

# Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

## 1 Identification of substance

- **Product details**

- **Trade name:** Disilane

- **Article number:** 117-01-0003

- **Creation date:** 04/02/2008

- **Manufacturer/Supplier:**

Linde Canada Limited

5860 Chedworth Way

Mississauga, Ontario L5R 0A2

Telephone (905) 501-1700

24-HOUR EMERGENCY TELEPHONE NUMBER:

(905) 501-0802

Linde

575 Mountain Avenue

Murray Hill, NJ 07974

Telephone (908) 464-8100

24-HOUR EMERGENCY TELEPHONE NUMBER:

CHEMTREC (800) 424-9300

- **Information department:** Customer Service Centre: 1-866-385-5349

## 2 Composition/Data on components

- **Chemical characterization:**

- **CAS No. Description**

Disilane

- **Identification number(s)**

- **EINECS Number:** 216-466-5

## 3 Hazards identification

- **Hazard description:**

D2B - Toxic material causing other toxic effects



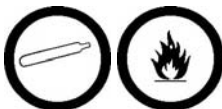
Harmful

Extremely flammable

- **WHMIS-symbols:**

Liquified gas.

B1 - Flammable gas



- **HMIS-ratings (scale 0 - 4)**

HEALTH	1
FIRE	4
REACTIVITY	0

Health = 1

Fire = 4

Reactivity = 0

(Contd. on page 2)

-CDN

## Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

Trade name: Disilane

(Contd. of page 1)

## · NFPA ratings (scale 0 - 4)



Health = 1  
Fire = 4  
Reactivity = 0

## · Information pertaining to particular dangers for man and environment:

Extremely flammable.  
Harmful by inhalation.

## · Classification system:

The classification is in line with internationally approved calculation standards. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

## · GHS label elements

**Danger**

2.2/1 - Extremely flammable gas.

**Warning**

2.5/C - Contains gas under pressure; may explode if heated.

**Warning**

3.1/4 - Harmful if inhaled.

## · Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well-ventilated area.

## · Response:

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
Eliminate all ignition sources if safe to do so.

## · Storage:

Store in a well-ventilated place.  
Protect from sunlight. Store in a well-ventilated place.

## 4 First aid measures

## · General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

## · After inhalation:

Supply fresh air. If required, provide artificial respiration and consult doctor. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably on the body side position.

## · After skin contact: Generally the product does not irritate the skin.

(Contd. on page 3)

CDN

## Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

**Trade name: Disilane**

(Contd. of page 2)

- **After eye contact:** Rinse opened eye for at least 15 minutes under running water. Then consult a doctor.
- **After swallowing:** Not applicable

### 5 Fire fighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental release measures

- **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation.  
Eliminate ignition sources  
Stop leak - ONLY if possible to do so without risk.
- **Measures for environmental protection:**  
Prevent seepage into sewage system, workpits and/or cellars.  
In case of gas release or seepage into the ground inform responsible authorities.
- **Measures for cleaning/collecting:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

### 7 Handling and storage

- **Handling:** Do not mix with air or oxygen above atmospheric pressure.
- **Information for safe handling:**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle cylinder with care.  
Handle with care. Avoid jolting, friction, and impact.  
Use only in well ventilated areas.  
Store cylinders upright with valve protection cap in place and firmly secured to prevent falling or being knocked over.  
If difficulty with operating cylinder valve is experienced discontinue use and contact supplier.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Do not expose cylinder to temperatures higher than 50°C (122 °F)
- **Information about storage in one common storage facility:**  
Store away from oxidizing agents.  
Store separately from cylinders containing oxygen or oxidants by a minimum distance of 20' or by a barrier of non-combustible material at least 5' high having a fire resistant rating of at least 30minutes.

(Contd. on page 4)

## Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

**Trade name: Disilane**

(Contd. of page 3)

Sources of ignition should be removed from storage area.

- **Further information about storage conditions:**

Keep cylinder valve tightly closed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Store cylinder in a well ventilated area.

Store in accordance with local fire code and/or building code or any pertaining regulations.

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:**

Adequate local ventilation.

Safety showers and eyewash stations should be nearby.

- **Components with limit values that require monitoring at the workplace:** Not required.

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Protective clothing should be kept free of oil and grease.

PPE should be inspected and maintained regularly to retain its effectiveness.

- **Breathing equipment:**

Use atmosphere-supplying respirators (e.g. supplied-air: demand, pressure-demand, or continuous-flow or self-contained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary self-contained air supply atmosphere-supplying respirator) in case of insufficient ventilation.

- **Protection of hands:**



Protective gloves.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Eye protection:** Safety glasses

### 9 Physical and chemical properties

- **General Information**

<b>Form:</b>	Compressed gas
<b>Color:</b>	Colorless
<b>Odor:</b>	Unpleasant

- **Change in condition**

**Melting point/Melting range:** -133°C

**Boiling point/Boiling range:** -14°C

(Contd. on page 5)

CDN

## Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

**Trade name: Disilane**

(Contd. of page 4)

- **Flash point:** Not applicable.
- **Danger of explosion:** In use, may form flammable/explosive vapour-air mixture.

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions**  
May form explosive gas mixture with air.  
May react with oxidizing agents.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

### 11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** LC50 > 5000ppm
- **Primary irritant effect:**
- **on the skin:** No irritating effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

### 13 Disposal considerations

- **Product:**
- **Recommendation:** Unused product should be returned to vendor.
- **Uncleaned packagings:**
- **Recommendation:**  
Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.
- **Recommended cleansing agent:** None applicable.

### 14 Transport information

- **TDG and DOT regulations:**



- **Hazard class:** 2
- **Identification number:** UN1954
- **Proper shipping name (technical name):** COMPRESSED GAS, FLAMMABLE, N.O.S. (Disilane)

(Contd. on page 6)

CDN

## Material Safety Data Sheet



Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

**Trade name: Disilane**

(Contd. of page 5)

- |   |  |
|---|--|
| <b>· Label</b>  | 2.1  |
| <b>· Maritime transport IMDG:</b>   |  |
|  |  |
| <b>· IMDG Class:</b>  | 2  |
| <b>· UN Number:</b>   | 1954   |
| <b>· Label</b>  | 2.1  |
| <b>· Marine pollutant:</b>  | No   |
| <b>· Proper shipping name:</b>  | COMPRESSED GAS, FLAMMABLE, N.O.S. (Disilane) |
| <b>· Air transport ICAO-TI and IATA-DGR:</b>                                      |  |
|  |  |
| <b>· ICAO/IATA Class:</b>   | 2  |
| <b>· UN/ID Number:</b>  | 1954   |
| <b>· Label</b>  | 2.1  |
| <b>· Proper shipping name:</b>  | COMPRESSED GAS, FLAMMABLE, N.O.S. (Disilane) |
| <b>· UN "Model Regulation":</b> UN1954; COMPRESSED GAS, FLAMMABLE, N.O.S.; 2.1    |  |

### 15 Regulations

- Sara**
- |  |
|--|
| <b>· Section 355 (extremely hazardous substances):</b> |
| Substance is not listed.                               |
- Section 313 (Specific toxic chemical listings):**
- |                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|
- TSCA (Toxic Substances Control Act):**
- |                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|
- Proposition 65**
- |  |
|--|
| <b>· Chemicals known to cause cancer:</b>                            |
| Substance is not listed.   |
| <b>· Chemicals known to cause reproductive toxicity for females:</b> |
| Substance is not listed.   |
| <b>· Chemicals known to cause reproductive toxicity for males:</b>   |
| Substance is not listed.   |
| <b>· Chemicals known to cause developmental toxicity:</b>            |
| Substance is not listed.   |

(Contd. on page 7)

## Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

**Trade name: Disilane**

(Contd. of page 6)

- **Carcinogenity categories**

- **EPA (Environmental Protection Agency)**

Substance is not listed.

- **NTP (National Toxicology Program)**

Substance is not listed.

- **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

Substance is not listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

- **Product related hazard informations:**

The product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

- **Hazard symbols:**

Harmful  
Extremely flammable

- **Risk phrases:**

Extremely flammable.  
Harmful by inhalation.

- **Safety phrases:**

Keep container tightly closed and in a well-ventilated place.  
Keep away from sources of ignition - No smoking.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Please refer to the section 3 for NFPA and HMIS Hazard Codes.

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(Contd. on page 8)

## Material Safety Data Sheet

Printing date 08/14/2008

Version 3

Reviewed on 08/14/2008

**Trade name: Disilane**

(Contd. of page 7)

**GENERAL DISCLAIMER**

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between Linde Inc. (or any of its affiliates and subsidiaries) and the purchaser.

· **Department issuing MSDS:** Customer Service Centre: 1-866-385-5349

**· Abbreviations and Acronyms:**

HMIS: Hazardous Materials Identification System

NFPA: National Fire Protection Association

IMDG: International Marine Code for Dangerous Goods

N/A: Not Applicable

LC50: Lethal Concentration, 50 Percent

LD50: Lethal Dose, 50 Percent

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

WHMIS: Workplace Hazardous Materials Information System (Canada)

CDN