

3-(TRIHYDROXYSILYL)PROPYL METHYLPHOSPHONATE, MONOSODIUM SALT, 42% in water

Safety Data Sheet SIT8378.5

Date of issue: 08/19/2015

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|-----------------|---|
| Product form | : Mixture |
| Physical state | : Liquid |
| Product name | : 3-(TRIHYDROXYSILYL)PROPYL METHYLPHOSPHONATE, MONOSODIUM SALT, 42% in water |
| Product code | : SIT8378.5 |
| Formula | : C4H12NaO6PSi |
| Synonyms | : SODIUM (3-(TRIHYDROXYSILYL)PROPYL)METHYL PHOSPHONATE; TRIHYDROXYSILYLPROPYL METHYLPHOSPHONATE, SODIUM |
| Chemical family | : SILICATE SOLUTION |

1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|------------------------------|---|
| Use of the substance/mixture | : Chemical intermediate For research and industrial use only |
|------------------------------|---|

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number : CHEMTRAC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Flam. Liq. 4 H227
Eye Dam. 1 H318
STOT SE 1 H370

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

GHS08

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H227 - Combustible liquid
H318 - Causes serious eye damage
H370 - Causes damage to organs

Precautionary statements (GHS-US) :

: P280 - Wear protective gloves/protective clothing/eye protection/face protection
P210 - Keep away from heat, open flames, sparks. - No smoking
P260 - Do not breathe vapors
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P307+P311 - If exposed: Call a poison center/doctor
P321 - Specific treatment (see first aid instructions on this label)
P403+P235 - Keep in a cool place
P405 - Store locked up
P501 - Dispose of contents/container to licensed waste disposal facility.
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish

2.3. Other hazards

No additional information available

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2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

| Name | Product identifier | % | Classification (GHS-US) |
|---|---------------------|------|---|
| Water | (CAS No) 7732-18-5 | > 50 | Not classified |
| 3-Trihydroxysilylpropylmethylphosphonate, sodium salt | (CAS No) 84962-98-1 | > 40 | Eye Irrit. 2A, H319 |
| Sodium methylphosphonate | (CAS No) 73750-69-3 | < 5 | Not classified |
| Methanol | (CAS No) 67-56-1 | < 5 | Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 1, H370 STOT SE 3, H336 |

SECTION 4: First aid measures

4.1. 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). Call a POISON CENTER or doctor/physician.

First-aid measures after inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact

: Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact

: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion

: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries

: Causes damage to organs.

Symptoms/injuries after inhalation

: May cause irritation to the respiratory tract. Overexposure may cause: Coughing. Headache. Nausea.

Symptoms/injuries after skin contact

: May cause skin irritation.

Symptoms/injuries after eye contact

: Causes serious eye damage.

Symptoms/injuries after ingestion

: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

NOTE TO PHYSICIAN: The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Water spray. Foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media

: Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard

: Combustible liquid.

5.3. 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

6.1. Personal precautions, protective equipment and emergency procedures

General measures

: Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Protective equipment

: Wear protective equipment as described in Section 8.

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Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

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.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Use only in well ventilated areas. 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.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store locked up.

Incompatible materials : None known.

Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methanol (67-56-1)

| | | |
|-----------|---------------------------------------|-----------------------|
| USA ACGIH | ACGIH TWA (ppm) | 200 ppm |
| USA ACGIH | ACGIH STEL (ppm) | 250 ppm |
| USA NIOSH | NIOSH REL (TWA) (mg/m ³) | 260 mg/m ³ |
| USA NIOSH | NIOSH REL (TWA) (ppm) | 200 ppm |
| USA NIOSH | NIOSH REL (STEL) (mg/m ³) | 325 mg/m ³ |
| USA NIOSH | NIOSH REL (STEL) (ppm) | 250 ppm |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 260 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 200 ppm |
| USA IDLH | US IDLH (ppm) | 6000 ppm |

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

Personal protective equipment : Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential 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 dust and mist (teal cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear solution.

Molecular mass : 238.18 g/mol

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| | |
|---|----------------------------|
| Color | : No data available |
| Odor | : No data available |
| 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 | : < 0 °C |
| Freezing point | : No data available |
| Boiling point | : 61 °C initial (methanol) |
| Flash point | : 79 °C |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Combustible liquid |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : 1.25 |
| Solubility | : Soluble in water. |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |
| Explosion limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Carbon dioxide. Sodium hydroxide. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

| Water (7732-18-5) | |
|---------------------------|--------------------------------|
| LD50 oral rat | > 90 ml/kg |
| Methanol (67-56-1) | |
| LC50 inhalation rat (ppm) | 22500 ppm (Exposure time: 8 h) |
| ATE US (oral) | 100.000 mg/kg body weight |
| ATE US (dermal) | 300.000 mg/kg body weight |
| ATE US (vapors) | 3.000 mg/l/4h |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

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| | |
|--|--|
| 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 |
| Symptoms/injuries after inhalation | : May cause irritation to the respiratory tract. Overexposure may cause: Coughing, Headache, Nausea. |
| Symptoms/injuries after skin contact | : May cause skin irritation. |
| Symptoms/injuries after eye contact | : Causes serious eye damage. |
| Symptoms/injuries after ingestion | : May be harmful if swallowed. |
| Reason for classification | : Expert judgment |

SECTION 12: Ecological information

12.1. Toxicity

| 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 |
| Log Pow | -0.77 |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

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

13.1. Waste treatment methods

| | |
|---------------------------------|--|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| Waste disposal recommendations | : Landfill. 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: Transport information

14.1. UN number

DOT NA no. NA1993

14.2. UN proper shipping name

| | |
|---|--|
| Proper Shipping Name (DOT) | : Combustible liquid, n.o.s. (3-(TRIHYDROXYSILYL)PROPYL METHYLPHOSPHONATE, MONOSODIUM SALT, 42% in water) |
| Department of Transportation (DOT) Hazard Classes | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120 |
| DOT Symbols | : D - Proper shipping name for domestic use only, or to and from Canada, 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) | : 241 |

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14.3. 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 : 60 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

SECTION 15: Regulatory information

15.1. US Federal regulations

3-Trihydroxysilylpropylmethylphosphonate, sodium salt (84962-98-1)

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

Sodium methylphosphonate (73750-69-3)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Water (7732-18-5)

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

Methanol (67-56-1)

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

Listed on United States SARA Section 313

SARA Section 313 - Emission Reporting 1.0 %

15.2. International regulations

3-Trihydroxysilylpropylmethylphosphonate, sodium salt (84962-98-1)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Substances 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 NZIoC (New Zealand Inventory of Chemicals)

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

Sodium methylphosphonate (73750-69-3)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on NZIoC (New Zealand Inventory of Chemicals)

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 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 INSQ (Mexican national Inventory of Chemical Substances)

Water (7732-18-5)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Substances 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 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 INSQ (Mexican national Inventory of Chemical Substances)

Methanol (67-56-1)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Substances 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 Poisous and Deleterious Substances Control Law

Listed on the Canadian IDL (Ingredient Disclosure List)

Listed on INSQ (Mexican national Inventory of Chemical Substances)

Listed on Turkish inventory of chemical

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15.3. US State regulations

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| | |
|---|----|
| 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 |

3-Trihydroxysilylpropylmethylphosphonate, sodium salt (84962-98-1)

| | | | | |
|---|---|---|---|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | No | No | No | |

Sodium methylphosphonate (73750-69-3)

| | | | | |
|---|---|---|---|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | No | No | No | |

Water (7732-18-5)

| | | | | |
|---|---|---|---|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | No | No | No | |

Methanol (67-56-1)

| | | | | |
|---|---|---|---|-----------------------------------|
| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significance risk level (NSRL) |
| No | Yes | No | No | |

SECTION 16: Other information

Abbreviations and acronyms

: Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development.

Full text of H-phrases::

| | |
|----------------------------------|---|
| Acute Tox. 3 (Dermal) | Acute toxicity (dermal) Category 3 |
| Acute Tox. 3 (Inhalation:vapour) | Acute toxicity (inhalation:vapor) Category 3 |
| Acute Tox. 3 (Oral) | Acute toxicity (oral) Category 3 |
| Eye Dam. 1 | Serious eye damage/eye irritation Category 1 |
| Eye Irrit. 2A | Serious eye damage/eye irritation Category 2A |
| Flam. Liq. 2 | Flammable liquids Category 2 |
| Flam. Liq. 4 | Flammable liquids Category 4 |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| STOT SE 1 | Specific target organ toxicity (single exposure) Category 1 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H225 | Highly flammable liquid and vapor |
| H227 | Combustible liquid |
| H301 | Toxic if swallowed |
| H311 | Toxic in contact with skin |
| H315 | Causes skin irritation |

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| | |
|------|-----------------------------------|
| H318 | Causes serious eye damage |
| H319 | Causes serious eye irritation |
| H331 | Toxic if inhaled |
| H336 | May cause drowsiness or dizziness |
| H370 | Causes damage to organs |

HMIS III Rating

| | |
|--------------|---|
| Health | : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given |
| Flammability | : 2 Moderate Hazard |
| Physical | : 0 Minimal Hazard |

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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