

Safety Data Sheet E-4672

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 10-15-1979 Revision date: 08-17-2016 Supersedes: 10-15-2013

SECTION 1: Identification

1.1. Product identifier

Product form : Substance
Name : Methanol
CAS No : 67-56-1
Formula : CH4O

Other means of identification : UCAR HTF, Heat Treating Fluid

Product group : Core Products

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Praxair Canada inc. 1200 – 1 City Centre Drive Mississauga - Canada L5B 1M2 T 1-905-803-1600 - F 1-905-803-1682 www.praxair.ca

1.4. Emergency telephone number

Emergency number : 1-800-363-0042

Call emergency number 24 hours a day only for spills, leaks, fire, exposure, or accidents

involving this product.

For routine information, contact your supplier or Praxair sales representative.

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-CA classification

Flam. Liq. 2 H225 Acute Tox. 3 (Oral) H301 Acute Tox. 3 (Dermal) H311 Acute Tox. 3 (Inhalation) H331 STOT SE 1 H370

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms







GHS02

Signal word : DANGER

Hazard statements : HIGHLY FLAMMABLE LIQUID AND VAPOUR

TOXIC IF SWALLOWED, IN CONTACT WITH SKIN OR IF INHALED

CAUSES DAMAGE TO ORGANS

Precautionary statements : 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

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical, lighting, ventilating equipment

Use only non-sparking tools

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Take precautionary measures against static discharge

Do not breathe gas, vapours

Do not get in eyes, on skin, or on clothing

Do not eat, drink or smoke when using this product Use and store only outdoors or in a well-ventilated area

Avoid release to the environment

Wear protective gloves, protective clothing, eye protection, respiratory protection, and/or face

protection Store locked up

Dispose of contents/container in accordance with container Supplier/owner instructions

Protect from sunlight when ambient temperature exceeds 52°C (125°F)

Use a back flow preventive device in the piping Close valve after each use and when empty

Do not open valve until connected to equipment prepared for use

Approach suspected leak area with caution

Read and follow the Safety Data Sheet (SDS) before use

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	CAS No.	% (Vol.)	Common Name (synonyms)
Methanol (Main constituent)	(CAS No) 67-56-1	100	Carbinol / Methyl hydroxide / Wood alcohol / METHYL ALCOHOL

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures	4.1. I	Description	n of first a	aid measures
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First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing,

give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a

physician

First-aid measures after skin contact : In case of contact, immediately flush affected areas with plenty of water for at least 15 minutes

while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Discard contaminated shoes. Remove contaminated clothing. Drench affected area with

water for at least 15 minutes.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing. Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly.

Contact an ophthalmologist immediately.

First-aid measures after ingestion : Give two glasses of water and induce vomiting. Immediately call a POISON CENTER or

doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries : CAUSES DAMAGE TO ORGANS.

Symptoms/injuries after skin contact : Repeated exposure to this material can result in absorption through skin causing significant

health hazard. TOXIC IN CONTACT WITH SKIN.

Symptoms/injuries after ingestion : TOXIC IF SWALLOWED. Swallowing a small quantity of this material will result in serious

health hazard.

Potential adverse human health effects and

symptoms

: TOXIC IF SWALLOWED. TOXIC IN CONTACT WITH SKIN.

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4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment

: NOTES TO PHYSICIAN: The combination of visual disturbances, metabolic acidosis, and formic acid in the urine is evidence of methanol poisoning. Administer ethanol (whiskey, brandy, etc.), 30 ml every 3 hours, until medical assistance is obtained. The therapeutic intravenous administration of ethanol (10 ml per hour) allows it to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated by means of intravenous sodium bicarbonate, and methanol elimination may be increased by hemodialysis as indicated. Treatment should be based on blood methanol levels and acid-base balance. Folates may be administered to enhance the metabolism of formaldehyde. Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media

: Carbon dioxide, Dry chemical, Water spray or fog. Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Fire hazard

: HIGHLY FLAMMABLE LIQUID AND VAPOUR.: May form flammable/explosive vapour-air mixture.

Explosion hazard Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

Reactivity in case of fire

: No reactivity hazard other than the effects described in sub-sections below.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions

: Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.

Protection during firefighting

: DANGER: FLAMMABLE LIQUID AND VAPOR. Evacuate all personnel from danger area. Use self-contained breathing apparatus. Immediately cool surrounding containers with water spray from maximum distance, taking care not to extinguish flames. Avoid spreading burning liquid with water. Remove ignition sources if safe to do so. If flames are accidentally extinguished, explosive reignition may occur. Reduce vapors with water spray or fog. Stop flow of liquid if safe to do so, while continuing cooling water spray. Remove all containers from area of fire if safe to do so. Allow fire to burn out. On-site fire brigades must comply with their provincial and local fire code instructions.

Special protective equipment for fire fighters

Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

Other information

: Vapor forms explosive mixtures with air and oxidizing agents. If leaking gas catches fire, do not extinguish flames. Flammable and toxic vapors may spread from leak and could explode if reignited by sparks or flames. Vapors are heavier than air and may collect in low spots. Explosive atmospheres may linger. Before entering area, especially confined areas, check with an appropriate device

Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.)

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : No additional information available.

6.2. Methods and materials for containment and cleaning up

For containment

: On land, sweep or shovel into suitable containers.

Methods for cleaning up

: Prevent waste from contaminating the surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, provincial, and local regulations. If necessary, call your local supplier for assistance.

Protective equipment

: Avoid breathing gas, vapours.

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6.3. Reference to other sections

For further information refer to section 8: Exposure controls/personal protection

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling

: May irritate skin, eyes, and respiratory tract. Use only with adequate ventilation or respiratory protection. Do not get liquid or vapor in eyes, on skin, or on clothing. Have safety showers and eyewash fountains immediately available. May form explosive mixtures with air. Keep away from heat, sparks, and open flame. Use only spark-proof tools and explosion-proof equipment. Protect containers from damage. Use a suitable hand truck to move containers; do not drag, roll, slide, or drop. For other precautions in using this product, see section 16

Do not breathe vapours

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

Hygiene measures

Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling.

Additional hazards when processed

: Handle empty containers with care because residual vapours are flammable.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

: Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g, NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

Conditions to avoid

: Sources of ignition. Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methanol (67-56-1)		
USA - ACGIH	ACGIH TLV-TWA (ppm)	200 ppm

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Methanol (67-56-1)		
USA - ACGIH	ACGIH TLV-STEL (ppm)	250 ppm
USA - OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
USA - OSHA	OSHA PEL (TWA) (ppm)	200 ppm
Canada (Quebec)	VECD (mg/m³)	328 mg/m³
Canada (Quebec)	VECD (ppm)	250 ppm
Canada (Quebec)	VEMP (mg/m³)	262 mg/m³
Canada (Quebec)	VEMP (ppm)	200 ppm
Alberta	OEL STEL (mg/m³)	328 mg/m³
Alberta Alberta	OEL STEL (ppm)	250 ppm 262 mg/m³
Alberta	OEL TWA (mg/m³) OEL TWA (ppm)	200 ppm
British Columbia	OEL STEL (ppm)	250 ppm
British Columbia	OEL TWA (ppm)	200 ppm
Manitoba	OEL STEL (ppm)	250 ppm
Manitoba	OEL TWA (ppm)	200 ppm
New Brunswick	OEL STEL (mg/m³)	328 mg/m³
New Brunswick	OEL STEL (IIIg/III-)	250 ppm
	" ' '	
New Brunswick	OEL TWA (mg/m³)	262 mg/m³
New Brunswick	OEL TWA (ppm)	200 ppm
New Foundland & Labrador	OEL STEL (ppm)	250 ppm
New Foundland & Labrador	OEL TWA (ppm)	200 ppm
Nova Scotia	OEL STEL (ppm)	250 ppm
Nova Scotia	OEL TWA (ppm)	200 ppm
Nunavut	OEL STEL (mg/m³)	328 mg/m³
Nunavut	OEL STEL (ppm)	250 ppm
Nunavut	OEL TWA (mg/m³)	262 mg/m³
Nunavut	OEL TWA (ppm)	200 ppm
Northwest Territories	OEL STEL (ppm)	250 ppm
Northwest Territories	OEL TWA (ppm)	200 ppm
Ontario	OEL STEL (ppm)	250 ppm
Ontario	OEL TWA (ppm)	200 ppm
Prince Edward Island	OEL STEL (ppm)	250 ppm
Prince Edward Island	OEL TWA (ppm)	200 ppm
Québec	VECD (mg/m³)	328 mg/m³
Québec	VECD (ppm)	250 ppm
Québec	VEMP (mg/m³)	262 mg/m³
Québec	VEMP (ppm)	200 ppm
Saskatchewan	OEL STEL (ppm)	250 ppm
Saskatchewan	OEL TWA (ppm)	200 ppm
Yukon	OEL STEL (mg/m³)	310 mg/m³
Yukon	OEL STEL (ppm)	250 ppm
Yukon	OEL TWA (mg/m³)	260 mg/m³
Yukon	OEL TWA (ppm)	200 ppm

8.2. **Appropriate engineering controls**

Appropriate engineering controls

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[:] Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).



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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Safety glasses. Face shield. Gloves.







Hand protection

Wear chemically resistant protective gloves. Wear work gloves when handling containers.

Wear heavy rubber gloves where contact with product may occur.

Eye protection

Wear goggles and a face shield when transfilling or breaking transfer connections. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and

any provincial regulations, local bylaws or guidelines.

Respiratory protection

Respiratory protection: Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with

unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection

: Wear cold insulating gloves when transfilling or breaking transfer connections.

Other information

Odour

Other protection: Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of flame resistant anti-static safety clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state : Liquid

Clear, colorless, mobile liquid. Appearance

Colour Colourless.

Slight. alcohol-like. 5950 ppm (May) Odour threshold 7800 mg/m3 (May) : Not applicable.

: No data available pH solution

Relative evaporation rate (butylacetate=1) : 2.1

Relative evaporation rate (ether=1) : Not applicable. Melting point : -98 °C (-144.4°F) Freezing point : -97.7 °C (-143.9°F) **Boiling point** 64.7 °C (148.5°F) Flash point : 11 °C (51.8°F) Critical temperature : 239.8 °C (464°F) Auto-ignition temperature : 385 °C (725°F) Decomposition temperature : No data available Vapour pressure 0.13 bar (1.86 psia) Vapour pressure at 50 °C : No data available

Relative vapour density at 20 °C : 1.11 Relative density : 0.7924

Relative density of saturated gas/air mixture : No data available

Density : 0.791 - 0.792 g/cm3 (at 20 °C)

Relative gas density : No data available

Solubility : Water: No data available

Log Pow : -0.77

Log Kow : Not applicable. Viscosity, kinematic : Not applicable.

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Viscosity, dynamic : Not applicable.

Viscosity, kinematic (calculated value) (40 °C) : No data available

Explosive properties : Not applicable.

Oxidizing properties : None.

Flammability (solid, gas) :

HIGHLY FLAMMABLE LIQUID AND VAPOUR

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity : No reactivity hazard other than the effects described in sub-sections below.

Chemical stability : HIGHLY FLAMMABLE LIQUID AND VAPOUR. May form flammable/explosive vapour-air

mixture.

Possibility of hazardous reactions : Not established.

Conditions to avoid : Extremely high or low temperatures. Open flame.

Incompatible materials : Acids. Alkali metals. Halogens. Halogenated compounds. Oxidizing agents. Lead. Magnesium.

Viton® /. Fluoroelastomer (FKM).

Hazardous decomposition products : Thermal decomposition may produce : Hydrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: TOXIC IF SWALLOWED.

Acute toxicity (dermal) : Dermal: TOXIC IN CONTACT WITH SKIN.

Acute toxicity (inhalation) : Inhalation: TOXIC IF INHALED.

Methanol (\f)67-56-1		
LD50 oral rat	5628 mg/kg	
LD50 dermal rabbit	17100 mg/kg	
LC50 inhalation rat (mg/l)	128.2 mg/l/4h	
LC50 inhalation rat (ppm)	64000 ppm/4h	
ATE CA (oral)	100.0000000 mg/kg bodyweight	
ATE CA (dermal)	300.0000000 mg/kg bodyweight	
ATE CA (gases)	700.00000000 ppmv/4h	
ATE CA (vapours)	3.00000000 mg/l/4h	
ATE CA (dust,mist)	0.50000000 mg/l/4h	

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : CAUSES DAMAGE TO ORGANS.

Specific target organ toxicity (repeated

exposure)

: Not classified

Aspiration hazard : Not classified

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Potential adverse human health effects and

symptoms

: TOXIC IF SWALLOWED. TOXIC IN CONTACT WITH SKIN.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : HARMFUL TO AQUATIC LIFE.

Methanol (67-56-1)	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Methanol (67-56-1)		
BCF fish 1	10 mg/l	
Log Pow	-0.77	
Log Kow	Not applicable.	

12.4. Mobility in soil

Methanol (67-56-1)	
Mobility in soil	No data available.
Log Pow	-0.77
Log Kow	Not applicable.

12.5. Other adverse effects

Effect on the ozone layer : None

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international

regulations. Contact supplier for any special requirements.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG) : UN1230

Packing group : II - Medium Danger

TDG Primary Hazard Classes : 3 - Class 3 - Flammable Liquids

TDG Subsidiary Classes : 6.1

Proper shipping name : METHANOL

Explosive Limit and Limited Quantity Index : 1 L
Passenger Carrying Road Vehicle or Passenger : 1 L

Carrying Railway Vehicle Index

14.3. Air and sea transport

IMDG

UN-No. (IMDG) : 1230
Proper Shipping Name (IMDG) : METHANOL

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Class (IMDG) : 3 - Flammable liquids

Packing group (IMDG) : II - substances presenting medium danger

IATA

UN-No. (IATA) : 1230 Proper Shipping Name (IATA) : Methanol

Class (IATA) : 3 - Flammable Liquids Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. National regulations

Methanol (67-56-1)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Methanol (67-56-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Japanese Poisonous and Deleterious Substances Control Law

Listed on INSQ (Mexican national Inventory of Chemical Substances)

Listed on CICR (Turkish Inventory and Control of Chemicals)

SECTION 16: Other information

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Indication of changes:

Training advice Other information

- : Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard.
- When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

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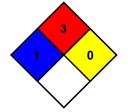
NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all

ambient conditions.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions,

and are not reactive with water.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above

100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT

react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS Canada (GHS) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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