

Safety Data Sheet

**Section 1: Identification of the Substance/Mixture and of the Company/Undertaking****1.1 Product identifier**

Product Name | Trimethylboron (0.1 to 13.9%) and Silane (Balance)
Product Code | 60065

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

Relevant identified use(s) | Semiconductor Use

1.3 Details of the supplier of the safety data sheet

Manufacturer | Air Liquide
2700 Post Oak Blvd.
Houston, TX 77056
United States
www.us.airliquide.com
sds@airliquide.com
Telephone (Technical) | 713-896-2896
Telephone (Technical) | 800-819-1704

1.4 Emergency telephone number

Manufacturer | 800-424-9300 - CHEMTREC
Manufacturer | +1 703-527-3887 - Outside United States

Section 2: Hazards Identification**EU/EEC**

According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP | Flammable Gases 1 - H220
Skin Corrosion 1B - H314
Serious Eye Damage 1 - H318
Acute Toxicity Inhalation 4 - H332
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335

DSD/DPD | Extremely Flammable (F+)
Corrosive (C)
Harmful (Xn)
R12, R17, R20, R34

2.2 Label Elements

CLP

DANGER



Hazard statements | H220 - Extremely flammable gas
 H314 - Causes severe skin burns and eye damage.
 H318 - Causes serious eye damage
 H332 - Harmful if inhaled
 H335 - May cause respiratory irritation

Precautionary statements

Prevention | P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
 P260 - Do not breathe gas.
 P264 - Wash thoroughly after handling.
 P271 - Use only outdoors or in a well-ventilated area.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response | P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
 P381 - Eliminate all ignition sources if safe to do so.
 P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
 P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P321 - Specific treatment, see supplemental first aid information.
 P363 - Wash contaminated clothing before reuse.
 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.
 P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage/Disposal | P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
 P405 - Store locked up.
 P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information | 0.1-13.9 percent of this product consists of an ingredient of unknown toxicity.

DSD/DPD



Risk phrases | R12 - Extremely flammable.
 R17 - Spontaneously flammable in air.
 R20 - Harmful by inhalation.
 R34 - Causes burns.

Safety phrases | S9 - Keep container in a well ventilated place
 S16 - Keep away from sources of ignition - No Smoking.
 S36 - Wear suitable protective clothing.
 S37 - Wear suitable gloves.
 S39 - Wear eye/face protection.
 S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other Hazards

CLP | This material is a Pyrophoric gas and is spontaneously flammable in air.
 This mixture can react violently with water or moisture to form boron oxide, corrosive silicic acid and heat.
 According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD | This material is a Pyrophoric gas and is spontaneously flammable in air.
 This mixture can react violently with water or moisture to form boron oxide, corrosive silicic acid and heat.
 According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012		Pyrophoric Gas Skin Corrosion 1B - H314 Serious Eye Damage 1 - H318 Acute Toxicity Inhalation 4 - H332 Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335
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2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements		Catches fire spontaneously if exposed to air - H250 Causes severe skin burns and eye damage. - H314 Causes serious eye damage - H318 Harmful if inhaled - H332 May cause respiratory irritation - H335
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Precautionary statements

Prevention		Do not breathe gas. - P260 Wash thoroughly after handling. - P264 Use only outdoors or in a well-ventilated area. - P271 Wear protective gloves/protective clothing/eye protection/face protection. - P280
Response		IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340 Call a POISON CENTER or doctor/physician if you feel unwell. - P312 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. - P303+P361+P353 Specific treatment, see supplemental first aid information. - P321 Wash contaminated clothing before reuse. - P363 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338 Immediately call a POISON CENTER or doctor/physician. - P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. - P301+P330+P331
Storage/Disposal		Store in a well-ventilated place. Keep container tightly closed. - P403+P233 Store locked up. - P405 Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

Supplemental information | 0.1-13.9 percent of this product consists of an ingredient of unknown toxicity.

2.3 Other hazards

OSHA HCS 2012		This mixture can react violently with water or moisture to form boron oxide, corrosive silicic acid and heat. Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.
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Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS		Compressed Gas - A Reactive Flammable Materials - B6 Corrosive - E
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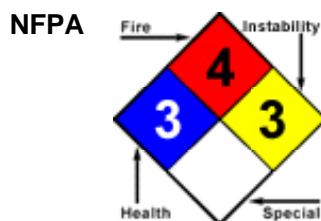
2.2 Label elements

WHMIS

- | Compressed Gas - A
- | Reactive Flammable Materials - B6
- | Corrosive - E

2.3 Other hazards**WHMIS**

- | This material is a Pyrophoric gas and is spontaneously flammable in air. This mixture can react violently with water or moisture to form boron oxide, corrosive silicic acid and heat.
- | In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

2.4 Other information**Section 3 - Composition/Information on Ingredients****3.1 Substances**

- | Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition				
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive
Trimethylboron	CAS:593-90-8 EINECS:209-816-3	0.1% TO 13.9%	NDA	EU DSD/DPD: Self Classified - F+, C R12, R17, R34 EU CLP: Self Classified - Flam. Gas. 1, H220; Press. Gas - Liq., H280; Skin Corr. 1B, H314 OSHA HCS 2012: Flam. Gas. 1; Press. Gas - Liq.; Skin Corr. 1B
Silane	CAS:7803-62-5 EINECS:232-263-4	Balance	Inhalation-Rat LC50 • 9600 ppm 4 Hour(s)	EU DSD/DPD: Self Classified - Xi R36/37/38; Xn, R20 F+, R12, R17 EU CLP: Self Classified - Flam. Gas 1, H220; Eye Irrit. 2, H319; Skin Irrit. 2, H315; Acute Tox. 4, H332; STOT SE 3: Resp. Irrit., H335 OSHA HCS 2012: Eye Irrit. 2A; Skin Irrit. 2; STOT SE 3: Resp. Irrit.; Acute Tox. 4 (Inhl); Pyr. Gas

Section 4 - First Aid Measures**4.1 Description of first aid measures****Inhalation**

- | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim

- is not breathing. If signs/symptoms continue, get medical attention.
- Skin** | Although exposure is unlikely, in case of contact immediately flush skin with running water. If skin irritation develops get medical advice/attention.
- Eye** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- Ingestion** | Never give anything by mouth to an unconscious person. Do NOT induce vomiting. First aid is not expected to be necessary if material is used under ordinary conditions and as recommended.

4.2 Most important symptoms and effects, both acute and delayed

- | Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

- | All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

4.4 Other information

- | Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO GASES WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn. Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media | SMALL FIRES: Dry chemical or CO₂.
LARGE FIRES: Water spray or fog.

Unsuitable Extinguishing Media | Water and halon extinguishers should NOT be used to fight fires of this material as it will react violently and possibly explosively.

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards | EXTREMELY FLAMMABLE
If this mixture is released at high pressure or high flow velocity, a delayed detonation may occur. Releases which have not spontaneously ignited must be considered extremely dangerous, and should not be approached.
Will form explosive mixtures with air.
Vapors may travel to source of ignition and flash back.
Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
Containers may explode when heated.
Ruptured cylinders may rocket.
Pyrophoric. Pure Silane ignites spontaneously upon contact with air, generating amorphous silicon dioxide and hydrogen; reaction is exothermic and rapid. Releases in confined spaces have detonated. In the absence of air, thermal decomposition starts at 400°C (752°F) and is rapid above 600°C (1112°F). Silane, upon contact with water or moisture, will generate silicic acid.

Hazardous Combustion Products | The products of thermal decomposition of this gas mixture include boron oxide, amorphous silicon dioxide and hydrogen.

5.3 Advice for firefighters

- | Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Always wear thermal protective clothing when handling refrigerated/cryogenic liquids. Wear positive pressure self-contained breathing apparatus (SCBA).

DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED
Move containers from fire area if you can do it without risk.

FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.

FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.

FIRE INVOLVING TANKS: Do not direct water at source of leak or safety devices; icing may occur.

FIRE INVOLVING TANKS: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- | Ventilate the area before entry. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures

- | ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Keep out of low areas. Stay upwind. LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile)

6.2 Environmental precautions

- | Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- | All equipment used when handling the product must be grounded.
Stop leak if you can do it without risk.
If possible, turn leaking containers so that gas escapes rather than liquid.
Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container.
Do not direct water at spill or source of leak.
Isolate area until gas has dispersed.

6.4 Reference to other sections

- | Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- | Keep away from heat and ignition sources – No Smoking. Take precautionary measures against static charges. All equipment used when handling the product must be grounded. Use only non-sparking tools. Use only with adequate ventilation. Ventilate closed spaces before entering. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe gas. Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Do not get in eyes, on skin, or on clothing. Cylinders should be firmly secured to prevent falling or being knocked-over. Use explosion-proof - electrical, ventilating and/or lighting equipment. Do not attempt to repair, adjust, or in any other way modify cylinders. If there is a malfunction or another type of operational problem, contact nearest distributor immediately. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or

incinerate container.

7.2 Conditions for safe storage, including any incompatibilities

- Storage**
- Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52C (125F). Cylinders must be protected from the environment, and preferably kept at room temperature approximately 21C (70F). Protect cylinders against physical damage. Cylinders should be firmly secured to prevent falling or being knocked-over. Store locked up.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	France	Ireland
Silane (7803-62-5)	TWAs	5 ppm TWA	5 ppm TWA	5 ppm TWAEV; 6.6 mg/m3 TWAEV	5 ppm TWA [VME]; 7 mg/m3 TWA [VME]	0.5 ppm TWA; 0.7 mg/m3 TWA
	STELs	Not established	Not established	Not established	Not established	1 ppm STEL; 1.5 mg/m3 STEL
Exposure Limits/Guidelines (Con't.)						
	Result	Israel	NIOSH	OSHA Vacated	Portugal	
Silane (7803-62-5)	TWAs	5 ppm TWA	5 ppm TWA; 7 mg/m3 TWA	5 ppm TWA; 7 mg/m3 TWA	5 ppm TWA [VLE-MP]	

Exposure Limits Supplemental

Spain

- Silane (7803-62-5): **Under Review:** (5 ppm VLA-ED)

8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use explosion-proof - electrical, ventilating and/or lighting equipment.

Personal Protective Equipment

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety glasses.

Skin/Body

- Wear leather gloves when handling cylinders.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

TWAEV = Time-Weighted Average Exposure Value

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless gas with a repulsive, suffocating odor.
Color	Colorless	Odor	Repulsive
Odor Threshold	Data lacking		
General Properties			
Boiling Point	-112 C(-169.6 F) Silane	Melting Point	-184.7 C(-300.46 F) Silane
Decomposition Temperature	Data lacking	pH	Not relevant
Specific Gravity/Relative Density	Data lacking	Density	0.0899 lb(s)/ft ³ @ 0 C(32 F) Silane
Water Solubility	Negligible Silane	Viscosity	0.0001 Poise (P, Ps) or dyne-second/cm ² @ 0 C(32 F) Silane
Explosive Properties	Data lacking	Oxidizing Properties:	Data lacking
Volatility			
Vapor Pressure	7.73 psig @ -122.2 C(-187.96 F) Silane	Vapor Density	1.2 Air=1 Silane
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Not relevant	UEL	96 % Silane
LEL	1.4 % Silane	Autoignition	Not relevant
Flammability (solid, gas)	Pyrophoric Gas.		
Environmental			
Octanol/Water Partition coefficient	Not relevant		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- This gas mixture can react with water to generate silicic acid and boron oxides. The gas is also pyrophoric and can ignite upon exposure to air.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Contact with air. Contact with incompatible materials and exposure to heat, sparks and other sources of ignition. If the cylinders are exposed to extremely high temperatures, these cylinders can rupture.

10.5 Incompatible materials

- This gas mixture will react violently with heavy metal halides and free halogens (e.g. bromine, chlorine, carbonyl chloride, antimony pentachloride, tin[IV] chloride). The mixture ignites in oxygen and can react with other oxidizers. The mixture is also incompatible with bases. The mixture will react with water and when release in air will

spontaneously ignite.

10.6 Hazardous decomposition products

- | Combustion: Silicon oxides, boron oxide, methane, hydrogen. Hydrolysis: Silicic acid, boron oxide, methane.

Section 11 - Toxicological Information**11.1 Information on toxicological effects**

Components		
Silane (86.1% TO 99.9%)	7803-62-5	Acute Toxicity: Inhalation-Rat LC50 • 9600 ppm 4 Hour(s)

GHS Properties	Classification
Acute toxicity	EU/CLP • Acute Toxicity - Inhalation 4 OSHA HCS 2012 • Acute Toxicity - Inhalation 4
Aspiration Hazard	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Skin Corrosion 1B OSHA HCS 2012 • Skin Corrosion 1B
Skin sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-RE	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-SE	EU/CLP • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Toxicity for Reproduction	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	EU/CLP • Serious Eye Damage 1 OSHA HCS 2012 • Serious Eye Damage 1

Potential Health Effects**Inhalation****Acute (Immediate)**

- | Harmful if inhaled. May cause respiratory irritation. Silane compounds can react with water to form silicic acid, which can be irritating to the mucous membranes and the respiratory system.

Chronic (Delayed)

- | No data available

Skin**Acute (Immediate)**

- | Causes severe skin burns and eye damage.

Chronic (Delayed)

- | No data available

Eye

- Acute (Immediate)** | Causes serious eye damage.
Chronic (Delayed) | No data available

Ingestion

- Acute (Immediate)** | Ingestion is not anticipated to be a likely route of exposure to this product.
Chronic (Delayed) | No data available

Key to abbreviations

LC = Lethal Concentration

Section 12 - Ecological Information**12.1 Toxicity**

- | Silane ignites spontaneously upon contact with air, generating amorphous silicon dioxide and hydrogen. Silane, upon contact with water or moisture, will generate silicic acid. All work practices must be directed at eliminating environmental contamination.

12.2 Persistence and degradability

- | Material data lacking.

12.3 Bioaccumulative potential

- | Material data lacking.

12.4 Mobility in Soil

- | Material data lacking.

12.5 Results of PBT and vPvB assessment

- | No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- | Silane, upon contact with water or moisture, will generate silicic acid. Silicic acid can lower the pH of water; subsequently, releases of Silane can have an adverse effect on aquatic life in contaminated bodies of water.

Potential Environmental Effects

- | The primary health hazard associated with Silane is the potential for severe thermal burns to plants and animals from contact with flames which result from the spontaneous ignition of this gas. Depending on the severity of the burns, such exposures can be fatal.

Section 13 - Disposal Considerations**13.1 Waste treatment methods**

- Product waste** | Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
Packaging waste | Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards

DOT	UN1954	Compressed gas, flammable, n.o.s. (Trimethylboron, Silane)	2.1	NDA	NDA
TDG	UN1954	COMPRESSED GAS, FLAMMABLE, N.O.S. (Trimethylboron, Silane)	2.1	NDA	NDA
IMO/IMDG	UN1954	COMPRESSED GAS, FLAMMABLE, N.O.S. (Trimethylboron, Silane)	2.1	NDA	NDA
IATA/ICAO	NDA	Forbidden	NDA	NDA	NDA

14.6 Special precautions for user

Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant.

14.8 Other information

This material is forbidden for transport via air.

Section 15 - Regulatory Information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

SARA Hazard Classifications | Acute, Fire, Pressure(Sudden Release of)

State Right To Know				
Component	CAS	MA	NJ	PA
Silane	7803-62-5	Yes	Yes	Yes
Trimethylboron	593-90-8	No	No	No

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
Silane	7803-62-5	Yes	No	Yes	Yes	No
Trimethylboron	593-90-8	No	No	No	Yes	No

Inventory (Con't.)		
Component	CAS	TSCA
Silane	7803-62-5	Yes
Trimethylboron	593-90-8	No

Canada**Labor****Canada - WHMIS - Classifications of Substances**

- | | | |
|------------------|-----------|--|
| • Silane | 7803-62-5 | A, B6 (listed under Tetrahydruure de silicium) |
| • Trimethylboron | 593-90-8 | Not Listed |

Canada - WHMIS - Ingredient Disclosure List

- | | | |
|------------------|-----------|------------|
| • Silane | 7803-62-5 | 1 % |
| • Trimethylboron | 593-90-8 | Not Listed |

Environment**Canada - CEPA - Priority Substances List**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Other**Canada - Accelerated Reduction/Elimination of Toxics (ARET)**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

China**Environment****China - Ozone Depleting Substances - First Schedule**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

China - Ozone Depleting Substances - Second Schedule

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

China - Ozone Depleting Substances - Third Schedule

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Other**China - Annex I & II - Controlled Chemicals Lists**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

China - Dangerous Goods List

• Silane	7803-62-5	
• Trimethylboron	593-90-8	Not Listed

China - Export Control List - Part I Chemicals

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Europe**Other****EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Germany**Environment****Germany - TA Luft - Types and Classes**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Germany - Water Classification (VwVwS) - Annex 1

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

• Silane	7803-62-5	ID Number 567, hazard class 1 - low hazard to waters (footnote 13)
• Trimethylboron	593-90-8	Not Listed

Germany - Water Classification (VwVwS) - Annex 3

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Other**Germany - Specifically Regulated Chemicals in TRGS**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Portugal**Other****Portugal - Prohibited Substances**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

United Kingdom**Environment****United Kingdom - Pollution Inventory - Schedule 1 - Thresholds for Releases to Air**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Other**United Kingdom - Workplace Exposure Limits (WELs) - Substances in Review**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

United Kingdom - List of Dangerous Substances in Water

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

United States**Labor****U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

Environment**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

United States - California**Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

United States - Pennsylvania**Labor****U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Silane	7803-62-5	Not Listed
• Trimethylboron	593-90-8	Not Listed

15.2 Chemical Safety Assessment

| No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date | 22/December/2014

Preparation Date | 05/February/2013

Disclaimer/Statement of Liability | To the best of Air Liquide's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

Key to abbreviations

NDA = No Data Available