

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 21.11.2010

Version 4.3

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

#### 1.1 Product identifier

Catalogue No.	818889
Product name	Hexamethyldisilane for synthesis
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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#### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a>

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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### 2. Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 2, H225

Specific target organ toxicity - single exposure, Category 3, H335

Eye irritation, Category 2, H319

Skin sensitization, Category 1, H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

##### Classification (67/548/EEC or 1999/45/EC)

R43

F; R11

Xi; R36/37

For the full text of the R-phrases mentioned in this Section, see Section 16.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

##### Hazard pictograms



##### Signal word

Danger

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*Hazard statements*

H225 Highly flammable liquid and vapour.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

*Precautionary statements*

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P262 Do not get in eyes, on skin, or on clothing.  
P280 Wear protective gloves.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P403 + P235 Store in a well-ventilated place. Keep cool.

**Reduced labelling (≤125 ml)**

*Hazard pictograms*



*Signal word*  
Danger

*Hazard statements*

H317 May cause an allergic skin reaction.

*Precautionary statements*

P280 Wear protective gloves.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

CAS-No. 1450-14-2

**Labelling (67/548/EEC or 1999/45/EC)**

Symbol(s)	F	Highly flammable
	Xi	Irritant
R-phrases(s)	11-36/37-43	Highly flammable. Irritating to eyes and respiratory system. May cause sensitization by skin contact.
S-phrases(s)	7-16-24-37	Keep container tightly closed. Keep away from sources of ignition - No smoking. Avoid contact with skin. Wear suitable gloves.

EC-No. 215-911-0

**Reduced labelling (≤125 ml)**

Symbol(s)	F	Highly flammable
	Xi	Irritant
R-phrases(s)	43	May cause sensitization by skin contact.
S-phrases(s)	24-37	Avoid contact with skin. Wear suitable gloves.

**2.3 Other hazards**

None known.

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**3. Composition/information on ingredients**

Formula	(CH <sub>3</sub> ) <sub>3</sub> SiSi(CH <sub>3</sub> ) <sub>3</sub>	C <sub>6</sub> H <sub>18</sub> Si <sub>2</sub> (Hill)
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CAS-No.	1450-14-2
EC-No.	215-911-0
Molar mass	146,37 g/mol

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#### 4. First aid measures

##### 4.1 Description of first aid measures

After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

Allergic reactions

##### 4.3 Indication of immediate medical attention and special treatment needed

No information available.

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#### 5. Fire-fighting measures

##### 5.1 Extinguishing media

*Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Dry powder

*Unsuitable extinguishing media*

Water, Foam

##### 5.2 Special hazards arising from the substance or mixture

Combustible material, Vapours are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

##### 5.3 Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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#### 6. Accidental release measures

##### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapours, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

##### 6.2 Environmental precautions

Do not empty into drains. Risk of explosion.

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### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7.2 and 10.5).

Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

*Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. Keep workplace dry. Do not allow product to come into contact with water.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store below +15°C.

### 7.3 Specific end uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. Keep workplace dry. Do not allow product to come into contact with water.

#### Eye/face protection

Safety glasses

#### Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

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Glove material: Nitrile rubber  
Glove thickness: 0,40 mm  
Break through time: > 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 730 Camatril® -Velours (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment:*

Flame retardant antistatic protective clothing

*Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

*Environmental exposure controls*

Do not empty into drains.

Risk of explosion.

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## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	weak
Odour Threshold	No information available.
pH	No information available.
Melting point	13 - 15 °C
Boiling point/boiling range	110 - 112 °C
Flash point	-6 °C
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.

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Vapour pressure	No information available.
Relative vapour density	No information available.
Relative density	0,73 g/cm <sup>3</sup> at 20 °C
Water solubility	at 20 °C (decomposition)
Partition coefficient: n-octanol/water	log Pow: 4,11 Method: (calculated) A remarkable bioaccumulation potential is expected (log Po/w >3). (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

**9.2 Other data**

none

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**10. Stability and reactivity**

**10.1 Reactivity**

Vapours may form explosive mixture with air.

**10.2 Chemical stability**

sensitive to moisture

**10.3 Possibility of hazardous reactions**

can decompose violently in contact with:

Water

**10.4 Conditions to avoid**

Exposure to air.

**10.5 Incompatible materials**

no information available

**10.6 Hazardous decomposition products**

no information available

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**11. Toxicological information**

**11.1 Information on toxicological effects**

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*Acute oral toxicity*

LD50 rat

Dose: 2.160 mg/kg

(External MSDS)

*Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath

*Acute dermal toxicity*

LD50 rabbit

Dose: 2.160 mg/kg

(External MSDS)

*Eye irritation*

Causes serious eye irritation.

*Sensitisation*

Sensitisation test: guinea pig

Result: positive

(External MSDS)

May cause an allergic skin reaction.

May cause sensitization by skin contact.

*Specific target organ toxicity - single exposure*

May cause respiratory irritation.

*Specific target organ toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

No aspiration toxicity classification

**11.2 Further information**

*Further information*

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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**12. Ecological information**

**12.1 Toxicity**

No information available.

**12.2 Persistence and degradability**

No information available.

**12.3 Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

log Pow: 4,11

Method: (calculated)

A remarkable bioaccumulation potential is expected (log Po/w >3). (Lit.)

**12.4 Mobility in soil**

No information available.

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**12.6 Other adverse effects**

*Additional ecological information*

We have no quantitative data concerning the ecological effects of this product.

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Further information on ecology

Do not allow to run into surface waters, wastewater, or soil.

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### 13. Disposal considerations

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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### 14. Transport information

**ADR/RID**

UN 1993 FLAMMABLE LIQUID, N.O.S. (HEXAMETHYLDISILANE), 3, II

**IATA**

UN 1993 FLAMMABLE LIQUID, N.O.S. (HEXAMETHYLDISILANE), 3, II

**IMDG**

UN 1993 FLAMMABLE LIQUID, N.O.S. (HEXAMETHYLDISILANE), 3, II

EmS F-E S-E

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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### 15. Regulatory information

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

*EU regulations*

Major Accident Hazard	96/82/EC
Legislation	Highly flammable
	7b
	Quantity 1: 5.000 t
	Quantity 2: 50.000 t

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work.
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*National legislation*

Storage class VCI	3 Flammable Liquids
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#### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

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### 16. Other information

**Full text of H-Statements referred to under sections 2 and 3.**

H225	Highly flammable liquid and vapour.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

**Full text of R-phrases referred to under sections 2 and 3**

R11	Highly flammable.
R36/37	Irritating to eyes and respiratory system.
R43	May cause sensitization by skin contact.



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**Training advice**

Provide adequate information, instruction and training for operators.

Regional representation: This information is given on the authorised Safety Data Sheet for your country.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*