Safety Data Sheet

Material Name: DISILANE(S12H6)

Section 1. IDENTIFICATION

1. **Material Name** : DISILANE(S12H6)

2. **Product use:** None known
   Restrictions on Use: None known

3. **Manufacturer Information**
   Linde Korea Corporation, Ltd.
   123-30 Injusandan-ro, Inju-Myeon,
   Asan-si, Chungchungnam-do
   Korea
   Emergency #:+82-41-538-5700

Section 2. HARZARDS IDENTIFICATION

1. **GHS Classification**
   Flammable Gases: Category 1
   Gas Under pressure : Liquefied gas

2. **GHS LABEL ELEMENTS**
   - **Symbol(s)**

   - **Signal Word:** DANGER
   - **Hazard Statement(s)**

     H220: Extremely flammable gas

     H280: Contains gas under pressure; may explode if heated

- **Precautionary Statement(s)**

  <**Prevention**>

  P210: Keep away from heat, sparks, open flame, and hot surfaces-No smoking.

  <Response>

  P377: Leaking gas fire: Do not extinguish, unless lead can be stopped safely.

  P381: Eliminate all ignition sources if safe to do so.

  <Storage>

  P403: Store in well-ventilated place.

  P410+P403: Protect from sunlight. Store in well-ventilated place.

  <Disposal>

  Not available

3. **Other Hazard which do not Result in Classification**

   - **NFPA Ratings** (0~4)

     Health: 1 Fire: 4 Reactivity: 2

Section 3. COMPOSTION/INFORMATION ON INGREDIENTS

COMPONENTS	TRADE NAMES/SYNONYMS	CAS#/IDENTIFICATION#	PERCENT
DISILANE(S12H6)	DISILANE(S12H6)	1590-87-0	100

Section 4. FIRST AID MEASURES

1. **Eyes**

   Get immediate medical attention.

2. **Skin**

   Get immediate medical attention.

   Thaw frozen clothing before removing it. In the case of burns, immediately cool down the affected area for as long as possible in cold water, and do not remove any clothing adhering to the skin.

   In case of contact with liquefied gas, rust the area with lukewarm water. Contact with gas or liquefied gas may cause burns, serious injury and frostbite

3. **Inhalation**

   Remove to uncontaminated area.

Get immediate medical attention.

Give artificial respiration if not breathing.

If breathing is difficult, oxygen should be administered.

Make the victim warm and stable.

4. **Ingestion**

Get immediate medical attention.

5. **Note to Physicians**

Have the health care worker know about the material and take protective measures.

Section 5. FIRE FIGHTING MEASURES

1. **Suitable Extinguishing Media:** alchol-resistant foam, carbon dioxide or water spray

Use dry sand or earth for digestion.

Unsuitable Extinguishing Media: None known

2. **Specific Hazards Arising from the Chemical**

- **Thermal decomposition product:** None known
- **Fire and Explosion Hazards:**

Extreme flammable gas

High pressure gas; May ignite when heated

Violent polymerization may cause fire and explosion.

Containers may rupture or explode if exposed to heat.

Form explosive mixture with air

Extremely flammable.

Easily ignited by heat, sparks and flames.

Vapors or gases may ignite at distant ignition sources and flash back.

Cylinders exposed to fire can release flammable gases

Some substances may be irritating when inhaled at high concentrations

Concentrations Vapors may cause dizziness or suffocation without self-awarenes

May cause irritation, corrosive and toxic gases in case of fire

3. **Protective Equipment and Precautions for Firefighters**

Let burn unless leak can be stopped immediately.

Remove all ignition sources if safe to do so.

Keep out of the area and keep at a safe distance.

Note that liquefied gas Vapors spread over the ground because they are heavier than air.
Be careful that broken cylinders may fly.
Do not extinguish leaking gas fires if the leak does not stop.
Remove containers from fire area if it is safe to do so.

Do not pour water directly into the exposure source or safety equipment as it may freeze in the event of a tank fire.
In case of tank fire, extinguish at maximum distance or use unmanned fire fighting equipment
Cool containers with large amounts of water even after the fire has extinguished.
If there is a high tone on the pressure relief device in the event of a tank fire, or if the tank is discolored, withdraw immediately. In the event of a tank fire, withdraw from the flamed tank
In the event of a large fire in a tank fire, use unmanned fire fighting equipment and let burn if it is not possible

Section 6. ACCIDENTAL RELEASE MEASURES

1. Personal Precautions

Do not extinguish, unless leak can be stopped safely.

Remove all ignition sources as very fine particles may cause fire or explosion. If possible, turn the leak vessel to release it as a gas rather than a liquid.
Isolate the contaminated area until the gas is completely diffused and diluted
Contact material with frozen liquid may break easily
Do not touch or walk with exposed material.
Do not pour directly into the source of leak.
Remove all ignition sources.
Use water spray to reduce vapors or disturb vapor clouds so that water does not come into contact with spills.
Be sure to ground all equipment when handling materials

Stop leak if possible without personal risk.

Note the substances and conditions to avoid

2. . Environmental Precautions

Do not allow vapors to escape through drains, ventilation, or enclosed spaces.

3. Methods for Containment and Clean up

To extinguish, pile up the embankment and collect the water.

Section 7. HANDLING AND STORAGE

1. Handling Procedures

Do not expose, cut, expose to welding, soldering, bonding, punching, grinding or heat exposure, flame, sparks, static electricity or other sources of ignition.
Follow all MSDS / label precautions as product residues may remain after emptying containers.
Always ground all equipment when handling materials.
Note the substances and conditions to avoid.
Refer to engineering controls and personal protective equipment.

2. Storage Procedures(including conditions to avoid)

Heat • Sparks • Flames • Keep away from heat • No smoking
Avoid direct sunlight and store in a well-ventilated place.
Do not expose containers to heat, as they may cause pressure to rise when exposed to heat.
Note the substances and conditions to avoid.
Keep tightly closed.

Section8. EXPOSURE CONTROLS/PERSONAL PROTECTION

1. Component Exposure Limits, Biological Limit

Local regulation: No data

ACGIH: No data

Biological Limit Values: No data

2. Engineering Controls

No data

3. PERSONAL PROTECTIVE EQUIPMENT

- **Respiratory Protection:** Under conditions of direct contact or exposure to the substance, use respiratory protective clothing approved by the Korean Occupational Safety and Health Administration(KOSHA)
- **Eyes/Face:** Under conditions of direct contact or exposure to the substance, Wear splash resistant safety goggles with a faceshield approved by the Korean Occupational Safety and Health Administration(KOSHA)
- **Hands:** Wear appropriate chemical resistant gloves approved by the Korean Occupational Safety and Health Administration(KOSHA)
- **Body:** Wear appropriate chemical resistant clothing approved by the Korean

Occupational Safety and Health Administration(KOSHA)

It is desirable to wear a cotton or Nomex® work clothing to prevent the generation of static electricity

Section9. PHYSICAL AND CHEMICAL PROPERTIES

Articles		Data	Additional Info.	Source
Appearance	**Physical State**	Liquefied Gas		
	Color	Colorless		
Ordor		Irritating Ordor		
Odor Threshold		Not available		
pH		Not available		
Melting/freezing Point		-133 ℃		
Boiling point		-14.3℃		
Flash Point		No data		
Evaporation rate		Not available		
Flammability (solid, gas)		Flammable		
UEL/LEL		100/1%		GESTIS
Vapor Pressure		Not available		
Solubility		Soluble	Solvent solubility: Soluble: alcohol, benzene, carbon disulfide, ethyl silicate	
Vapor Density		Not available		
Gravity		Not applicable		
Log KOW		Not applicable		
Auto Ignition		No data		
Viscosity		No data		
Molecular Weight		62.22		

Section10. STABILITY AND REACTIVITY

1. **Chemical Stability & Possibility of Hazardous Reactions**

Extreme flammable gas

High pressure gas; May ignite when heated

Violent polymerization may cause fire and explosion.

Containers may rupture or explode if exposed to heat.

Form explosive mixture with air

Extremely flammable.

Easily ignited by heat, sparks and flames.

Vapors or gases may ignite at distant ignition sources and flash back.

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Some substances may be irritating when inhaled at high concentrations

Concentrations Vapors may cause dizziness or suffocation without self-awarenes

May cause irritation, corrosive and toxic gases in case of fire

2. **Conditions to avoid**

Avoid heat, flames, sparks –No smoking.

3. **Incompatibles materials**

No data

4. **Hazardous Decomposition**

Irritant, corrosive, toxic gas

Section 11. TOXICOLOGICAL INFORMATION

1. **Information on possible routes of exposure**

Irritation, nausea, headache irritation

2. **Health information**

- Acute toxicity

- oral: No data available
- dermal: No data available
- inhalation: No data available

- **Dermal irritation**

No data available

- **Eye sensitizer**

No data available

- **Respiratory Sensitizer**

No data available

- **Dermal Sensitizer**

No data available

- **Carcinogenicity**

No data available

- **RTECS Mutagenic**

  No data available

- **Reproductive toxicity**

  No data available

- **Specific Target Organ Toxicity – Single Exposure**

  No data available

- **Specific Target Organ Toxicity – Repeated Exposure**

  No data available

- **Aspiration Hazard**

  No data available

Section12. ECOLOGICAL INFORMATION

1. **Ecotoxicity**
   - **Fish:** LC50 580.394 ㎎/ℓ 96hr * source: ECOSAR
   - **Selfish:** LC50 573.618 ㎎/ℓ 48hr others(Daphinid) source: ECOSAR
   - **Birds**: EC50 335.253 ㎎/ℓ 96hr others(Green algae) source: ECOSAR
2. **Persistence and Degradability**

   No data available
3. **Bioaccumulative Potential**

   - Concentration: 3.162 Source: QSAR

   - **Biodegradability:** Not available
4. **Mobility in Environmental Media**

   No data available
5. **Other information**

   No data available

Section 13. DISPOSAL CONSIDERATIONS

1. **Disposable Methods:**

   1) Incinerate.

   2) If it is difficult to incinerate, land it in a man-made landfill capable of landfilling designated wastes after crushing, cutting or melting to a size of 15 centimeters or less in maximum diameter.

2. Disposable consideration(including contaminated containers and packaging)

No data available

Section 14. TRANSPORT INFORMATION

1. **UN #:** UN3161
2. **Shipping Name:** Liquefied gas, Flammable, n.o.s
3. **Hazard Class:** 2.1
4. **Container Class:**
5. **Marine pollutant:** Not available
6. **Special precautions for user in need of transport / transportation**

○ **Emergency measures in case of fire:** F-D

○ **Emergency response:** S-U

Section 15. REGULATORY INFORMATION

1. **Regulation by the Industrial Safety and Health Act:**

Hazardous and Hazardous Substances that must be submitted to the Process Safety Report (PSM).

2. **Chemical Substance Control Law:** Not applicable
3. **Hazardous Material Safety Control Law:** Not applicable
4. **Regulation by Waste Management Act:** Designated waste
5. Other regulations:

○ Domestic regulation

- Persistent organic pollutants Acts: Not applicable

○ Foreign regulation

- US regulation-OHSA : Not applicable
- US regulation-CERCLA : Not applicable
- US regulation-EPCRA 302 : Not applicable
- US regulation-EPCRA 304: Not applicable
- US regulation-EPCRA 313: Not applicable
- US regulation-Rotterdam Convention : Not applicable
- US regulation-Stockholm Convention : Not applicable

- US regulation-Montreal Protocol: Not applicable
- EU classification information (confirmed classification result): Not applicable
- EU classification information (Signal Word): Not applicable
- EU classification information (Safety Word): Not applicable

Section 16. OTHER INFORMATION

1. Source of data

   MSDS from KOSHA, Number of revisions 3, Date of last revision Nov.21, 2013

2. Original Date : Dec. 21, 2012
3. Number of revisions : 3

   Last revision date: Feb. 24, 2017

   Last confirmed date: Feb. 24, 2017

4. Others

   The prepared MSDS is edited and partially corrected with reference to the MSDS provided by Korea Occupational Safety and Health Agency.