SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Name: Calcium 2-Methoxyethoxide

Product Number: All applicable American Elements product codes, e.g. CA-METOX-01-LIQ 01

CAS #: 28099-67-4

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification (GHS-US) Flam. Liq. 3 H226 Acute Tox. 4 (Dermal) H312 Acute Tox. 4 (Inhalation:dust,mist) H332 Skin Irrit. 2 H315 Eye Irrit. 2A H319 Repr. 1B H360 Full text of H-phrases: see section 16

Signal word (GHS-US) : Danger Hazard statements (GHS-US) : H226 - Flammable liquid and vapor H312+H332 - Harmful in contact with skin or if inhaled H315 - Causes skin irritation H319 - Causes serious eye irritation H360 - May damage fertility or the unborn child Precautionary statements (GHS-US) : P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P210 - Keep away from heat, open flames, sparks. - No smoking P233 - Keep container tightly closed P240 - Ground/bond container and receiving equipment P243 - Take precautionary measures against static discharge P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P261 - Avoid breathing vapors P264 - Wash hands thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing, rinse skin with water/shower P332+P313 - If skin irritation occurs: Get medical advice/attention P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing 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 P308+P313 - If exposed or concerned: Get medical advice/attention P362+P364 - Take off contaminated clothing and wash it before reuse P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish P403+P235 - Keep in a cool place P405 - Store locked up P501 - Dispose of contents/container to licensed waste disposal facility. Other hazards No additional information available Unknown acute toxicity (GHS-US) No data available

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>N/A</th>
<th>Mixture</th>
<th>Name</th>
<th>Product identifier</th>
<th>% Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methoxyethanol</td>
<td>Cas: 109-86-4</td>
<td>&gt; 75 Flam. Liq</td>
<td>3</td>
<td>H226</td>
<td></td>
</tr>
<tr>
<td>Acute Tox.4(Dermal), H312 Acute Tox.4(Inhalation), H332 Repr. 1B, H360 Calcium methoxyethoxide</td>
<td>Cas: 28099-67-4</td>
<td>&lt; 25 Skin Irrit. 2, H315 Eye Irrit. 2A, H319</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

Description of first aid measures First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. First-aid measures If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician. First-aid measures In case of skin contact: Wash with plenty of soap and water. Get medical advice/attention. First-aid measures In case of eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention. Most important symptoms and effects, both acute and delayed: Symptoms/injuries If inhaled: May cause irritation to the respiratory tract. Symptoms/injuries In case of skin contact: Causes skin irritation. Symptoms/injuries In case of eye contact: Causes serious eye irritation. Symptoms/injuries after ingestion: May be harmful if swallowed. Chronic symptoms: Methoxyethanol, a hydrolysis product, is known to have a chronic effect on the central nervous system. Indication of any immediate medical attention and special treatment needed: No additional information available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media Suitable extinguishing media: Water spray. Foam. Carbon dioxide. Dry chemical. Special hazards arising from the substance or mixture Fire hazard: Flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame. Advice for firefighters Firefighting instructions: Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire. Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures General measures: Remove ignition sources. Use special care to avoid static electric charges. For non-emergency personnel Emergency procedures: Evacuate unnecessary personnel. For emergency responders Protective
equipment: Equip cleanup crew with proper protection. Environmental precautions Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Methods and material for containment and cleaning up Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools. Reference to other sections See Heading 8. Exposure controls and personal protection

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling
Precautions for safe handling:
Avoid all eye and skin contact and do not breathe vapor and mist. Containers must be properly grounded before beginning transfer. Provide good ventilation in process area to prevent accumulation of vapors. Take precautionary measures against static discharge. Use only non-sparking tools.
Hygiene measures:
Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.
Conditions for safe storage, including any incompatibilities
Technical measures:
Ground/bond container and receiving equipment.
Storage conditions:
Keep container tightly closed.
Incompatible materials:
Storage area:
Store in a well-ventilated place. Store away from heat.
Specific end use(s)
No additional information available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters
2-Methoxyethanol (109-86-4)
USA ACGIH ACGIH TWA (ppm) 0.1 ppm
USA NIOSH NIOSH REL (TWA) (mg/m³) 0.3 mg/m³
USA NIOSH NIOSH REL (TWA) (ppm) 0.1 ppm
USA OSHA OSHA PEL (TWA) (mg/m³) 80 mg/m³
USA OSHA OSHA PEL (TWA) (ppm) 25 ppm
USA IDLH US IDLH (ppm) 200 ppm
Exposure controls
Appropriate engineering controls:
Provide local exhaust or general room ventilation.
Personal protective equipment:
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid all unnecessary exposure.
Hand protection:
Neoprene or nitrile rubber gloves.
Eye protection:
Chemical goggles. Contact lenses should not be worn.
Skin and body protection:
Wear suitable protective clothing.
Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Physical state:
Liquid
Appearance:
Liquid.
Molecular mass:
190.25 g/mol
Color:
Straw. Dark.
Odor:
Mild.
Odor threshold:
No data available
Refractive index:
No data available
pH:
No data available
Relative evaporation rate (butyl acetate=1):
No data available
Melting point:
No data available
Freezing point:
< 0 °C
Boiling point:
124 °C (initial)
Flash point:
39 °C
Auto-ignition temperature:
No data available
Decomposition temperature:
No data available
Flammability (solid, gas):
Flammable liquid and vapor
Vapor pressure:
6.2 mm Hg @ 20°C (methoxyethanol)
Relative vapor density at 20 °C:
2.5 - 2.7
Relative density:
1.01
VOC content:
> 75 %
Solubility:
Reacts with water.
Log Pow:
No data available
Log Kow:
No data available
SECTION 10. STABILITY AND REACTIVITY

Reactivity
No additional information available

Chemical stability
Stable.

Possibility of hazardous reactions
No additional information available

Conditions to avoid
Heat. Sparks. Open flame.

Incompatible materials

Hazardous decomposition products
Organic acid vapors.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Dermal: Harmful in contact with skin. Inhalation:dust,mist: Harmful if inhaled.
CALCIUM METHOXYETHOXIDE, 20% in methoxyethanol (28099-67-4)
ATE US (dermal) 1706.667 mg/kg body weight
ATE US (dust, mist) 2.000 mg/l/4h
2-Methoxyethanol (109-86-4)
LD50 oral rat 2370 mg/kg
LD50 dermal rabbit 1280 mg/kg
LC50 inhalation rat (ppm) 1478 ppm (Exposure time: 7 h)
ATE US (oral) 2370.000 mg/kg body weight
ATE US (dermal) 1280.000 mg/kg body weight
ATE US (gases) 4500.000 ppmV/4h
ATE US (vapors) 11.000 mg/l/4h
ATE US (dust, mist) 1.500 mg/l/4h
Skin corrosion/irritation:
Causes skin irritation.
Serious eye damage/irritation:
Causes serious eye irritation.
Respiratory or skin sensitization:
Not classified
Germ cell mutagenicity:
Not classified
2-Methoxyethanol (109-86-4)
Carcinogenicity:
Not classified
Reproductive toxicity:
May damage fertility or the unborn child.
Specific target organ toxicity (single exposure):
Not classified
Specific target organ toxicity (repeated exposure):
Not classified
Aspiration hazard:
Not classified
Symptoms/injuries If inhaled:
May cause irritation to the respiratory tract.
Symptoms/injuries In case of skin contact:
Causes skin irritation.
Symptoms/injuries In case of eye contact:
Causes serious eye irritation.
Symptoms/injuries after ingestion:
May be harmful if swallowed.
Chronic symptoms:
Methoxyethanol, a hydrolysis product, is known to have a chronic effect on the central nervous system.
Reason for classification:
Expert judgment

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
2-Methoxyethanol (109-86-4)
LC50 fish 1 10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 fish 2 9650 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
Persistence and degradability
No additional information available
Bioaccumulative potential
2-Methoxyethanol (109-86-4)
Log Pow -0.85
Mobility in soil
No additional information available
Other adverse effects
Effect on ozone layer:
No additional information available
Effect on the global warming:
No known ecological damage caused by this product.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Waste disposal recommendations:
Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials:
Avoid release to the environment.

SECTION 14. EXPOSURE CONTROLS/PERSONAL PROTECTION

UN number UN-No.(DOT) :
1993
DOT NA no.
UN1993
UN proper shipping name Proper Shipping Name (DOT) :
Flammable liquids, n.o.s. (CALCIUM METHOXYETHOXIDE, 20% in methoxyethanol) Department of Transportation (DOT) Hazard Classes :
3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT) :
3 - Flammable liquid
DOT Symbols :
G - Identifies PSN requiring a technical name
Packing group (DOT) :
III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx) :
150
DOT Packaging Non Bulk (49 CFR 173.xxx) :
203
DOT Packaging Bulk (49 CFR 173.xxx) :
242
Additional information
Other information :
No supplementary information available.
Transport by sea
DOT Vessel Stowage Location :
A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.
Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) :
60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) :
220 L

SECTION 15. REGULATORY INFORMATION

US Federal regulations
2-Methoxyethanol (109-86-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on United States SARA Section 313
EPA TSCA Regulatory Flag
S - S - indicates a substance that is identified in a proposed or final Significant New Uses Rule.
SARA Section 313 - Emission Reporting
1.0 %
Calcium methoxyethoxide (28099-67-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

International regulations

2-Methoxyethanol (109-86-4)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Sustances List)
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)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian IDL (Ingredient Disclosure List)
Calcium methoxyethoxide (28099-67-4)
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

US State regulations

CALCIUM METHOXYETHOXIDE, 20% in methoxyethanol(28099-67-4)
U.S. - California - Proposition 65 - Carcinogens List
No
U.S. - California - Proposition 65 - Developmental Toxicity
no
U.S. - California - Proposition 65 - Reproductive Toxicity - Female
No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male
No
2-Methoxyethanol (109-86-4)
U.S. - California - Proposition 65 - Carcinogens List
no
U.S. - California - Proposition 65 - Developmental Toxicity
Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female
No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male
Yes
No significance risk level (NSRL)
Calcium methoxyethoxide (28099-67-4)
U.S. - California - Proposition 65 - Carcinogens List
No
U.S. - California - Proposition 65 - Developmental Toxicity
No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female
No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male
No
No significance risk level (NSRL)
2-Methoxyethanol (109-86-4)
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute
U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.