor)

Note: Toxicity data from the ECHA database were consulted. The data from supplier 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 can cause 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

Butan-2-one oxime [CAS# 96-29-7]
 A chronic inhalation/oncogenicity study of methyl ethyl ketoxime in rats and mice shows evidence of liver cancer following vapor inhalation.
 Newton, P.E. et al., Inhalation Toxicology 13(12): 1093-1116, 2001

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Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	At high doses, spermatogenesis was observed in male rat by inhalation of toluene.
Teratogenicity (risk of fetus malformation)	Fetotoxicity is observed in animal studies for inhalation and oral exposures for toluene.
STOT-single exposure	Xylene and ethylbenzene can affect the central nervous system by inhalation causing drowsiness or dizziness.
STOT-repeated exposure	<p>Prolonged or repeated over-exposure to p-xylene and ethylbenzene and noise can lead to hearing loss (cochlear impairment) according to rat inhalation studies.</p> <p>Overexposure to high levels of ethylbenzene may damage the liver and kidneys.</p> <p>Contains toluene, which is a Cat 2 STOT repeated exposure hazard for the central nervous system and cochlear systems.</p> <p>Toluene is an ototoxic chemical according to rat studies: inhalation exposure in the presence of noise may lead to cochlear impairment.</p>
Aspiration hazard	Mixture is not a class 1 aspiration hazard. Although it contains more than 10% components of category 1 for aspiration hazard, the mixture has a kinematic viscosity of $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$ for the separation layer.

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).

Toluene is an acute category 2 environmental toxicant with minimal LC50 96 h of 7.63 mg/L for *Oncorhynchus mykiss* (rainbow trout); EC50 24 h of 8.9 mg/L *Daphnia magna* (water flea); EC50 24 h of 10 mg/L *Pseudokirchneriella subcapitata* (green algae).

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Acute Ecotoxicity

Category 2

Toxic to aquatic life

Avoid release to the environment.

Chronic Ecotoxicity

Category 3

Harmful to Toxic to aquatic life with long lasting effects

Biodegradability

Not available

Other Effects

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

Section 13: Disposal Information

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

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 L and under

4228-55ML, 4228-225ML, 4228-1L,
4228-4L**Limited Quantity**

Sizes greater than 5 L

4228-20L

UN number: UN1263**Shipping Name:** PAINT**Class:** 3**Packing Group:** III**Marine Pollutant:** No*Section continued on the next page*

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Air
Refer to ICAO-IATA Dangerous Goods Regulations.

 Sizes 5 L and under
 4228-55ML, 4228-225ML, 4228-1L,
 4228-4L

Limited Quantity

 Total net quantity
 per package 10 L

 Sizes up to 60 L (passenger), 120 L (cargo)
 4228-20L

UN number: UN1263
Shipping Name: PAINT
Class: 3
Packing Group: III
Marine Pollutant: No

Sea
Refer to IMDG Regulations.

 Sizes 5 L and under
 4228-55ML, 4228-225ML, 4228-1L,
 4228-4L

Limited Quantity

 Packing instructions
 P001

 Sizes greater than 5 L
 Cat No: 4228-20L

UN number: UN1263
Shipping Name: PAINT
Class: 3
Packing Group: III
Marine Pollutant: No


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

Section 15: Regulatory Information
Canada
Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

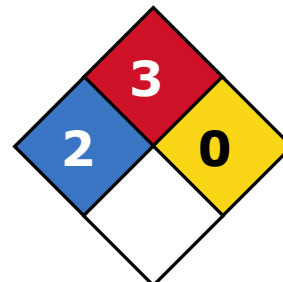
Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

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4228**USA****Other Classifications****HMIS[®] RATING**

HEALTH:	* 2
FLAMMABILITY:	3
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA[®] 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 xylenes, ethylbenzene and toluene 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.

This product contains toluene (CAS# 108-88-3; reportable quantity = 1 000 lb), which is 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.

California Proposition 65

(Chemicals known to cause cancer or reproductive toxicity, USA).

This product contains ethylbenzene, which is listed as a carcinogen.

This product contains toluene, which is listed as reproductively toxic.

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4228**Europe****RoHS** (Restriction of Hazardous Substances Directive)

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

WEEE (Waste Electrical and Electronic Equipment Directive)

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

Section 16: Other Information

SDS Prepared by	MG Chemical's Regulatory Department
Date of Review	04 May 2023
Supersedes	20 January 2023
Reason for Changes:	Update to section 1, Uses Advised Against.

Reference

1) ACGIH 2022 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 (2022).

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ATE	Acute Toxicity Estimate
IARC	International Agency for Research on Cancer
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
NTP	National Toxicology Program
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

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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.

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