



SAFETY DATA SHEET

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Revised edition no : 1

Date : 15/7/2005

Supersedes : 0/0/0

Silane**AL107**

Label 2.1 : flammable gas.



F+ : Extremely flammable

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

Trade name : Silane
MSDS No : AL107
Chemical formula : SiH₄
Company identification : AIR LIQUIDE SA
France
See paragraph 16 "OTHER INFORMATION"
Emergency phone nr : See paragraph 16 "OTHER INFORMATION"

2 COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Preparation : Substance.

Substance name	Contents	CAS No	EC No	Index No	Classification
Silane	100 %	7803-62-5	232-263-4	----	F+; R12 R17

Contains no other components or impurities which will influence the classification of the product.

3 HAZARDS IDENTIFICATION

Hazards identification : Liquefied gas.
Extremely flammable.
May ignite spontaneously in contact with air.

4 FIRST AID MEASURES

First aid measures

- **Inhalation** : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. May cause headache, nausea and irritation of respiratory tract. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- **Skin/eye contact** : Immediately flush eyes thoroughly with water for at least 15 minutes.
- **Ingestion** : Ingestion is not considered a potential route of exposure.

5 FIRE-FIGHTING MEASURES

- Flammable class** : Extremely flammable.
- Specific hazards** : Exposure to fire may cause containers to rupture/explode. Escaping gas cannot be extinguished.
- Hazardous combustion products** : Silica dust (inert - but may irritate respiratory tract and eyes).
- Extinguishing media**
 - **Suitable extinguishing media** : Dry powder.
Water.
Carbon dioxide.



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5 FIRE-FIGHTING MEASURES (continued)

- Unsuitable extinguishing media** : Halons.
- Specific methods** : If possible, stop flow of product.
Move away from the container and cool with water from a protected position.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
- Special protective equipment for fire fighters** : In confined space use self-contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Evacuate area.
Ensure adequate air ventilation.
Eliminate ignition sources.
- Environmental precautions** : Try to stop release.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
- Clean up methods** : Ventilate area.
Dust deposited may be vacuum cleaned or the area hosed down with water.

7 HANDLING AND STORAGE

- Storage** : Segregate from oxidant gases and other oxidants in store.
Keep container below 50°C in a well ventilated place.
- Handling** : Ensure equipment is adequately earthed.
Suck back of water into the container must be prevented.
Purge air from system before introducing gas.
Do not allow backfeed into the container.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Keep away from ignition sources (including static discharges).
Refer to supplier's container handling instructions.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

- Personal protection** : Ensure adequate ventilation.
Do not smoke while handling product.
- Occupational Exposure Limits** : Silane : TLV[©] -TWA [ppm] : 5
Silane : OEL (UK)-LTEL [ppm] : 0.5
Silane : OEL (UK)-STEL [ppm] : 1

9 PHYSICAL AND CHEMICAL PROPERTIES

- Physical state at 20 °C** : Liquefied gas.
- Colour** : Colourless gas.
- Odo(u)r** : Not known.
- Molecular weight** : 32
- Melting point [°C]** : -186
- Boiling point [°C]** : -111
- Critical temperature [°C]** : -3.5



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9 PHYSICAL AND CHEMICAL PROPERTIES (continued)

Vapour pressure, 20°C	: Not applicable.
Relative density, gas (air=1)	: 1.1
Relative density, liquid (water=1)	: 0.55
Solubility in water [mg/l]	: No reliable data available.
Flammability range [vol% in air]	: Pyrophoric.
Auto-ignition temperature [°C]	: < 85
Other data	: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity	: Can form explosive mixture with air. Can ignite spontaneously in air (fire cannot be put out). Can form an explosive mixture in air. May react violently with oxidants.
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11 TOXICOLOGICAL INFORMATION

Toxicity information	: May cause nausea and irritation of the respiratory tract. Hydrolysis of silanes in the body forms silicic acid or hydrated silica.
LC50 [ppm/1h]	: 20000

12 ECOLOGICAL INFORMATION

Ecological effects information	: No known ecological damage caused by this product.
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13 DISPOSAL CONSIDERATIONS

General	: Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Gases formed by combustion should be washed with water to remove silica. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.
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14 TRANSPORT INFORMATION

UN No.	: 2203
H.I. nr	: 23
ADR/RID	
- Proper shipping name	: SILANE
- ADR Class	: 2
- ADR/RID Classification code	: 2 F
- Labelling ADR	: Label 2.1 : flammable gas.
Other transport information	: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers : - Ensure that containers are firmly secured.

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14 TRANSPORT INFORMATION (continued)

- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.
- Ensure there is adequate ventilation.
- Compliance with applicable regulations.

15 REGULATORY INFORMATION

- EC Classification** : Not included in Annex I.
Proposed by the industry.
F+; R12
R17
- EC Labelling**
- **Symbol(s)** : F+ : Extremely flammable
 - **R Phrase(s)** : R12 : Extremely flammable.
R17 : Spontaneously flammable in air.
 - **S Phrase(s)** : S9 : Keep container in a well-ventilated place.
S16 : Keep away from sources of ignition - No smoking.
S33 : Take precautionary measures against static discharges.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

Recommended uses and restrictions : This SDS is for information purposes only and is subject to change without notice. [Prior to purchase of products, please contact your local AIR LIQUIDE office for a complete SDS (with Manufacturer's name and emergency phone number).]

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