

Safety Data Sheet

AB 111242

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878 - Europe

Date of revision 12.12.2024

Version 0.04

1. Identification of the Substance and the Company

1.1 Product identifier

| | |
|--------------|----------------------------|
| Product name | Methyltriethoxysilane; 98% |
| CAS number | 2031-67-6 |
| Product code | AB111242 |
| Synonym | Triethoxy(methyl)silan |

1.2 Identified uses

Chemicals used in research and development, analysis and production

1.3 Details of the supplier of the safety data sheet

| | |
|-----------------|---|
| Company details | abcr GmbH Im Schleher 10 76187 Karlsruhe Germany |
| Telephone | +49 (0)721 950 610 |
| Email | sdb@abcr.com |

1.4 Emergency telephone number

Emergency CONTACT (24-Hour-Number):
GBK GmbH +49 (0)6132-84463 (multilingual)

2. Hazards identification

2.1 Classification of the substance or mixture

| | |
|--------------------|-----------|
| Product definition | Substance |
|--------------------|-----------|

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

H226 FLAMMABLE LIQUIDS

Category 3

2.2 Label elements

Hazard pictograms



| | |
|-------------------|------------------------------------|
| Signal word | Warning |
| Hazard statements | H226 - Flammable liquid and vapor. |

| | |
|---|--|
| Precautionary statements | P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| Hazardous ingredients | Methyltriethoxysilane; 98% |
| Supplemental label elements | Not applicable. |
| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | Not applicable. |

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

| | | | | | | |
|-----|-----|-----|----|------|-----|-----|
| PBT | P | B | T | vPvB | vP | vB |
| No | N/A | N/A | No | N/A | N/A | N/A |

Other hazards which do not result in classification None known.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

| Substance/mixture | Mono-constituent substance | | | | |
|----------------------------|---------------------------------|-----|---|---|------|
| Product/ingredient name | Identifiers | % | Classification Regulation (EC) No. 1272/2008 [CLP] | Specific Conc. Limits, M-factors and ATEs | Type |
| Methyltriethoxysilane; 98% | EC: 217-983-9 CAS: 2031-67-6 | 100 | Flam. Liq. 3, H226 See Section 16 for the full text of the H statements declared above. | - | [1] |

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[1] Constituent

Occupational exposure limits, if available, are listed in Section 8.

4. First aid measures

4.1 Description of first aid measures

| | |
|-----------------------------------|---|
| Eye contact | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| Skin contact | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. |
| Protection of first-aiders | No action shall be taken involving any personal risk or without suitable training. |

4.2 Most important symptoms and effects, both acute and delayed

| | |
|---------------------------------------|---|
| Potential acute health effects | No known significant effects or critical hazards. |
| Over-exposure signs/ symptoms | No specific data. |

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|----------------------------|---|
| Notes to physician | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | No specific treatment. |

5. Fire-fighting measures

5.1 Extinguishing media

| | |
|---------------------------------------|---|
| Suitable extinguishing media | In case of fire, use water spray (fog), foam, dry chemical or CO ₂ . |
| Unsuitable extinguishing media | Do not use water jet. |

5.2 Special hazards arising from the substance or mixture

| | |
|--|---|
| Hazards from the substance or mixture | Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. |
| Hazardous combustion products | Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides |

5.3 Advice for firefighters

| | |
|---|--|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. |
|---|--|

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment.
- For emergency responders** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

- Small spill** Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

- See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.
-

7. Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

| | |
|---|--|
| Protective measures | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| Advice on general occupational hygiene | Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. |

7.2 Conditions for safe storage, including any incompatibilities

Keep under inert atmosphere.

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Seveso Directive - Reporting thresholds

Danger criteria

| Category | Notification and MAPP threshold | Safety report threshold |
|----------|---------------------------------|-------------------------|
| P5c | 5000 tonne | 50000 tonne |

7.3 Specific end use(s)

| | |
|---|----------------|
| Recommendations | Not available. |
| Industrial sector specific solutions | Not available. |

8. Exposure controls/Personal protective equipment

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|----------------------------|------|----------------------|--------------------------|--------------------|----------|
| Methyltriethoxysilane; 98% | DNEL | Long term Oral | 1,36 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 9,498 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 19,34 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 32,75 mg/m ³ | General population | Systemic |
| | DNEL | Long term Inhalation | 134,05 mg/m ³ | Workers | Systemic |

Predicted effect concentrations

No PECs available.

8.2 Exposure controls**Appropriate engineering controls**

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection**Hand protection**

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

| | |
|--|--|
| Body protection | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods. |
| Other skin protection | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. |
| Respiratory protection | Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. |
| Environmental exposure controls | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|-------------------------------|
| Appearance | |
| Physical state | Liquid. |
| Color | Colorless. |
| Odor | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | <-40°C |
| Initial boiling point and boiling range | 142 °C |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | Not available. |
| Flash point | Closed cup: 30°C |
| Auto-ignition temperature | 220°C |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |
| Solubility(ies) | Not available. |
| Solubility at room temperature | Decomposes. [H2O] |
| Partition coefficient: n-octanol/water | Not available. |
| Vapor pressure | Not available. |
| Evaporation rate | <1 (butyl acetate = 1) |
| Relative density | Not available. |
| Density | 0,89 g/cm ³ [20°C] |
| Vapor density | Not available. |

| | |
|---------------------------------|-----------------|
| Explosive properties | Not available. |
| Oxidizing properties | Not available. |
| Particle characteristics | |
| Median particle size | Not applicable. |

9.2 Other information

| | |
|----------------------------|-----------------|
| Burning time | Not applicable. |
| Burning rate | Not applicable. |
| No additional information. | |

10. Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

Moisture-sensitive material. Handle under inert gas.

10.3 Possibility of hazardous reactions

Vapors may form explosive mixtures with air.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
moisture

10.5 Incompatible materials

Reactive or incompatible with the following materials:

water
acids
alkalis
oxidizing agents

10.6 Hazardous decomposition products

Ethanol

11. See toxicological information

11.1 Information on toxicological effects

Acute toxicity

| | |
|---------------------------|----------------|
| Conclusion/Summary | Not available. |
|---------------------------|----------------|

Acute toxicity estimates

N/A

Irritation/Corrosion

Conclusion/Summary Not available.

Sensitizer

Conclusion/Summary Not available.

Mutagenicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Reproductive toxicity

Conclusion/Summary Not available.

Teratogenicity

Conclusion/Summary Not available.

Information on the likely routes of exposure Not available.

Potential acute health effects

| | |
|---------------------|---|
| Inhalation | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |
| Ingestion | No known significant effects or critical hazards. |
| Eye contact | No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---------------------|-------------------|
| Inhalation | No specific data. |
| Ingestion | No specific data. |
| Skin contact | No specific data. |
| Eye contact | No specific data. |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

| | |
|------------------------------|---|
| Conclusion/Summary | Not available. |
| General | No known significant effects or critical hazards. |
| Carcinogenicity | No known significant effects or critical hazards. |
| Mutagenicity | No known significant effects or critical hazards. |
| Teratogenicity | No known significant effects or critical hazards. |
| Developmental effects | No known significant effects or critical hazards. |
| Fertility effects | No known significant effects or critical hazards. |

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

12. Ecological Information

12.1 Toxicity

Conclusion/Summary Not available.

12.2 Persistence and degradability

Conclusion/Summary Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

| Product/ingredient name | PBT | P | B | T | vPvB | vP | vB |
|----------------------------|-----|-----|-----|----|------|-----|-----|
| Methyltriethoxysilane; 98% | No | N/A | N/A | No | N/A | N/A | N/A |

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

13. Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

The classification of the product may meet the criteria for a hazardous waste.

Packaging





Methods of disposal

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

| | ADR/RID | ADN | IMDG | IATA |
|---------------------------------|--|--|---|--|
| 14.1 UN number or ID number | UN1993 | UN1993 | UN1993 | UN1993 |
| 14.2 UN proper shipping name | FLAMMABLE LIQUID, N.O.S. (Methyltriethoxysilane; 98%) | FLAMMABLE LIQUID, N.O.S. (Methyltriethoxysilane; 98%) | FLAMMABLE LIQUID, N.O.S. (Methyltriethoxysilane; 98%) | Flammable liquid, n.o.s. (Methyltriethoxysilane; 98%) |
| 14.3 Transport hazard class(es) | 3  | 3  | 3  | 3  |
| 14.4 Packing group | III | III | III | III |
| 14.5 Environmental hazards | No. | No. | No. | No. |
| | | | | |

| | | | | |
|--|--|--|--|--|
| 14.6 Special precautions for user | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. |
| Additional information | Hazard identification number 30 Limited quantity LQ7 Special provisions 274 601 640E Tunnel code (D/E) | Special provisions 274 601 640E | Emergency schedules F-E, _S-E_ Special provisions 223, 274, 955 | Quantity limitation Passenger and Cargo Aircraft: 60 L. Packaging instructions: 309. Cargo Aircraft Only: 220 L. Packaging instructions: 310. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y309. Special provisions A3 |

14.7 Transport in bulk according to IMO instruments

Not available.

15. Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air Not listed

**Industrial emissions
(integrated pollution
prevention and control) -
Water** Not listed

Ozone depleting substances (1005/2009/EU)
Not listed.

Prior Informed Consent (PIC) (649/2012/EU)
Not listed.

Persistent Organic Pollutants
Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

| Category |
|----------|
| P5c |

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

| | |
|--------------------------------|--|
| China | This material is listed or exempted. |
| Canada | This material is listed or exempted. |
| Australia | This material is listed or exempted. |
| Eurasian Economic Union | Russian Federation inventory: Not determined. |
| Japan | Japan inventory (CSCL): This material is listed or exempted. Japan inventory (ISHL): This material is listed or exempted. |
| New Zealand | This material is listed or exempted. |
| Philippines | This material is listed or exempted. |
| Republic of Korea | This material is listed or exempted. |

| | |
|----------------------|--------------------------------------|
| Taiwan | This material is listed or exempted. |
| Thailand | Not determined. |
| Turkey | Not determined. |
| United States | This material is listed or exempted. |
| Viet Nam | Not determined. |

15.2 Chemical Safety Assessment Not available.

16. Other information

 Indicates information that has changed from previously issued version.

Abbreviations and acronyms

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|--------------------|-----------------|
| Flam. Liq. 3, H226 | Expert judgment |

| | | |
|---|--------------|--------------------------------|
| Full text of abbreviated H statements | H226 | Flammable liquid and vapor. |
| Full text of classifications [CLP/GHS] | Flam. Liq. 3 | FLAMMABLE LIQUIDS - Category 3 |
| Full text of classifications [CLP/GHS] | Flam. Liq. 3 | FLAMMABLE LIQUIDS - Category 3 |
| Date of issue/ Date of revision | 12.12.2024 | |
| Version | 0.04 | |

Notice to reader

The above information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a particular application.