

# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/09/2015

Reviewed on 12/09/2015

## 1 Identification

- **Product identifier**
- **Trade name:** TMS, Tetramethylsilane
- **Article number:** 21760
- **CAS Number:**  
75-76-3
- **EC number:**  
200-899-1
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapor.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
Extremely flammable liquid and vapor.
- **Precautionary statements**  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Wear protective gloves / eye protection / face protection.  
Ground/bond container and receiving equipment.  
Keep container tightly closed.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep cool.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

75-76-3 tetramethylsilane

· **Identification number(s)**

· **EC number:** 200-899-1

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:** No special measures required.

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Trade name: TMS, Tetramethylsilane

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### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	Undetermined.

- **Flash point:** -54 °C (-65 °F)

- **Flammability (solid, gaseous):** Not flammable.

- **Ignition temperature:**

**Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

- **Vapor pressure:** Not determined.

- **Density at 20 °C (68 °F):** 0.648 g/cm<sup>3</sup> (5.408 lbs/gal)

- **Relative density** Not determined.

- **Vapour density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

**Water:** Not miscible or difficult to mix.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

**Dynamic:** Not determined.

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<b>Kinematic:</b>	Not determined.
<b>Organic solvents:</b>	100.0 %
<b>VOC content:</b>	100.0 %
	648.0 g/l / 5.41 lb/gl
<b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

Substance is not listed.

- **NTP (National Toxicology Program)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
- **Water hazard class 1 (Self-assessment):** slightly hazardous for water
- **Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN2749
- **UN proper shipping name**
- **DOT** Tetramethylsilane
- **ADR** 2749 Tetramethylsilane
- **IMDG, IATA** TETRAMETHYLSILANE

- **Transport hazard class(es)**

- **DOT**



- **Class** 3 Flammable liquids
- **Label** 3

- **ADR, IMDG, IATA**



- **Class** 3 Flammable liquids
- **Label** 3

- **Packing group**
- **DOT, ADR, IMDG, IATA** I

- **Environmental hazards:**
- **Marine pollutant:** No

- **Special precautions for user** Warning: Flammable liquids
- **Danger code (Kemler):** 33
- **EMS Number:** F-E,S-D

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

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· **Transport/Additional information:**

· **DOT**

· **Quantity limitations**

On passenger aircraft/rail: Forbidden

On cargo aircraft only: 30 L

· **ADR**

· **Excepted quantities (EQ)**

Code: E0

Not permitted as Excepted Quantity

· **IMDG**

· **Limited quantities (LQ)**

0

· **Excepted quantities (EQ)**

Code: E3

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 300 ml

· **UN "Model Regulation":**

UN2749, Tetramethylsilane, 3, I

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**

GHS02

· **Signal word** *Danger*· **Hazard statements***Extremely flammable liquid and vapor.*· **Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**Wear protective gloves / eye protection / face protection.**Ground/bond container and receiving equipment.**Keep container tightly closed.**Use only non-sparking tools.**Take precautionary measures against static discharge.**IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.**In case of fire: Use for extinction: CO2, powder or water spray.**Store in a well-ventilated place. Keep cool.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Date of preparation / last revision** 12/09/2015 / -· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*VOC: Volatile Organic Compounds (USA, EU)*

*Flam. Liq. 1: Flammable liquids, Hazard Category 1*



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.12.2015

Revision: 09.12.2015

## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**

- **Trade name:** TMS, Tetramethylsilane

- **Article number:** 21760

- **CAS Number:**

75-76-3

- **EC number:**

200-899-1

- **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: [info@emsdiasum.com](mailto:info@emsdiasum.com)[www.emsdiasum.com](http://www.emsdiasum.com)

ProSciTech Pty Ltd

11 Carlton Street, Kirwan QLD 4817 Australia

Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emgrid Australia Pty. Ltd.

P.O. Box 118

The Patch VIC 3792

Australia

Tel: 03 9752 1785

Fax: 03 9752 1784

Website: [www.emgrid.com.au](http://www.emgrid.com.au)

- **Further information obtainable from:** Product safety department

- **Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS02 flame

*Flam. Liq. 1 H224 Extremely flammable liquid and vapour.*

- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

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## · Hazard pictograms



GHS02

· Signal word *Danger*

## · Hazard statements

*Extremely flammable liquid and vapour.*

## · Precautionary statements

*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**Wear protective gloves / eye protection / face protection.**Ground/bond container and receiving equipment.**Keep container tightly closed.**Use only non-sparking tools.**Take precautionary measures against static discharge.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**In case of fire: Use for extinction: CO2, powder or water spray.**Store in a well-ventilated place. Keep cool.**Dispose of contents/container in accordance with local/regional/national/international regulations.*

## · Other hazards

## · Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

### 3 Composition/information on ingredients

· Chemical characterisation: *Substances*· CAS No. *Description*

75-76-3 tetramethylsilane

## · Identification number(s)

· EC number: 200-899-1

### 4 First aid measures

## · Description of first aid measures

· After inhalation: *Supply fresh air; consult doctor in case of complaints.*· After skin contact: *Generally the product does not irritate the skin.*· After eye contact: *Rinse opened eye for several minutes under running water.*· After swallowing: *If symptoms persist consult doctor.*

## · Information for doctor:

· Most important symptoms and effects, both acute and delayed *No further relevant information available.*

· Indication of any immediate medical attention and special treatment needed

*No further relevant information available.*

### 5 Firefighting measures

## · Extinguishing media

· Suitable extinguishing agents: *CO2, sand, extinguishing powder. Do not use water.*

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Trade name: TMS, Tetramethylsilane

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- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Do not seal receptacle gas tight.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

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Trade name: TMS, Tetramethylsilane

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· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	Undetermined.

· **Flash point:** -54 °C

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapour pressure:** Not determined.

<b>Density at 20 °C:</b>	0.648 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.

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Trade name: TMS, Tetramethylsilane

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- |   |  |
|---|--|
| · <b>Solubility in / Miscibility with water:</b>  | Not miscible or difficult to mix.          |
| · <b>Partition coefficient (n-octanol/water):</b> | Not determined.                            |
| · <b>Viscosity:</b>                               |  |
| <b>Dynamic:</b>                                   | Not determined.                            |
| <b>Kinematic:</b>                                 | Not determined.                            |
| · <b>Solvent content:</b>                         |  |
| <b>Organic solvents:</b>                          | 100.0 %                                    |
| <b>VOC (EC)</b>                                   | 100.00 %                                   |
| · <b>Other information</b>                        | No further relevant information available. |

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**
- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

AU

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### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

· <b>UN-Number</b>	
· <b>ADG, IMDG, IATA</b>	UN2749
· <b>UN proper shipping name</b>	
· <b>ADG</b>	2749 TETRAMETHYLSILANE
· <b>IMDG, IATA</b>	TETRAMETHYLSILANE
· <b>Transport hazard class(es)</b>	
· <b>ADG, IMDG, IATA</b>	
	
· <b>Class</b>	3 Flammable liquids.
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>ADG, IMDG, IATA</b>	I
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Flammable liquids.
· <b>Danger code (Kemler):</b>	33
· <b>EMS Number:</b>	F-E,S-D
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>Transport category</b>	1
· <b>Tunnel restriction code</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml

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· UN "Model Regulation": UN2749, TETRAMETHYLSILANE, 3, I

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Australian Inventory of Chemical Substances**

Substance is listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

Substance is not listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** *Danger*

· **Hazard statements**

*Extremely flammable liquid and vapour.*

· **Precautionary statements**

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

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Wear protective gloves / eye protection / face protection.*

*Ground/bond container and receiving equipment.*

*Keep container tightly closed.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep cool.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

Flam. Liq. 1: Flammable liquids, Hazard Category 1

# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/09/2015

Reviewed on 12/09/2015

## 1 Identification

- **Product identifier**
- **Trade name:** TMS, Tetramethylsilane
- **Article number:** 21760
- **CAS Number:**  
75-76-3
- **EC number:**  
200-899-1
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapor.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Not applicable.



Extremely flammable

Extremely flammable.

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

- **Code letter and hazard designation of product:**



Extremely flammable

- **Risk phrases:**

Extremely flammable.

- **Safety phrases:**

Keep in a cool place.  
Keep away from heat.

(Contd. on page 2)

CA



# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/09/2015

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**Trade name: TMS, Tetramethylsilane**

(Contd. of page 1)

Keep away from sources of ignition - No smoking.  
This material and its container must be disposed of as hazardous waste.

· **Hazard description:**

· **WHMIS-symbols:**

B2 - Flammable liquid



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

75-76-3 tetramethylsilane

· **Identification number(s)**

· **EC number:** 200-899-1

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

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# Safety Data Sheet

## acc. to OSHA HCS

Printing date 12/09/2015

Reviewed on 12/09/2015

**Trade name: TMS, Tetramethylsilane**

(Contd. of page 2)

- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 12/09/2015

**Trade name: TMS, Tetramethylsilane**

(Contd. of page 3)

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	Undetermined.

· **Flash point:** -54 °C

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

· **Vapor pressure:** Not determined.

<b>Density at 20 °C:</b>	0.648 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Evaporation rate</b>	Not determined.

· **Solubility in / Miscibility with**

**Water:** Not miscible or difficult to mix.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/09/2015

Reviewed on 12/09/2015

**Trade name: TMS, Tetramethylsilane**

(Contd. of page 4)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not determined.
  - Kinematic:** Not determined.
  - Organic solvents:** 100.0 %
- **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
  - on the skin:** No irritant effect.
  - on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

### · **IARC (International Agency for Research on Cancer)**

Substance is not listed.

### · **NTP (National Toxicology Program)**

Substance is not listed.

### · **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
  - Water hazard class 1 (Self-assessment): slightly hazardous for water
  - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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# Safety Data Sheet

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Printing date 12/09/2015

Reviewed on 12/09/2015

Trade name: TMS, Tetramethylsilane



(Contd. of page 5)

- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |                            |
|---|----------------------------|
| <b>· UN-Number</b>  | UN2749                     |
| <b>· DOT, TDG, IMDG, IATA</b>   |                            |
| <b>· UN proper shipping name</b>  | Tetramethylsilane          |
| <b>· DOT</b>  | 2749 Tetramethylsilane     |
| <b>· TDG</b>  | TETRAMETHYLSILANE          |
| <b>· IMDG, IATA</b>   |                            |
| <b>· Transport hazard class(es)</b>   |                            |
| <b>· DOT</b>  |                            |
|  |                            |
| <b>· Class</b>  | 3 Flammable liquids        |
| <b>· Label</b>  | 3                          |
| <b>· TDG, IMDG, IATA</b>  |                            |
|  |                            |
| <b>· Class</b>  | 3 Flammable liquids        |
| <b>· Label</b>  | 3                          |
| <b>· Packing group</b>  | I                          |
| <b>· DOT, TDG, IMDG, IATA</b>   |                            |
| <b>· Environmental hazards:</b>   |                            |
| <b>· Marine pollutant:</b>  | No                         |
| <b>· Special precautions for user</b>   | Warning: Flammable liquids |
| <b>· Danger code (Kemler):</b>  | 33                         |
| <b>· EMS Number:</b>  | F-E,S-D                    |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.            |

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Trade name: TMS, Tetramethylsilane

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· **Transport/Additional information:**

· **DOT**

· **Quantity limitations**

On passenger aircraft/rail: Forbidden  
On cargo aircraft only: 30 L

· **TDG**

· **Excepted quantities (EQ)**

Code: E0  
Not permitted as Excepted Quantity

· **IMDG**

· **Limited quantities (LQ)**

0

· **Excepted quantities (EQ)**

Code: E3  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 300 ml

· **UN "Model Regulation":**

UN2749, Tetramethylsilane, 3, I

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 12/09/2015

Reviewed on 12/09/2015

**Trade name: TMS, Tetramethylsilane**

(Contd. of page 7)

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Extremely flammable

· **Risk phrases:**

Extremely flammable.

· **Safety phrases:**

Keep in a cool place.

Keep away from heat.

Keep away from sources of ignition - No smoking.

This material and its container must be disposed of as hazardous waste.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision 12/09/2015 / -**

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

Flam. Liq. 1: Flammable liquids, Hazard Category 1

CA

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.12.2015

Revision: 09.12.2015

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

- **1.1 Product identifier**
- **Trade name:** TMS, Tetramethylsilane
- **Article number:** 21760
- **CAS Number:**  
75-76-3
- **EC number:**  
200-899-1
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
H224 Extremely flammable liquid and vapour.
- **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P240	Ground/bond container and receiving equipment.

(Contd. on page 2)



# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 09.12.2015

Revision: 09.12.2015

**Trade name: TMS, Tetramethylsilane**

(Contd. of page 1)

**P303+P361+P353 IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water/shower.

**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
75-76-3 tetramethylsilane
- **Identification number(s)**
- **EC number:** 200-899-1

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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**Safety data sheet**  
according to 1907/2006/EC, Article 31

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Revision: 09.12.2015

Trade name: TMS, Tetramethylsilane

(Contd. of page 2)

See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
  - Keep ignition sources away - Do not smoke.
  - Protect from heat.
  - Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
  - Keep container tightly sealed.
  - Do not seal receptacle gas tight.
  - Store in cool, dry conditions in well sealed receptacles.
  - Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

GB

(Contd. on page 4)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.12.2015

Revision: 09.12.2015

Trade name: TMS, Tetramethylsilane

(Contd. of page 3)

### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

##### · General Information

##### · Appearance:

· <b>Form:</b>	Liquid
· <b>Colour:</b>	Colourless
· <b>Odour:</b>	Characteristic
· <b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.

##### · Change in condition

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	Undetermined.

· **Flash point:** -54 °C

· **Flammability (solid, gaseous):** Not applicable.

##### · Ignition temperature:

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

##### · Explosion limits:

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Vapour pressure:** Not determined.

· **Density at 20 °C:** 0.648 g/cm<sup>3</sup>

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

##### · Solubility in / Miscibility with water:

Not miscible or difficult to mix.

· **Partition coefficient (n-octanol/water):** Not determined.

##### · Viscosity:

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

##### · Solvent content:

· <b>Organic solvents:</b>	100.0 %
· <b>VOC (EC)</b>	100.00 %

· **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

#### · 10.1 Reactivity

#### · 10.2 Chemical stability

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

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**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 09.12.2015

Revision: 09.12.2015

Trade name: TMS, Tetramethylsilane

(Contd. of page 4)

- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- |                                       |                        |
|---------------------------------------|------------------------|
| · <b>14.1 UN-Number</b>               |                        |
| · <b>ADR, IMDG, IATA</b>              | UN2749                 |
| · <b>14.2 UN proper shipping name</b> |                        |
| · <b>ADR</b>                          | 2749 TETRAMETHYLSILANE |
| · <b>IMDG, IATA</b>                   | TETRAMETHYLSILANE      |

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GB

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## · 14.3 Transport hazard class(es)

· ADR, IMDG, IATA



· Class 3 Flammable liquids.  
· Label 3

## · 14.4 Packing group

· ADR, IMDG, IATA I

## · 14.5 Environmental hazards:

· Marine pollutant: No

## · 14.6 Special precautions for user

Warning: Flammable liquids.  
· Danger code (Kemler): 33  
· EMS Number: F-E,S-D

## · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

## · Transport/Additional information:

## · ADR

· Limited quantities (LQ) 0  
· Excepted quantities (EQ) Code: E0  
Not permitted as Excepted Quantity  
· Transport category 1  
· Tunnel restriction code D/E

## · IMDG

· Limited quantities (LQ) 0  
· Excepted quantities (EQ) Code: E3  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 300 ml

· UN "Model Regulation": UN2749, TETRAMETHYLSILANE, 3, I

### SECTION 15: Regulatory information

## · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I Substance is not listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

## · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

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**Safety data sheet**  
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*IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**Flam. Liq. 1: Flammable liquids, Hazard Category 1*

GB

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 09.12.2015

Herziening van: 09.12.2015

## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **1.1 Productidentificatie**
- **Handelsnaam:** TMS, Tetramethylsilane
- **Artikelnummer:** 21760
- **CAS-nummer:**  
75-76-3
- **EC-nummer:**  
200-899-1
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**  
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Aurion**  
Binnenhaven 5  
6709 PD Wageningen  
The Netherlands  
Tel: 31 317 415094  
Fax: 31 317 415955  
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



Flam. Liq. 1 H224 Zeer licht ontvlambare vloeistof en damp.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**  
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



- **Signaalwoord** Gevaar
- **Gevarenaanduidingen**  
H224 Zeer licht ontvlambare vloeistof en damp.

(Vervolg op blz. 2)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

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**Handelsnaam: TMS, Tetramethylsilane**

(Vervolg van blz. 1)

- **Veiligheidsaanbevelingen**

- P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.
- P241 Explosie veilige elektrische/ventilatie-/verlichtings- apparatuur gebruiken.
- P280 Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen.
- P240 Opslag- en opvangreservoir aarden.
- P303+P361+P353 **BIJ CONTACT MET DE HUID (of het haar):** verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen/afdouchen.
- P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

- **2.3 Andere gevaren**

- **Resultaten van PBT- en zPzB-beoordeling**

- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**

- **CAS-Nr. omschrijving**  
75-76-3 tetramethylsilaan
- **Identificatienummer(s)**
- **EC-nummer:** 200-899-1

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**

- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.
- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid
- **Na oogcontact:** Ogen bij geopend ooglid meerdere minuten met stromend water spoelen
- **Na inslikken:** Als de klachten niet minderen, een arts raadplegen
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**  
Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**

- **Geschikte blusmiddelen:** CO<sub>2</sub>, zand, bluspoeder. Geen water gebruiken.
- **Blusmiddelen die uit veiligheidsoogpunt niet geschikt zijn:** Krachtige waterstraal
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**  
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweelieden**
- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures**

- **Beschermende kleding aantrekken.** Niet beschermde personen op afstand houden.
- **6.2 Milieuvoorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.

(Vervolg op blz. 3)



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(Vervolg van blz. 2)

- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.  
Voor voldoende ventilatie zorgen.  
Niet met water of waterachtige reinigingsmiddelen wegspoelen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Tanks voorzichtig openen en behandelen.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**  
Onststekingsbronnen op afstand houden - niet roken.  
Beschermen tegen hitte.  
Maatregelen treffen tegen ontlading van statische elektriciteit.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Op een koele plaats bewaren.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:**  
Tanks ondoordringbaar gesloten houden.  
Tanks niet gasdicht afsluiten.  
Koel en droog bewaren in goed gesloten vaten.  
Tegen hitte en directe zonnestralen beschermen.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** Vervalt.
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
Vóór de pauze en aan het einde van werktijd handen wassen.
- **Ademhalingsbescherming:** Bij onvoldoende ventilatie ademhalingsbescherming.
- **Handbescherming:**  
Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.
- **Handschoenmateriaal**  
De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
- **Doordringingstijd van het handschoenmateriaal**  
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

(Vervolg op blz. 4)

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## · Oogbescherming:



Nauw aansluitende veiligheidsbril

### RUBRIEK 9: Fysische en chemische eigenschappen

## · 9.1 Informatie over fysische en chemische basiseigenschappen

## · Algemene gegevens

## · Voorkomen:

Vorm:	Vloeistof
Kleur:	Kleurloos
Reuk:	Karakteristiek
Geurdrempelwaarde:	Niet bepaald.

· pH-waarde: Niet bepaald.

## · Toestandsverandering

Smeltpunt/smeltbereik:	Niet bepaald.
Kookpunt/kookpuntbereik:	Niet bepaald.

· Vlampunt: -54 °C

· Ontvlambaarheid (vast, gasvormig): Niet bruikbaar.

## · Ontstekingstemperatuur:

Ontbindingstemperatuur: Niet bepaald.

· Zelfonsteking: Niet bepaald.

· Ontploffingsgevaar: Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.

## · Ontploffingsgrenzen:

Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.

· Dampspanning: Niet bepaald.

Dichtheid bij 20 °C: 0,648 g/cm<sup>3</sup>

· Relatieve dichtheid: Niet bepaald.

· Dampdichtheid: Niet bepaald.

· Verdampingsnelheid: Niet bepaald.

## · Oplosbaarheid in/mengbaarheid met

Water: Niet resp. gering mengbaar.

· Verdelingscoëfficiënt (n-octanol/water): Niet bepaald.

## · Viscositeit

Dynamisch: Niet bepaald.

Kinematisch: Niet bepaald.

## · Oplosmiddelgehalte:

Organisch oplosmiddel:	100,0 %
VOC (EG)	100,00 %

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**· 9.2 Overige informatie**

Geen verdere relevante informatie verkrijgbaar.

**RUBRIEK 10: Stabiliteit en reactiviteit**

- **10.1 Reactiviteit**
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

**RUBRIEK 11: Toxicologische informatie**

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Geen prikkelend effect.
- **Ernstig oogletsel/oogirritatie** Geen prikkelend effect.
- **Sensibilisatie van de luchtwegen/de huid** Geen effect van overgevoeligheid bekend.

**RUBRIEK 12: Ecologische informatie**

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**  
Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.  
Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein  
Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

**RUBRIEK 13: Instructies voor verwijdering**

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

NL

(Vervolg op blz. 6)

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## RUBRIEK 14: Informatie met betrekking tot het vervoer

· 14.1 VN-nummer	UN2749
· ADR, IMDG, IATA	
· 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN	
· ADR	2749 TETRAMETHYLSILAAN
· IMDG, IATA	TETRAMETHYLSILANE
· 14.3 Transportgevarenklasse(n)	
· ADR, IMDG, IATA	
	
· klasse	3 Brandbare vloeistoffen
· Etiket	3
· 14.4 Verpakkingsgroep:	
· ADR, IMDG, IATA	I
· 14.5 Milieugevaren:	
· Marine pollutant:	Neen
· 14.6 Bijzondere voorzorgen voor de gebruiker	Waarschuwing: Brandbare vloeistoffen
· Kemler-getal:	33
· EMS-nummer:	F-E,S-D
· 14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code	Niet bruikbaar.
· Transport/verdere gegevens:	
· ADR	
· Beperkte hoeveelheden (LQ)	0
· Uitgezonderde hoeveelheden (EQ)	Code: E0 Niet toegestaan als vrijgestelde hoeveelheid
· Vervoerscategorie	1
· Tunnelbeperkingscode	D/E
· IMDG	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· VN "Model Regulation":	UN2749, TETRAMETHYLSILAAN, 3, I

## RUBRIEK 15: Regelgeving

· 15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel

· SZW-lijst van kankerverwekkende stoffen

De stof is niet aanwezig.

· SZW-lijst van mutagene stoffen

De stof is niet aanwezig.

(Vervolg op blz. 7)

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Herziening van: 09.12.2015

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· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Nationale voorschriften:**

· **Gevaarklasse v. water: Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A**

· **15.2 Chemischeveiligheidsbeoordeling: Een chemische veiligheidsbeoordeling is niet uitgevoerd.**

## RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Afkortingen en acroniemen:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

Flam. Liq. 1: Flammable liquids, Hazard Category 1

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 09.12.2015

Révision: 09.12.2015

### SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** TMS, Tetramethylsilane
- **Code du produit:** 21760
- **No CAS:**  
75-76-3
- **Numéro CE:**  
200-899-1
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
*Pas d'autres informations importantes disponibles.*
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

*Flam. Liq. 1 H224 Liquide et vapeurs extrêmement inflammables.*

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02

- **Mention d'avertissement** Danger
- **Mentions de danger**  
H224 Liquide et vapeurs extrêmement inflammables.
- **Conseils de prudence**

P210	Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'inflammation. Ne pas fumer.
P241	Utiliser du matériel électrique/de ventilation/d'éclairage/antidéflagrant.
P280	Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.
P240	Mise à la terre/liaison équipotentielle du récipient et du matériel de réception.

(suite page 2)

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 09.12.2015

Révision: 09.12.2015

**Nom du produit:** TMS, Tetramethylsilane

(suite de la page 1)

P303+P361+P353 **EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux):** Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau/Se doucher.

P501 Éliminer le contenu/réceptif conformément à la réglementation locale/régionale/nationale/internationale.

- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### SECTION 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
75-76-3 tétraméthylsilane
- **Code(s) d'identification**
- **Numéro CE:** 200-899-1

### SECTION 4: Premiers secours

- **4.1 Description des premiers secours**
- **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.
- **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.
- **Après contact avec les yeux:**  
Rincer les yeux, sous l'eau courante, pendant plusieurs minutes, en écartant bien les paupières.
- **Après ingestion:** Si les troubles persistent, consulter un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### SECTION 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:** CO<sub>2</sub>, sable, poudre d'extinction. Ne pas utiliser d'eau.
- **Produits extincteurs déconseillés pour des raisons de sécurité:** Jet d'eau à grand débit
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

### SECTION 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**  
Porter un équipement de sécurité. Eloigner les personnes non protégées.
- **6.2 Précautions pour la protection de l'environnement:**  
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).  
Assurer une aération suffisante.  
Ne pas rincer à l'eau ou aux produits nettoyants aqueux.

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· **6.4 Référence à d'autres sections**

Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.

Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### SECTION 7: Manipulation et stockage

· **7.1 Précautions à prendre pour une manipulation sans danger**

Ouvrir et manipuler les récipients avec précaution.

· **Préventions des incendies et des explosions:**

Tenir à l'abri des sources d'inflammation - ne pas fumer.

Tenir à l'abri de la chaleur.

Prendre des mesures contre les charges électrostatiques.

· **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**

· **Stockage:**

· **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.

· **Indications concernant le stockage commun:** Pas nécessaire.

· **Autres indications sur les conditions de stockage:**

Tenir les emballages hermétiquement fermés.

Ne pas fermer les emballages de telle sorte qu'ils soient hermétiques aux gaz.

Stocker au frais et au sec dans des fûts bien fermés.

Protéger de la forte chaleur et du rayonnement direct du soleil.

· **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### SECTION 8: Contrôles de l'exposition/protection individuelle

· **Indications complémentaires pour l'agencement des installations techniques:**

Sans autre indication, voir point 7.

· **8.1 Paramètres de contrôle**

· **Composants présentant des valeurs-seuil à surveiller par poste de travail:** Néant

· **Remarques supplémentaires:**

Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

· **8.2 Contrôles de l'exposition**

· **Équipement de protection individuel:**

· **Mesures générales de protection et d'hygiène:** Se laver les mains avant les pauses et en fin de travail.

· **Protection respiratoire:** Utiliser un appareil de protection respiratoire si la ventilation est insuffisante.

· **Protection des mains:**

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

· **Matériau des gants**

Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

· **Temps de pénétration du matériau des gants**

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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## · Protection des yeux:



Lunettes de protection hermétiques

### SECTION 9: Propriétés physiques et chimiques

## · 9.1 Informations sur les propriétés physiques et chimiques essentielles

## · Indications générales

## · Aspect:

Forme:	Liquide
Couleur:	Incolore
Odeur:	Caractéristique
Seuil olfactif:	Non déterminé.

· valeur du pH: Non déterminé.

## · Changement d'état

Point de fusion:	Non déterminé.
Point d'ébullition:	Non déterminé.

· Point d'éclair -54 °C

· Inflammabilité (solide, gazeux): Non applicable.

## · Température d'inflammation:

Température de décomposition: Non déterminé.

· Auto-inflammation: Non déterminé.

· Danger d'explosion: Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.

## · Limites d'explosion:

Inférieure:	Non déterminé.
Supérieure:	Non déterminé.

· Pression de vapeur: Non déterminé.

Densité à 20 °C:	0,648 g/cm <sup>3</sup>
Densité relative:	Non déterminé.
Densité de vapeur:	Non déterminé.
Vitesse d'évaporation:	Non déterminé.

· Solubilité dans/miscibilité avec l'eau: Pas ou peu miscible

· Coefficient de partage (n-octanol/eau): Non déterminé.

## · Viscosité:

Dynamique:	Non déterminé.
Cinématique:	Non déterminé.

## · Teneur en solvants:

Solvants organiques:	100,0 %
VOC (CE)	100,00 %

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· **9.2 Autres informations** Pas d'autres informations importantes disponibles.

### SECTION 10: Stabilité et réactivité

- **10.1 Réactivité**
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### SECTION 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë**
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée** Pas d'effet d'irritation.
- **Lésions oculaires graves/irritation oculaire** Pas d'effet d'irritation.
- **Sensibilisation respiratoire ou cutanée** Aucun effet de sensibilisation connu.

### SECTION 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**  
Catégorie de pollution des eaux 1 (D) (Classification propre): peu polluant  
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### SECTION 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

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### SECTION 14: Informations relatives au transport

<ul style="list-style-type: none"> <li>· 14.1 No ONU</li> <li>· ADR, IMDG, IATA</li> </ul>	UN2749
<ul style="list-style-type: none"> <li>· 14.2 Nom d'expédition des Nations unies</li> <li>· ADR</li> <li>· IMDG, IATA</li> </ul>	2749 TÉTRAMÉTHYLSILANE TETRAMETHYLSILANE
<ul style="list-style-type: none"> <li>· 14.3 Classe(s) de danger pour le transport</li> <li>· ADR, IMDG, IATA</li> </ul>	
	
<ul style="list-style-type: none"> <li>· Classe</li> <li>· Étiquette</li> </ul>	3 Liquides inflammables. 3
<ul style="list-style-type: none"> <li>· 14.4 Groupe d'emballage</li> <li>· ADR, IMDG, IATA</li> </ul>	I
<ul style="list-style-type: none"> <li>· 14.5 Dangers pour l'environnement:</li> <li>· Marine Pollutant:</li> </ul>	Non
<ul style="list-style-type: none"> <li>· 14.6 Précautions particulières à prendre par l'utilisateur</li> <li>· Indice Kemler:</li> <li>· No EMS:</li> </ul>	Attention: Liquides inflammables. 33 F-E,S-D
<ul style="list-style-type: none"> <li>· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC</li> </ul>	Non applicable.
· Indications complémentaires de transport:	
<ul style="list-style-type: none"> <li>· ADR</li> <li>· Quantités limitées (LQ)</li> <li>· Quantités exceptées (EQ)</li> <li>· Catégorie de transport</li> <li>· Code de restriction en tunnels</li> </ul>	0 Code: E0 Non autorisé en tant que quantité exceptée 1 D/E
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	0 Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
<ul style="list-style-type: none"> <li>· "Règlement type" de l'ONU:</li> </ul>	UN2749, TÉTRAMÉTHYLSILANE, 3, I

### SECTION 15: Informations réglementaires

- 15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement
- Directive 2012/18/UE
- Substances dangereuses désignées - ANNEXE I la substance n'est pas comprise

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**· 15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.****SECTION 16: Autres informations**

*Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.*

**· Acronymes et abréviations:***ADR: Accord européen sur le transport des marchandises dangereuses par Route**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**Flam. Liq. 1: Flammable liquids, Hazard Category 1*

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### ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname:** TMS, Tetramethylsilane
- **Artikelnummer:** 21760
- **CAS-Nummer:**  
75-76-3
- **EG-Nummer:**  
200-899-1
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**  
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany  
Tel: +49(0)89 18 93 668-0  
safety@scienceservices.de
- 24h Giftnotruf Munchen: +49 (0)89 19240  
Toxikologische Abteilung der II. Medizinischen Klinik  
rechts der Isar, Munchen. - www.toxinfo.org
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 1 H224 Flüssigkeit und Dampf extrem entzündbar.

- **2.2 Kennzeichnungselemente**
- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**  
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.
- **Gefahrenpiktogramme**



GHS02

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- **Signalwort Gefahr**
- **Gefahrenhinweise**  
H224 Flüssigkeit und Dampf extrem entzündbar.
- **Sicherheitshinweise**
  - P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.
  - P241 Explosionsgeschützte elektrische Geräte/Lüftungsanlagen/Beleuchtungsanlagen verwenden.
  - P280 Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen.
  - P240 Behälter und zu befüllende Anlage erden.
  - P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.
  - P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.
- **2.3 Sonstige Gefahren**
- **Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.

### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

- **3.1 Chemische Charakterisierung: Stoffe**
- **CAS-Nr. Bezeichnung**  
75-76-3 Tetramethylsilan
- **Identifikationsnummer(n)**
- **EG-Nummer:** 200-899-1

### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
- **Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.
- **Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.
- **Nach Augenkontakt:** Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.
- **Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.
- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**  
Keine weiteren relevanten Informationen verfügbar.
- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**  
Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:** CO<sub>2</sub>, Sand, Löschpulver. Kein Wasser verwenden.
- **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser im Vollstrahl
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

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### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
- **6.2 Umweltschutzmaßnahmen:** Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.  
Für ausreichende Lüftung sorgen.  
Nicht mit Wasser oder wässrigen Reinigungsmitteln wegspülen.
- **6.4 Verweis auf andere Abschnitte**  
Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung** Behälter mit Vorsicht öffnen und handhaben.
- **Hinweise zum Brand- und Explosionsschutz:**  
Zündquellen fernhalten - nicht rauchen.  
Vor Hitze schützen.  
Maßnahmen gegen elektrostatische Aufladung treffen.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**  
· **Anforderung an Lagerräume und Behälter:** An einem kühlen Ort lagern.  
· **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**  
Behälter dicht geschlossen halten.  
Behälter nicht gasdicht verschließen.  
In gut verschlossenen Gebinden kühl und trocken lagern.  
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **Lagerklasse:**  
· **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Hochentzündlich
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **8.1 Zu überwachende Parameter**
- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:** Entfällt.
- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:** Vor den Pausen und bei Arbeitende Hände waschen.
- **Atemschutz:** Bei unzureichender Belüftung Atemschutz.
- **Handschutz:**  
Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.  
Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

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Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

- **Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

- **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

- **Augenschutz:**



Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

- **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**

- **Allgemeine Angaben**

- **Aussehen:**

Form: Flüssigkeit

Farbe: Farblos

- Geruch: Charakteristisch

- Geruchsschwelle: Nicht bestimmt.

- pH-Wert: Nicht bestimmt.

- **Zustandsänderung**

Schmelzpunkt/Schmelzbereich: Nicht bestimmt.

Siedepunkt/Siedebereich: Nicht bestimmt.

- Flammpunkt: -54 °C

- Entzündlichkeit (fest, gasförmig): Nicht anwendbar.

- **Zündtemperatur:**

Zersetzungstemperatur: Nicht bestimmt.

- Selbstentzündlichkeit: Nicht bestimmt.

- **Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.

- **Explosionsgrenzen:**

Untere: Nicht bestimmt.

Obere: Nicht bestimmt.

- Dampfdruck: Nicht bestimmt.

- Dichte bei 20 °C: 0,648 g/cm<sup>3</sup>

- Relative Dichte: Nicht bestimmt.

- Dampfdichte: Nicht bestimmt.

- Verdampfungsgeschwindigkeit: Nicht bestimmt.

- **Löslichkeit in / Mischbarkeit mit**

Wasser: Nicht bzw. wenig mischbar.

- Verteilungskoeffizient (n-Octanol/Wasser): Nicht bestimmt.

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- |                               |  |
|-------------------------------|--|
| <b>· Viskosität:</b>          |  |
| <b>Dynamisch:</b>             | Nicht bestimmt.                                    |
| <b>Kinematisch:</b>           | Nicht bestimmt.                                    |
| <b>· Lösemittelgehalt:</b>    |  |
| <b>Organische Lösemittel:</b> | 100,0 %  |
| <b>VOC (EU)</b>               | 100,00 %   |
| <b>· 9.2 Sonstige Angaben</b> | Keine weiteren relevanten Informationen verfügbar. |

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Keine Reizwirkung.
- **Schwere Augenschädigung/-reizung** Keine Reizwirkung.
- **Sensibilisierung der Atemwege/Haut** Keine sensibilisierende Wirkung bekannt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 1 (Selbsteinstufung): schwach wassergefährdend  
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

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(Fortsetzung auf Seite 6)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 09.12.2015

überarbeitet am: 09.12.2015


Handelsname: TMS, Tetramethylsilane

(Fortsetzung von Seite 5)

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

· <b>14.1 UN-Nummer</b> · <b>ADR, IMDG, IATA</b>	UN2749
· <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b> · <b>ADR</b> · <b>IMDG, IATA</b>	2749 TETRAMETHYLSILAN TETRAMETHYLSILANE
· <b>14.3 Transportgefahrenklassen</b> · <b>ADR, IMDG, IATA</b>	
	
· <b>Klasse</b> · <b>Gefahrzettel</b>	3 Entzündbare flüssige Stoffe 3
· <b>14.4 Verpackungsgruppe</b> · <b>ADR, IMDG, IATA</b>	I
· <b>14.5 Umweltgefahren:</b> · <b>Marine pollutant:</b>	Nein
· <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b> · <b>Kemler-Zahl:</b> · <b>EMS-Nummer:</b>	Achtung: Entzündbare flüssige Stoffe 33 F-E,S-D
· <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code</b>	Nicht anwendbar.
· <b>Transport/weitere Angaben:</b>	
· <b>ADR</b> · <b>Begrenzte Menge (LQ)</b> · <b>Freigestellte Mengen (EQ)</b>	0 Code: E0 In freigestellten Mengen nicht zugelassen
· <b>Beförderungskategorie</b> · <b>Tunnelbeschränkungscode</b>	1 D/E
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	0 Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml

(Fortsetzung auf Seite 7)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 09.12.2015

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**Handelsname: TMS, Tetramethylsilane**

(Fortsetzung von Seite 6)

· **UN "Model Regulation":** UN2749, TETRAMETHYLSILAN, 3, I

### ABSCHNITT 15: Rechtsvorschriften

· **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

· **Richtlinie 2012/18/EU**

· **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.

· **Nationale Vorschriften:**

· **Technische Anleitung Luft:**

Klasse	Anteil in %
NK	100,0

· **Wassergefährdungsklasse: WGK 1 (Selbsteinstufung):** schwach wassergefährdend.

· **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronyme:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

Flam. Liq. 1: Flammable liquids, Hazard Category 1

DE

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 09.12.2015

Revisione: 09.12.2015

### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** TMS, Tetramethylsilane

· **Articolo numero:** 21760

· **Numero CAS:**

75-76-3

· **Numeri CE:**

200-899-1

· **1.2 Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: [info@emsdiasum.com](mailto:info@emsdiasum.com)

[www.emsdiasum.com](http://www.emsdiasum.com)

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: [www.sichim.com](http://www.sichim.com)

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 1 H224 Liquido e vapori altamente infiammabili.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS02

· **Avvertenza Pericolo**

· **Indicazioni di pericolo**

H224 Liquido e vapori altamente infiammabili.

(continua a pagina 2)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

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**Denominazione commerciale: TMS, Tetramethylsilane**

(Segue da pagina 1)

**· Consigli di prudenza**

- P210 *Tenere lontano da fonti di calore, superfici riscaldate, scintille, fiamme e altre fonti di innesco. Vietato fumare.*
- P241 *Utilizzare impianti elettrici/di ventilazione/d'illuminazione/a prova di esplosione.*
- P280 *Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.*
- P240 *Mettere a terra/massa il contenitore e il dispositivo ricevente.*
- P303+P361+P353 *IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.*
- P501 *Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.*

**· 2.3 Altri pericoli**

**· Risultati della valutazione PBT e vPvB**

· **PBT:** Non applicabile.

· **vPvB:** Non applicabile.

**SEZIONE 3: Composizione/informazioni sugli ingredienti**

**· 3.1 Caratteristiche chimiche: Sostanze**

**· Numero CAS**

75-76-3 tetrametilsilano

**· Numeri di identificazione**

· **Numeri CE:** 200-899-1

**SEZIONE 4: Misure di primo soccorso**

**· 4.1 Descrizione delle misure di primo soccorso**

- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
- **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.
- **Contatto con gli occhi:** Lavare con acqua corrente per alcuni minuti tenendo le palpebre ben aperte.
- **Ingestione:** Se il dolore persiste consultare il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
Non sono disponibili altre informazioni.

**SEZIONE 5: Misure antincendio**

**· 5.1 Mezzi di estinzione**

· **Mezzi di estinzione idonei:** CO<sub>2</sub>, sabbia, polvere. Non usare acqua.

· **Mezzi di estinzione inadatti per motivi di sicurezza:** Getti d'acqua

· **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.

**· 5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**

· **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

**SEZIONE 6: Misure in caso di rilascio accidentale**

**· 6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**

Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.

· **6.2 Precauzioni ambientali:** Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.

**· 6.3 Metodi e materiali per il contenimento e per la bonifica:**

Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).

Provvedere ad una sufficiente areazione.

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**Scheda di dati di sicurezza**  
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Non dilavare con acqua o detersivi liquidi.

· **6.4 Riferimento ad altre sezioni**

Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.

Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.

Per informazioni relative allo smaltimento vedere Capitolo 13.

### **SEZIONE 7: Manipolazione e immagazzinamento**

· **7.1 Precauzioni per la manipolazione sicura** Aprire e manipolare i recipienti con cautela.

· **Indicazioni in caso di incendio ed esplosione:**

Tenere lontano da fonti di calore, non fumare.

Proteggere dal calore.

Adottare provvedimenti contro cariche elettrostatiche.

· **7.2 Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**

· **Stoccaggio:**

· **Requisiti dei magazzini e dei recipienti:** Conservare in ambiente fresco.

· **Indicazioni sullo stoccaggio misto:** Non necessario.

· **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**

Mantenere i recipienti ermeticamente chiusi.

Chiudere i recipienti non a tenuta di gas.

Conservare in luogo fresco e asciutto in fusti ben chiusi.

Proteggere dal calore e dai raggi diretti del sole.

· **7.3 Usi finali specifici** Non sono disponibili altre informazioni.

### **SEZIONE 8: Controllo dell'esposizione/protezione individuale**

· **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

· **8.1 Parametri di controllo**

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:** Non Necessario.

· **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **Norme generali protettive e di igiene del lavoro:** Lavarsi le mani prima dell'intervallo o a lavoro terminato.

· **Maschera protettiva:** In ambienti non sufficientemente ventilati utilizzare la maschera protettiva.

· **Guanti protettivi:**

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.

A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.

Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

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**Scheda di dati di sicurezza**  
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· Occhiali protettivi:



Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

#### · 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

##### · Indicazioni generali

##### · Aspetto:

**Forma:** Liquido

**Colore:** Incolore

· **Odore:** Caratteristico

· **Soglia olfattiva:** Non definito.

· **valori di pH:** Non definito.

##### · Cambiamento di stato

**Temperatura di fusione/ambito di fusione:** Non definito.

**Temperatura di ebollizione/ambito di ebollizione:** Non definito.

· **Punto di infiammabilità:** -54 °C

· **Infiammabilità (solido, gassoso):** Non applicabile.

##### · Temperatura di accensione:

**Temperatura di decomposizione:** Non definito.

· **Autoaccensione:** Non definito.

· **Pericolo di esplosione:** Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.

##### · Limiti di infiammabilità:

**Inferiore:** Non definito.

**Superiore:** Non definito.

· **Tensione di vapore:** Non definito.

· **Densità a 20 °C:** 0,648 g/cm<sup>3</sup>

· **Densità relativa** Non definito.

· **Densità del vapore** Non definito.

· **Velocità di evaporazione** Non definito.

· **Solubilità in/Miscibilità con acqua:**

Poco e/o non miscibile.

· **Coefficiente di distribuzione (n-Octanol/acqua):** Non definito.

##### · Viscosità:

**Dinamica:** Non definito.

**Cinematica:** Non definito.

##### · Tenore del solvente:

**Solventi organici:** 100,0 %

**VOC (CE)** 100,00 %

(continua a pagina 5)

**Scheda di dati di sicurezza**  
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**Denominazione commerciale:** TMS, Tetramethylsilane

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· **9.2 Altre informazioni**

*Non sono disponibili altre informazioni.*

### **SEZIONE 10: Stabilità e reattività**

- **10.1 Reattività**
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** *Il prodotto non si decompone se utilizzato secondo le norme.*
- **10.3 Possibilità di reazioni pericolose** *Non sono note reazioni pericolose.*
- **10.4 Condizioni da evitare** *Non sono disponibili altre informazioni.*
- **10.5 Materiali incompatibili:** *Non sono disponibili altre informazioni.*
- **10.6 Prodotti di decomposizione pericolosi:** *Non sono noti prodotti di decomposizione pericolosi.*

### **SEZIONE 11: Informazioni tossicologiche**

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta**
- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** *Non ha effetti irritanti.*
- **Lesioni oculari gravi/irritazioni oculari gravi** *Non irritante.*
- **Sensibilizzazione respiratoria o cutanea** *Non si conoscono effetti sensibilizzanti.*

### **SEZIONE 12: Informazioni ecologiche**

- **12.1 Tossicità**
- **Tossicità acquatica:** *Non sono disponibili altre informazioni.*
- **12.2 Persistenza e degradabilità** *Non sono disponibili altre informazioni.*
- **12.3 Potenziale di bioaccumulo** *Non sono disponibili altre informazioni.*
- **12.4 Mobilità nel suolo** *Non sono disponibili altre informazioni.*
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
*Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.*
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** *Non applicabile.*
- **vPvB:** *Non applicabile.*
- **12.6 Altri effetti avversi** *Non sono disponibili altre informazioni.*

### **SEZIONE 13: Considerazioni sullo smaltimento**

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** *Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.*
- **Imballaggi non puliti:**
- **Consigli:** *Smaltimento in conformità con le disposizioni amministrative.*

IT

(continua a pagina 6)



**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31


Stampato il: 09.12.2015

Revisione: 09.12.2015

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**SEZIONE 14: Informazioni sul trasporto**

· 14.1 Numero ONU · ADR, IMDG, IATA	UN2749
· 14.2 Nome di spedizione dell'ONU · ADR · IMDG, IATA	2749 TETRAMETILSILANO TETRAMETHYLSILANE
· 14.3 Classi di pericolo connesso al trasporto · ADR, IMDG, IATA	
	
· Classe · Etichetta	3 Liquidi infiammabili 3
· 14.4 Gruppo di imballaggio · ADR, IMDG, IATA	I
· 14.5 Pericoli per l'ambiente: · Marine pollutant:	No
· 14.6 Precauzioni speciali per gli utilizzatori · Numero Kemler: · Numero EMS:	Attenzione: Liquidi infiammabili 33 F-E,S-D
· 14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL 73/78 ed il codice IBC	Non applicabile.
· Trasporto/ulteriori indicazioni:	
· ADR · Quantità limitate (LQ) · Quantità esenti (EQ)	0 Codice: E0 Vietato al trasporto in quantità esente
· Categoria di trasporto · Codice di restrizione in galleria	1 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	0 Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· UN "Model Regulation":	UN2749, TETRAMETILSILANO, 3, I

**SEZIONE 15: Informazioni sulla regolamentazione**

- 15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela
- Direttiva 2012/18/UE
- Sostanze pericolose specificate - ALLEGATO I La sostanza non è contenuta

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**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

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**Denominazione commerciale: TMS, Tetramethylsilane**

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· **Disposizioni nazionali:**

· **Istruzione tecnica aria:**

Classe	quota in %
NC	100,0

· **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

### **SEZIONE 16: Altre informazioni**

*I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.*

· **Abbreviazioni e acronimi:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*Flam. Liq. 1: Flammable liquids, Hazard Category 1*

IT

# 안전지침서

제조조의와 2006/에 따라라따

기압점: 2015.12.09

개정: 2015.12.09

## 1 화학제품과 회사에 관한 정보

### 제품제품제자

- **제품명:** TMS, Tetramethylsilane
- **상품번호:** 21760
- **번호번호번호**  
75-76-3
- **EC 의번호:**  
200-899-1

해당 해당 물질이나 혼합물 관련 권역도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.

- **제품의 권고 용도와 사용 생애를 제한 제한 시험 실 화 학 품**
- **안전데이터표(Safety Data Sheet) 내 공급 업체 권역 권역 정보**
- **제조자/수입자/유통 업체 정보 정보**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com

Samchang Commercial Co., Ltd.  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298

- **추가적인 정보 정보 정보 정보** duct safety department
- **비상 연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 유해성.위험성

- **순물질 또는 혼합물액 분류분류**



화염

인화성 액체 구분1 H224 극인화성 액체 및 증기

- **라벨표가 요소요소**
- **라벨 라벨 라벨 요소**

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

- **그림문자**



GHS02

- **신호어 위험**
- **유해 위험 위험 위험** 문구  
극인화성 액체 및 증기

- **예방 조차** 문구 문구  
열·스파크·화염·고열로부터 멀리하시오 – 금연  
폭발 방지용 전기·환기·조명·장비를 사용하시오.

(2 쪽에 계속)

# 안전지침서

## 제1조제1항제2/2006/E에 따라라따

기압점: 2015.12.09

개정: 2015.12.09

**제품명: TMS, Tetramethylsilane**

(1 쪽부터계속)

(보호장갑·보호의·보안경·안면보호구)를(을) 착용하시오.  
 용기와 수용설비를 접합시키거나 접지하시오.  
 피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 행구시오.  
 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

기타기타 **주요성**

- PBT(잔류성, 생물농축성, 물성독성물질) 및 vPvB(고 잔류성, 고 생물농축성 물질)에 해당하지 않음
- PBT(잔류성, 생물농축성, 물성독성물질)에 해당하지 않음.
- vPvB(고 잔류성, 고 생물농축성 물질)에 해당하지 않음.

### 3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시  
75-76-3 tetramethylsilane

식별식별 번호

- EC 의번호: 200-899-1

### 4 응급조치 요령

- 응급조치요령 내용내용
  - 흡입했을 때: 신선한 공기를 쐬고, 통증이 있을 때는 의료진의 도움을 구한다.
  - 피부에 접촉했을 때: 일반적으로 이제품은 피부에 자극적이지 않다.
  - 눈에 눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어낸다.
  - 먹었을 때: 증상이 지속될 경우에는 의사와 상담한다.
- 기타기타 **주요성**의 주의사항:  
 가장가장 중요한 **주요성**에 대한 영향 영향적인 정보가 존재하지 않습니다.  
 · 즉각적인 의료처리 및 특별처리가 필요함을 시사하는 **주요성**에 대한 정보가 존재하지 않습니다.

### 5 폭발·화재시 대처방법

- 소화제
  - 적절한 소화제: 이산화탄소, 모래, 석회가루를 사용하고, 물을 사용하지 않는다.
  - 부적절한 소화제: 플레트용 물
  - 본 화학물질이나 혼합물에서 발생 **주요성**에 대한 추가적인 정보가 존재하지 않습니다.
  - 소방관에게 대한 **주요성**에 대한 추가사항
- 화재 **주요성**에 대한 **주요성**에 대한 추가사항: 특별한 조치가 필요없음.

### 6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급 **주요성**에 대한 추가사항
- 환경 **주요성**에 대한 **주요성**에 대한 추가사항: 하수도망/해수면위의물/지하수로도달하지않게한다.  
 밀폐 **주요성**에 대한 **주요성**에 대한 추가사항  
 액체가 혼합된 물질(모래, 규조토, 산성결합물, 일반결합물, 톱밥)에 흡입되도록 한다.  
 충분한 환기가 되도록 한다.  
 물이나 묽은 세척제로 씻어 내지 마십시오
- 식별식별 번호 참조  
 안전관리에 대한 정보는 제7장을 참고하시오.  
 개인보호장비에 대한 정보는 제8장을 참고하시오.

(3 쪽에계속)



# 안전지침서

## 제 제조 의 의 의 2007/2006/E 에 따라 라 따

기압점: 2015.12.09

개정: 2015.12.09

**제품명:** TMS, Tetramethylsilane

(3 쪽부터 계속)

### 9 물리화학적 특성

기본 물리화학적 특성에 대한 정보

<b>· 일반정보</b>	
외형외형의형	액체
· 물리적 상태	액체
· 색:	색소가 없는
· 냄새	특색있는
· 후각역치	알맞지않다.
· pH:	알맞지않다.
· 상태변화	
· 녹는점/어는점:	맞지않는
· 초기 끓는점과 끓는점 범위	맞지않는
· 인화점:	-54 °C
· 인화성 고체/기체/기체	해당사항 없음.
· 점화온도:	
· 분해온도	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	이제 품은 폭발 위험성이 없지만, 폭발 가능성이 있는 증기 화합물/공기 화합물의 형성 가능성이 있다.
인화 안전 정보	인화 안전 정보
· 아래로:	알맞지않다.
· 위로 위로	알맞지않다.
· 증기압:	알맞지않다.
· 밀도 밀도 밀도 경우 20 °C:	0.648 g/cm <sup>3</sup>
· 비중 비중 비중	알맞지않다.
· 증기 밀도:	알맞지않다.
· 증발 증발 증발 속도	알맞지않다.
· 용해도:	
· 물:	각각의 경우에 따라서는 거의 혼합할 수 없는
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도 점도 점도	
· 역학성:	알맞지않다.
· 동점성:	알맞지않다.
· 용매 내용물	
· 유기용매:	100.0 %
· VOC (EU)	100.00 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

### 10 안정성 및 반응성

- 반응성
- 화학적 안정성
- 화학적 안정성 유해 반응의 가능성 / 피해 예방 조건
- 유해 반응 가능성 위험한 반응으로는 알려지지 않았다.

(5 쪽에 계속)

# 안전지침서

## 제조조의와 2006/EL에 따라라따

기압점: 2015.12.09

개정: 2015.12.09

**제품명:** TMS, Tetramethylsilane

(4 쪽부터계속)

- **피해야원 조건 추가적인 정보**가 존재하지 않습니다.
- **혼합 혼합물 추가적인 정보**가 존재하지 않습니다.
- **유해분해물질:** 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

- **독성학적 영향에 대한 정보**
- 급성독성독성독성
- **일차적 자극효과**
- 피부피부 **부작상 또는 자극성:** 무자극
- 심한심한 **부작상 또는 자극성:** 무자극.
- **감각화:** 민감한영향이없는것으로알려져있다.

### 12 환경에 미치는 영향

- 독성독성독성
- **수생독성:** 추가적인 정보가 존재하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재하지 않습니다.
- **추가적인 생태학 정보**
- 일반 **환경특징**
- 수질오염등급 1 (자체등급분류): 약하게수질오염이된  
회석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
- **PBT(잔류성, 생물농축성, 독성물질) 및 vPvB(고 잔류성, 고 생물농축성 물질)에 대한 결과**
- **PBT(잔류성, 생물농축성, 독성물질)당사항 없음.**
- **vPvB(고 잔류성, 고 생물농축성 물질)당사항 없음.**
- 기타기타 **부작용** 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- **폐기물 처리방법**
- 권고권고 **활쓰레기**와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장포장**
- 권고권고 **당국의지침**에입각한쓰레기처리.

### 14 운송에 필요한 정보

<b>유엔 유엔 번호</b>	UN2749
· ADR, IMDG, IATA	
<b>적정적정명</b>	2749 TETRAMETHYLSILANE
· ADR	TETRAMETHYLSILANE
· IMDG, IATA	

(6 쪽에계속)

# 안전지침서

## 제조조의와 7/2006/E에 따라

기압점: 2015.12.09

개정: 2015.12.09

**제품명: TMS, Tetramethylsilane**

(5 쪽부터 계속)

**교통 규정**

· ADR, IMDG, IATA



등급

· 위험물 라벨라벨

3 발화성용액  
3

· 용기등급

· ADR, IMDG, IATA

I

· 환경적 유해물질:

· 해양오염물질:

아니오

· 이동시 특별 취급 조치

경고: 발화성용액

위험

· E 번호

33

· MARPOL 73/78(선박으로부터의 해양오염방지협약) 부속서 2 및 IBC Code(국제선적화물코드)에 따른 벌크물질 운송 규정

F-E, S-D

해당사항 없음.

· 운송/취급/처분 정보

· ADR

한정

· Excepted quantities (EQ)

0

Code: E0

Not permitted as Excepted Quantity

운송

· E 번호

1

D/E

· IMDG

· Limited quantities (LQ)

· Excepted quantities (EQ)

0

Code: E3

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 300 ml

· UN 번호

UN2749, TETRAMETHYLSILANE, 3, I

### 15 법적 규제 현황

해당 해당 물질 또는 혼합물에 대한 국내 안전 규정 및 환경 규정 관련 법률

· Korean Existing Chemical Inventory

75-76-3 | tetramethylsilane

2014-3-5848

· 라벨 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

위험



GHS02

(7 쪽에 계속)



# 안전지침서

## 제 제조 조 의 의 조 7/2006/E 에 따라 라 따

기압점: 2015.12.09

개정: 2015.12.09

**제품명: TMS, Tetramethylsilane**

(6 쪽부터 계속)

- 표지어 위험
- 위험 ~~위험~~ 문구
- 극인화성 액체 및 증기
- 주의 ~~주의~~ 문구
- 열·스파크·화염·고열로부터 멀리하십시오 – 금연
- 폭발 방지용 전기·환기·조명·장비를 사용하십시오.
- (보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.
- 용기와 수송설비를 접합시키거나 접지하십시오.
- 피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 헹구시오.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출
- 화학물질 안전성 평가 ~~평가~~ 화학물질 안전성 평가가 수행되지 않음

### 16 그 밖의 참고사항

이 보고는 우리 지식에 대한 오늘날의 상태에 대하여 평가하고 있다, 하지만 이 보고서는 생산 특성에 관한 보증은 기술하지 않았으며 계약적인 법률 관계에 기반을 두고 있지 않다

최초 ~~최초~~ **최초** 일자: 2015.12.09

개정 ~~개정~~ **개정** 일자: 1 / 2015.12.09

· **약어와 두문자어:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- 인화성 액체 구분1: Flammable liquids, Hazard Category 1

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 09.12.2015

Revisión: 09.12.2015

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

- **1.1 Identificador del producto**
- **Nombre comercial:** TMS, Tetramethylsilane
- **Número del artículo:** 21760
- **Número CAS:**  
75-76-3
- **Número CE:**  
200-899-1
- **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**  
No existen más datos relevantes disponibles.
- **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio
- **1.3 Datos del proveedor de la ficha de datos de seguridad**
- **Fabricante/distribuidor:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Aname**  
C/ Perez Galdos no. 2  
28693 Quijorna  
Madrid, Spain  
Tel: +34.91.816.89.50  
Fax: +34.91.816.85.94  
email: ventas@aname.es
- **Área de información:** Product safety department
- **1.4 Teléfono de emergencia:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

- **2.1 Clasificación de la sustancia o de la mezcla**
- **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Liq. 1 H224 Líquido y vapores extremadamente inflamables.

- **2.2 Elementos de la etiqueta**
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**  
La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.
- **Pictogramas de peligro**



GHS02

- **Palabra de advertencia** Peligro
- **Indicaciones de peligro**  
H224 Líquido y vapores extremadamente inflamables.

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 09.12.2015

Revisión: 09.12.2015

Nombre comercial: TMS, Tetramethylsilane

( se continua en página 1 )

### · Consejos de prudencia

- P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.
- P241 Utilizar un material eléctrico, de ventilación o de iluminación/antideflagrante.
- P280 Llevar guantes/prendas/gafas/máscara de protección.
- P240 Conectar a tierra/enlace equipotencial del recipiente y del equipo de recepción.
- P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.
- P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

### · 2.3 Otros peligros

#### · Resultados de la valoración PBT y mPmB

- PBT: No aplicable.
- mPmB: No aplicable.

## SECCIÓN 3: Composición/información sobre los componentes

### · 3.1 Caracterización química: Sustancias

- Denominación N° CAS  
75-76-3 tetrametilsilano
- Número(s) de identificación
- Número CE: 200-899-1

## SECCIÓN 4: Primeros auxilios

### · 4.1 Descripción de los primeros auxilios

- En caso de inhalación del producto: Suministrar aire fresco. En caso de trastornos, consultar al médico.
- En caso de contacto con la piel: Por regla general, el producto no irrita la piel.
- En caso de con los ojos: Limpiar los ojos abiertos durante varios minutos con agua corriente.
- En caso de ingestión: Consultar un médico si los trastornos persisten.
- 4.2 Principales síntomas y efectos, agudos y retardados No existen más datos relevantes disponibles.
- 4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente No existen más datos relevantes disponibles.

## SECCIÓN 5: Medidas de lucha contra incendios

### · 5.1 Medios de extinción

- Sustancias extintoras apropiadas: CO<sub>2</sub>, arena, polvo extintor. No utilizar agua.
- Sustancias extintoras inapropiadas por razones de seguridad: Agua a pleno chorro
- 5.2 Peligros específicos derivados de la sustancia o la mezcla No existen más datos relevantes disponibles.
- 5.3 Recomendaciones para el personal de lucha contra incendios
- Equipo especial de protección: No se requieren medidas especiales.

## SECCIÓN 6: Medidas en caso de vertido accidental

### · 6.1 Precauciones personales, equipo de protección y procedimientos de emergencia

Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

### · 6.2 Precauciones relativas al medio ambiente:

Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.

### · 6.3 Métodos y material de contención y de limpieza:

Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).

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Asegurar suficiente ventilación.

No enjuagar con agua ni productos de limpieza acuosos.

· **6.4 Referencia a otras secciones**

Ver capítulo 7 para mayor información sobre una manipulación segura.

Ver capítulo 8 para mayor información sobre el equipo personal de protección.

Para mayor información sobre cómo desechar el producto, ver capítulo 13.

### SECCIÓN 7: Manipulación y almacenamiento

· **7.1 Precauciones para una manipulación segura** Abrir y manejar el recipiente con cuidado.

· **Prevención de incendios y explosiones:**

Mantener alejadas las fuentes de encendido. No fumar.

Proteger del calor.

Tomar medidas contra las cargas electrostáticas.

· **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**

· **Almacenamiento:**

· **Exigencias con respecto al almacén y los recipientes:** Almacenar en un lugar fresco.

· **Normas en caso de un almacenamiento conjunto:** No es necesario.

· **Indicaciones adicionales sobre las condiciones de almacenamiento:**

Mantener el recipiente cerrado herméticamente.

No cerrar el recipiente estanco al gas.

Almacenarlo en envases bien cerrados en un lugar fresco y seco.

Proteger del calor y de la luz directa del sol.

· **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

· **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**

Sin datos adicionales, ver punto 7.

· **8.1 Parámetros de control**

· **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** Nulo.

· **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

· **8.2 Controles de la exposición**

· **Equipo de protección individual:**

· **Medidas generales de protección e higiene:** Lavarse las manos antes de las pausas y al final del trabajo.

· **Protección respiratoria:** Si la ventilación es insuficiente, usar protección respiratoria.

· **Protección de manos:**

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

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## · Protección de ojos:



Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

## · 9.1 Información sobre propiedades físicas y químicas básicas

## · Datos generales

## · Aspecto:

Forma: Líquido

Color: Incoloro

· Olor: Característico

· Umbral olfativo: No determinado.

· valor pH: No determinado.

## · Cambio de estado

Punto de fusión /campo de fusión: Indeterminado.

Punto de ebullición /campo de ebullición: Indeterminado.

· Punto de inflamación: -54 °C

· Inflamabilidad (sólido, gaseiforme): No aplicable.

## · Temperatura de ignición:

Temperatura de descomposición: No determinado.

· Autoinflamabilidad: No determinado.

· Peligro de explosión: El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.

## · Límites de explosión:

Inferior: No determinado.

Superior: No determinado.

· Presión de vapor: No determinado.

· Densidad a 20 °C: 0,648 g/cm<sup>3</sup>

· Densidad relativa: No determinado.

· Densidad de vapor: No determinado.

· Velocidad de evaporación: No determinado.

· Solubilidad en / miscibilidad con agua:

Poco o no mezclable.

· Coeficiente de reparto (n-octanol/agua): No determinado.

## · Viscosidad:

Dinámica: No determinado.

Cinemática: No determinado.

## · Concentración del disolvente:

Disolventes orgánicos: 100,0 %

VOC (CE) 100,00 %

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**· 9.2 Información adicional**

No existen más datos relevantes disponibles.

**SECCIÓN 10: Estabilidad y reactividad**

- **10.1 Reactividad**
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

**SECCIÓN 11: Información toxicológica**

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda**
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** No produce irritaciones.
- **Lesiones o irritación ocular graves** No produce irritaciones.
- **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.

**SECCIÓN 12: Información ecológica**

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
Nivel de riesgo para el agua 1 (autoclasiicación): escasamente peligroso para el agua  
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

**SECCIÓN 13: Consideraciones relativas a la eliminación**

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

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### SECCIÓN 14: Información relativa al transporte

· 14.1 Número UN	UN2749
· ADR, IMDG, IATA	
· 14.2 Designación oficial de transporte de las Naciones Unidas	
· ADR	2749 TETRAMETILSILANO
· IMDG, IATA	TETRAMETHYLSILANE
· 14.3 Clase(s) de peligro para el transporte	
· ADR, IMDG, IATA	
	
· Clase	3 Líquidos inflamables
· Etiqueta	3
· 14.4 Grupo de embalaje	
· ADR, IMDG, IATA	I
· 14.5 Peligros para el medio ambiente:	
· Contaminante marino:	No
· 14.6 Precauciones particulares para los usuarios	Atención: Líquidos inflamables
· Número Kemler:	33
· Número EMS:	F-E,S-D
· 14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC	No aplicable.
· Transporte/datos adicionales:	
· ADR	
· Cantidades limitadas (LQ)	0
· Cantidades exceptuadas (EQ)	Código: E0 No se permite como cantidad exceptuada
· Categoría de transporte	1
· Código de restricción del túnel	D/E
· IMDG	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· "Reglamentación Modelo" de la UNECE:	UN2749, TETRAMETILSILANO, 3, I

### SECCIÓN 15: Información reglamentaria

- 15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla
- Directiva 2012/18/UE
- Sustancias peligrosas nominadas - ANEXO I No contiene la sustancia.

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· **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

### **SECCIÓN 16: Otra información**

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

Flam. Liq. 1: Flammable liquids, Hazard Category 1

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