

Safety data sheet

According to Regulation (EC) No. 1907/2006

TMI_n SSG

1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND THE COMPANY/UNDERTAKING

| | |
|---|--|
| Product Identifier Trimethylindium | |
| Supplier Akzo Nobel Polymer Chemicals B.V. Stationsstraat 77 PO Box 247 NL-3800 AE Amersfoort The Netherlands T +31 334676767 www.akzonobel.com/polymer | |
| E-mail address of person responsible for safety data sheet RegulatoryPC@akzonobel.com | |
| Emergency telephone AkzoNobel Chemicals-Deventer-NL T +31 570 679211 F +31 570 679801 | |
| Relevant identified uses of the substance or mixture Semiconductor | |
| Date of last issue / Revision number 2010/08/06 / 5.03 | |
| Chemical family Metal alkyl | |

2. HAZARDS IDENTIFICATION

| |
|---|
| Reacts violently with water, liberating extremely flammable gases. Spontaneously flammable in air. Causes severe burns. |
|---|

| GHS classification | |
|-------------------------------------|-------------|
| Description | Applicable |
| Pyrophoric solid | category 1 |
| Water contact emits flammable gases | category 1 |
| Eye irritation | category 1 |
| Skin corrosion/ irritation | category 1A |

Pictogram(s) (GHS)



| Signal word/Hazard statement(s) GHS | |
|-------------------------------------|-------------|
| Code | Description |

Safety data sheet



According to Regulation (EC) No. 1907/2006

TMin SSG

| | |
|---------------------|--|
| Signal word: DANGER | |
| H250. | Catches fire spontaneously if exposed to air. |
| H260. | In contact with water releases flammable gases which may ignite spontaneously. |
| H26EUH014. | Reacts violently with water. |
| H314. | Causes severe skin burns and eye damage. |

| Precautionary statement(s) (GHS) | |
|--|--|
| Code | Description |
| The precautionary statements marked with a * are mentioned on the label of the packaging of the product. | |
| P210. | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P222. | Do not allow contact with air. |
| P223. | Keep away from any possible contact with water, because of violent reaction and possible flash fire. |
| P231+P232. | Handle under inert gas. Protect from moisture. |
| P280d. *) | Wear protective gloves, eye/face protection and protective clothing. *) |
| P301+P330+P331. | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P302+P334. | IF ON SKIN: Immerse in cool water/wrap in wet bandages. |
| 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. |
| P310. *) | Immediately call a POISON CENTER or doctor/physician. *) |
| P363. | Wash contaminated clothing before reuse. |
| P378f. *) | Use vermiculite, dry chemical powder or dry sand for extinction. *) |
| P402+P404. | Store in a dry place. Store in a closed container. |
| P422b. *) | Store contents under nitrogen. *) |
| P501a. | Dispose of contents and container according to local regulation. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| This product is to be considered as a substance in conformance to EC directives. | | | |
|--|-------------|-------------|-----------------|
| Information on hazardous ingredients | | | |
| Chemical description Trimethylindium | | | |
| Composition / information on ingredients | | | |
| Number | % w/w | CAS-number | Chemical name |
| 1 | approx. 100 | 003385-78-2 | Trimethylindium |

| Number | REACH Registratio n number | EC-number | Classification according to 1272/2008 as amended | | | Classification according to 67/548/EEC as amended |
|--------|----------------------------|-----------|--|-------------|----------------|---|
| 1 | | 222-200-9 | Pyrophoric solid | category 1 | H250 H260 H314 | C F R14/15 R17 R35 |
| | | | Water contact emits flammable gases | category 1 | | |
| | | | Eye irritation | category 1 | | |
| | | | Skin corrosion/ irritation | category 1A | | |

According to Regulation (EC) No. 1907/2006

TMI_n SSG

Other information

Technical pure substance.

4. FIRST AID MEASURES

Most important symptoms and effects

Causes severe burns. Causes injury to the cornea and eyelids. Risk of serious damage to eyes. Irritating to respiratory system, may cause delayed pulmonary oedema.

Description of first aid measures

General

Call a physician immediately.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Oxygen may additionally be given, by trained personnel, if it is available. Get medical attention immediately.

Skin

While wearing impervious gloves and air-tight safety goggles, immediately start continuous flushing of all affected areas on the victim with water for at least 15 minutes. If victim is wearing air-tight safety goggles, do not remove them. Remove contaminated clothing and shoes. If clothing is stuck to the skin after flushing with water, do not remove it. Get medical attention immediately. Wash or destroy clothing. Thoroughly clean or destroy contaminated shoes.

Eye

Immediately start continuous flushing of eyes with water for at least 15 minutes. If easy to do, contact lenses should be removed during the flushing, by trained personnel. Hold the eyelids apart during the flushing to ensure rinsing the entire surface of the eye and lids with water. Get medical attention immediately.

Ingestion

DO NOT induce vomiting. Get medical attention immediately by calling a physician or a poison control center. If victim is conscious and alert, give a cupful of water. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs, the patient should lie on their left side while vomiting to reduce the risk of aspiration.

Indication of any immediate medical attention and special treatment needed

Persons with pre-existing skin, eye, or respiratory disease may be at increased risk from the irritant or allergic properties of this material.

Irrigate burn area with large amounts of water to decontaminate, if not already done. Chemical burns on the skin should then be treated like thermal burns. Skin reactions may take 24-48 hours to develop. If eyes are affected, flush eyes with buffered or plain irrigating solutions for at least 15 minutes, if not already done. If any ulceration or conjunctival injury is present, have an ophthalmologist examine the patient. Application of cool water helps relieve pain and swelling of both the skin and eyes. If swallowed, do not induce vomiting. Give patient plenty of water to drink. Ingestion of this corrosive material may cause severe ulceration, inflammation, and possible perforation of the gastrointestinal tract. Maintain adequate airway. Aspiration during induced emesis can result in severe lung injury. Contact a Poison Control Center for additional treatment information. Treat any additional effects symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

vermiculite, dry chemical powder, dry sand.

Unsuitable extinguishing media

Never use water !!! See also Section: Other information.
foam
halones

Hazardous decomposition / combustion products

Product(s) of complete combustion: Indiumoxide, Carbon dioxide.

Protective equipment

Firefighters must wear fire resistant protective equipment. Wear approved respirator and protective gloves.

Fire and explosion hazard

CAUTION: reignition may occur. Vapours produced by incomplete combustion may form explosive mixtures with air. In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

According to Regulation (EC) No. 1907/2006

TMin SSG

| |
|---|
| <p>Personal precautions Do not breathe dust. Avoid contact with skin and eyes. For personal protection see Section 8.</p> |
| <p>Environmental precautions Do not allow to enter drains or water courses.</p> |
| <p>Methods and material for containment and cleaning up Stop leakage if possible. Eliminate all sources of ignition, and do not generate flames or sparks. Take precautionary measures against static discharges. Allow controlled hydrolysis. Isolate spill area. After fire has been extinguished or has been allowed to burn out completely, wait CONSIDERABLE TIME (until smoke is no longer observed). After that, carefully wash spill area with a waterspray.</p> |
| <p>Other information Ignition will occur. Evacuate personnel to safe area.</p> |

7. HANDLING AND STORAGE

| |
|---|
| <p>Precautions for safe handling When using do not eat, drink or smoke. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Avoid contact with moisture and water. Keep under nitrogen. Handle only in closed system. During sampling, disconnecting lines or opening connections, an aluminised suit should be worn. Avoid contact with skin and eyes. Avoid Incompatible materials (See Section 10).</p> |
| <p>Fire and explosion prevention Spontaneously flammable in air. Do not cut or weld on or near this container even when empty.</p> |
| <p>Conditions for safe storage Store in accordance with local/national regulations. Keep away from food, drink and animal feedingstuffs. Keep under dry nitrogen containing less than 10 ppm oxygen. Protect product from moisture and wet air. Keep container tightly closed and in a well-ventilated place.</p> |
| <p>Other information Wash hands thoroughly after handling or contact. Keep working clothing separately and do not take them home.</p> |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | | | |
|---|--|---|---|---|--|
| <p>Control parameters Ensure good ventilation and local exhaustion of the working area.</p> | | | | | |
| <p>Personal protection</p> <table border="1"> <tr> <td> <p>Respiratory In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).</p> </td> </tr> <tr> <td> <p>Hand impervious gloves.</p> </td> </tr> <tr> <td> <p>Eye Safety glasses and a full face shield. A face shield is preferred over goggles.</p> </td> </tr> <tr> <td> <p>Skin and body aluminised suit and protective boots (For further advice contact manufacturer).</p> </td> </tr> <tr> <td> <p>Other information Launder clothes before reuse. Emergency-shower and facilities for rinsing eyes must be accessible.</p> </td> </tr> </table> | <p>Respiratory In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).</p> | <p>Hand impervious gloves.</p> | <p>Eye Safety glasses and a full face shield. A face shield is preferred over goggles.</p> | <p>Skin and body aluminised suit and protective boots (For further advice contact manufacturer).</p> | <p>Other information Launder clothes before reuse. Emergency-shower and facilities for rinsing eyes must be accessible.</p> |
| <p>Respiratory In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).</p> | | | | | |
| <p>Hand impervious gloves.</p> | | | | | |
| <p>Eye Safety glasses and a full face shield. A face shield is preferred over goggles.</p> | | | | | |
| <p>Skin and body aluminised suit and protective boots (For further advice contact manufacturer).</p> | | | | | |
| <p>Other information Launder clothes before reuse. Emergency-shower and facilities for rinsing eyes must be accessible.</p> | | | | | |

In this country no exposure limit has been established

9. PHYSICAL AND CHEMICAL PROPERTIES

| |
|--|
| <p>Appearance crystalline solid</p> |
| <p>Colour white</p> |
| <p>Boiling point/range not determined</p> |

According to Regulation (EC) No. 1907/2006

TMI_n SSG

| |
|--|
| Melting point/freezing point 88°C / 190°F |
| Flash point not applicable |
| Flammability Highly flammable. Contact with water liberates extremely flammable gases. |
| Explosive properties no |
| Oxidising properties no |
| Vapour pressure 0.33 kPa (25°C / 77°F) 2 kPa (50°C / 122°F) |
| Density 1568 kg/m ³ (19°C / 66°F) Specific gravity = 1.568 (19°C / 66°F) |
| Bulk density not determined |
| Solubility in water Reacts violently with water. |
| Solubility in other solvents Soluble in hydrocarbons |
| pH value not applicable |
| Partition coefficient n-octanol/water not applicable |
| Relative vapour density (air=1) not determined |
| Non-Pyrophoric Limit Non-Pyrophoric Limit : not determined |
| Autoignition temperature Spontaneously flammable in air. |
| Upper/lower flammability or explosive limits not applicable |
| Volatile % not determined |

10. STABILITY AND REACTIVITY

| |
|---|
| Conditions to avoid |
| In order to prevent thermal decomposition do not overheat (T> 130°C / 266°F exothermic). |
| Chemical stability Stable under recommended storage and handling conditions (see section 7). |
| Incompatible materials Avoid contact with moisture and water, alcohols, acids, organic halides and oxygen containing compounds. |
| Possibility of hazardous reactions Polymerization does not occur. |
| Hazardous decomposition products Indium, hydrocarbons. |

11. TOXICOLOGICAL INFORMATION

Safety data sheet



According to Regulation (EC) No. 1907/2006

TMIn SSG

| | |
|------------------------|--|
| Trimethylindium | |
| Acute toxicity | |
| Oral LD50 | No data available |
| Irritation | |
| Skin | Corrosive |
| Eye | Corrosive; Risk of serious damage to eyes. |
| Respiratory | Corrosive |

12. ECOLOGICAL INFORMATION

No experimental ecological data are available on the substance as such.

13. DISPOSAL CONSIDERATIONS

| | |
|-------------------------------|--|
| Product | Refer to manufacturer/supplier for information on recovery/recycling. Waste disposal in accordance with regulations (most probably controlled incineration). |
| Contaminated packaging | According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied. |
| Other information | For further advice contact manufacturer. |

14. TRANSPORT INFORMATION

| | |
|-------------------------------------|---|
| <i>Land transport</i> | |
| Transport hazard class | 4.2 |
| Classification Code | SW |
| RID class | 4.2 |
| Packing group | I |
| Hazard Identification No. | X333 |
| Substance Identification No. | 3393 |
| UN number | 3393 |
| Proper Shipping Name | ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE (Trimethylindium) |
| Tunnel code | B/E |
| Required labels | 4.2 + 4.3 |
| Subsidiary risk | 4.3 |

Safety data sheet



According to Regulation (EC) No. 1907/2006

TMin SSG

| |
|--|
| <i>Sea transport (IMO / IMDG-code)</i> |
| Transport hazard class 4.2 |
| Packing group I |
| UN number 3393 |
| EMS F-G, S-M |
| Marine pollutant no |
| Proper Shipping Name ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE (Trimethylindium) |
| Other information Label(s): 4.2 + 4.3 |

| |
|---|
| <i>Air transport (ICAO-TI / IATA-DGR)</i> |
| UN number Forbidden |

15. REGULATORY INFORMATION

| |
|--|
| Product label name Trimethylindium |
| Labelling according to EC directives |
| EC-number See section 3 |

| R(isk) phrase(s) (EU classification) | |
|---|--|
| Code | Description |
| R14/15. | Reacts violently with water, liberating extremely flammable gases. |
| R17. | Spontaneously flammable in air. |
| R35. | Causes severe burns. |



| S(safety) phrase(s) (EU classification) | |
|--|---|
| Code | Description |
| S06B. | Keep under nitrogen. |
| S16. | Keep away from sources of ignition - No smoking. |
| S24/25. | Avoid contact with skin and eyes. |
| S36/37/39. | Wear suitable protective clothing, gloves and eye/face protection. |
| S43B. | In case of fire, use dry chemical powder; never use water. |
| S45. | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |

Safety data sheet

According to Regulation (EC) No. 1907/2006

TMI_n SSG

Classification according to 67/548/EC as amended

| | |
|---|---|
|  |  |
| CORROSIVE (C) | HIGHLY FLAMMABLE (F) |

Other information

Substance and/or product listed in Directive 96/82/EC.

German Water Hazard Class (WGK)

This product contains a substance that is not classified by the German authorities. Therefore it should be treated as classified into class WGK 3.

16. OTHER INFORMATION

Relevant hazard statements

| Chemical name | Hazard statement(s) (GHS-classification) | |
|-----------------|--|--|
| Trimethylindium | H250. | Catches fire spontaneously if exposed to air. |
| | H260. | In contact with water releases flammable gases which may ignite spontaneously. |
| | H314. | Causes severe skin burns and eye damage. |

R-pharse information

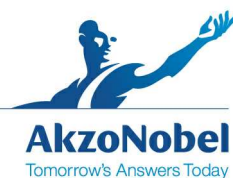
| Chemical name | R(isk) phrase(s) (EU classification) | |
|-----------------|--------------------------------------|---|
| Trimethylindium | R14/15 | Reacts violently with water, liberating extremely flammable gases |
| | R17 | Spontaneously flammable in air |
| | R35 | Causes severe burns |

History

**Date of printing/
pdf file generated**
2013/04/26

Revision
5.03

Safety data sheet



According to Regulation (EC) No. 1907/2006

TMI_n SSG

Composed by

Regulatory Affairs - Europe.
Regulatory Affairs - North America, T +1-312-544-7000.

Changes were made in section

2, GHS classification (EU)

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.