SAFETY DATA SHEET

Preparation Date: 5/7/2018 **Revision Date:** Not Applicable **Revision Number:** Not Applicable

1. IDENTIFICATION

Product identifier

Product code: M2446
Product Name: MEM CHLORIDE

Other means of identification
Synonyms: No information available
CAS #: 3970-21-6
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use
Recommended use: No information available.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 3

Label elements

Danger

Hazard statements
Harmful if swallowed
Harmful in contact with skin

Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause cancer
May cause respiratory irritation
Flammable liquid and vapor

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
May be harmful in contact with skin

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/.../equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response

In case of fire: Use CO2, dry chemical, or foam to extinguish.
IF IN EYES: 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.
Call a POISON CENTER or doctor/physician if you feel unwell
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
MEM Chloride	3970-21-6	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Causes skin irritation
Causes serious eye irritation
Irritating to respiratory system

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam. Water spray.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide. Hydrogen Chloride Gas.

Specific hazards: Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases.

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk.

Methods for cleaning up Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep refrigerated. Keep at temperatures between 2 and 8 °C. Store under inert gas. Packed under Argon. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:
Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
MEM Chloride	3970-21-6	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
MEM Chloride	3970-21-6	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
MEM Chloride	3970-21-6	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Gloves
Chemical resistant apron
Long sleeved clothing

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Liquid

Appearance:
Clear.

Color:
Colorless.

Odor:
No information available.

Taste
No information available.

Formula:
C4H9ClO2

Molecular/Formula weight:
124.57

Flammability:
Flammable

Flashpoint (°C/°F):
54 °C/129.2 °F

Flash Point Tested according to:
Closed cup

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Melting point/range(°C/°F):
No information available

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
50-52 °C/122-125.6 °F @ 13 mmHg

Bulk density:
No information available

Density (g/cm3):
No information available

Specific gravity:
1.090

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
4.3

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
Miscible with water

Solubility:
No information available

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Strong oxidizing agents

Hazardous decomposition products: Carbon monoxide. Hydrogen chloride.

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Ingestion. Inhalation. Eyes.

Acute Toxicity

Component Information

MEM Chloride	
CAS-No.	3970-21-6

LD50/oral/rat = No information available
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Harmful in contact with skin. Causes skin irritation.

Eye Contact: Causes serious eye irritation.

Inhalation Harmful by inhalation. Irritating to respiratory system.

Ingestion Harmful if swallowed.

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Chronic exposure via ingestion may cause blackening or erosion of the teeth and jaw necrosis, pharyngitis, and gastritis. It may also behavior (similar to acute ingestion), and metabolism (weight loss).
Chronic exposure via inhalation may cause asthma and/or bronchitis with cough, wheezing, phlegm, and/or shortness of breath . Some researchers consider acetic acid capable of causing a syndrome known as "reactive airways dysfunction." or RADS. This syndrome resembles bronchial asthma, but differs in that exposure to small doses does not cause a reaction a few weeks after onset. It may also affect the blood (decreased leukocyte count), and urinary system (kidneys).
Repeated or prolonged skin contact may cause thickening, blackening, and cracking of the skin.

Sensitization: No information available.

Mutagenic Effects: Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects
Cytogenic analysis - hamster ovary
Sister Chromatid Exchange (human lymphocyte)

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances

MEM Chloride	3970-21-6	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: Teeth. Respiratory system. Lungs. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
MEM Chloride	3970-21-6	None	None	None	None

14. TRANSPORT INFORMATION

DOT
UN-No: UN1993
Proper Shipping Name: Flammable liquids, n.o.s. (MEM chloride)
Hazard Class: 3
Subsidiary Class No information available
Packing group: III
Emergency Response Guide Number 128

Marine Pollutant	No data available
DOT RQ (lbs):	No information available
Special Provisions	B1, B52, IB3, T4, TP1, TP29
Symbol(s):	[DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.
Description:	UN1993, Flammable liquids, n.o.s., 3, III

TDG (Canada)

UN-No:	UN1993
Proper Shipping Name:	Flammable liquid, n.o.s.
Hazard Class:	3
Subsidiary Risk:	No information available
Packing Group:	III
Marine Pollutant	No Information available
Description:	UN1993, Flammable liquid, n.o.s., 3, III

ADR

UN-No:	UN1993
Proper Shipping Name:	Flammable liquid, n.o.s.
Hazard Class:	3
Packing Group:	III
Subsidiary Risk:	No information available
Special Provisions	274, 601
Description:	UN1993, Flammable liquid, n.o.s., 3, III

IMO / IMDG

UN-No:	UN1993
Proper Shipping Name:	Flammable liquids, n.o.s. (MEM chloride)
Hazard Class:	3
Subsidiary Risk:	No information available
Packing Group:	III
Marine Pollutant	No information available
EMS:	F-E
Special Provisions	223, 274, 955
Description	UN1993, Flammable liquid, n.o.s. (MEM CHLORIDE), 3, III

RID

UN-No:	UN1993
Proper Shipping Name:	Flammable liquid, n.o.s.
Hazard Class:	3
Subsidiary Risk:	No information available
Packing Group:	III
Special Provisions	274, 601
Description:	UN1993, Flammable liquid, n.o.s., 3, III

ICAO

UN-No:	UN1993
Proper Shipping Name:	Flammable liquid, n.o.s.
Hazard Class:	3
Subsidiary Risk:	No information available
Packing Group:	III
Description:	UN1993, Flammable liquid, n.o.s., 3, III
Special Provisions	A3

IATA

UN-No:	UN1993
Proper Shipping Name:	Flammable liquid, n.o.s.
Hazard Class:	3
Subsidiary Risk:	No information available

Packing Group: III
ERG Code: 3L
Special Provisions No information available
Description: UN1993, Flammable liquid, n.o.s., 3, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
MEM Chloride	3970-21-6	Present	Not present	Not present	Not present	Not present	Not present	Present 223-589-8

U.S. Regulations

MEM Chloride

New Jersey - Discharge Prevention - List of Hazardous Substances: Present (chloroalkyl ethers)
Pennsylvania RTK: Environmental hazard (chloroalkyl ethers)
Pennsylvania RTK - Environmental Hazard List Present (chloroalkyl ethers)
California Directors List of Hazardous Substances: Present (chloroalkyl ethers)

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
MEM Chloride	3970-21-6	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
MEM Chloride	3970-21-6	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
MEM Chloride	3970-21-6	Not Applicable	Not Applicable

Canada

WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

The classification of this product has not been validated yet

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
MEM Chloride	3970-21-6	Not Listed	Present

Components	CAS-No.	CEPA Schedule I - Toxic Substances
MEM Chloride	3970-21-6	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
MEM Chloride	3970-21-6	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
MEM Chloride	3970-21-6	No information

EU - CLP (1272/2008)

R-phrase(s)

R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 - Wear suitable gloves.

Components	CAS-No.	**Classification**	**Concentration Limits:**	**Safety Phrases**
MEM Chloride	3970-21-6		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xi - Irritant.

16. OTHER INFORMATION

Preparation Date: 5/7/2018
Revision Date: Not Applicable
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages,

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End of Safety Data Sheet