**Section 1 - IDENTIFICATION**

**Manufacturer Information**
MATHESON TRI-GAS, INC.
150 Allen Road, Suite 302
Basking Ridge, NJ 07920

General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

**Product Identifier:** Dichlorosilane

**Trade Names/Synonyms**
Dichlorosilicane

**Chemical Family**
silicon, hydrides

**Product Use**
industrial

**Restrictions on Use**
None known.

**Section 2 - HAZARDS IDENTIFICATION**

**GHS Classification**
- Flammable gas, Category 1
- Gas under pressure, Liquefied gas
- Acute Toxicity (Inhalation), Category 2
- Skin corrosion/irritation, Category 1
- Eye damage/irritation, Category 1
- Specific Target Organ Toxicity - Single Exposure, Category 1 (respiratory system)

**GHS LABEL ELEMENTS**

**Symbol(s)**

**Signal Word**
DANGER

**Hazard Statement(s)**
- Extremely flammable gas
- Contains gas under pressure; may explode if heated
- Fatal if inhaled
- Causes severe skin burns and eye damage
- Causes damage to respiratory system.
Precautionary Statement(s)

Prevention
Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Do not breathe gas. Use only outdoors or in a well-ventilated area. Wear respiratory protection. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Do not eat, drink, or smoke when using this product.

Response
Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. IF exposed: Call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Specific treatment is urgent, see first aid section of Safety Data Sheet. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Storage
Store in a well-ventilated place. Protect from sunlight. Keep container tightly closed. Store locked up.

Disposal
Dispose of in accordance with applications with applicable regulations.

Other Hazards which do not Result in Classification
Pyrophoric gas. May cause frostbite upon sudden release of compressed gas.

* * *Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS* * *

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>4109-96-0</td>
<td>Dichlorosilane</td>
<td>100</td>
</tr>
</tbody>
</table>

* * *Section 4 - FIRST AID MEASURES* * *

Inhalation
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

Eyes
Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion
If a large amount is swallowed, get medical attention.

Note to Physicians
For inhalation, consider oxygen.

Symptoms: Immediate
respiratory tract burns, skin burns, eye burns, mucous membrane burns, respiratory system damage

Symptoms: Delayed
No information on significant adverse effects.

* * *Section 5 - FIRE FIGHTING MEASURES* * *
See Section 9 for Flammability Properties
Safety Data Sheet

Material Name: Dichlorosilane
SDS ID: 00244278

Specific Hazards Arising from the Chemical
Severe fire hazard. Gas/air mixtures are explosive. The gas is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Extinguishing Media
carbon dioxide, regular dry chemical, water spray, alcohol resistant foam
Large fires: Use regular foam or flood with fine water spray.

Unsuitable Extinguishing Media
Do not use water.

Protective Equipment and Precautions for Firefighters
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. For tank, rail car or tank truck: Let burn unless leak can be stopped immediately. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Large fires: Flood with fine water spray. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Hazardous Combustion Products
Combustion: acid halides, halogenated compounds, hydrogen, oxides of silicon, silica

** *Section 6 - ACCIDENTAL RELEASE MEASURES* **

Personal Precautions
Wear personal protective clothing and equipment, see Section 8.

Environmental Precautions
Avoid release to the environment.

Methods for Containment
Avoid heat, flames, sparks and other sources of ignition. Stop leak if safe to do so. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition.

Cleanup Methods
Do not get water directly on material. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

** *Section 7 - HANDLING AND STORAGE* **

Handling Procedures

Storage Procedures

Incompatibilities water, halo carbons, oxidizing materials
**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

Component Exposure Limits
ACGIH, EU, OSHA, and NIOSH have not developed exposure limits for any of this product’s components.

Component Biological Limit Values
There are no biological limit values for any of this product’s components.

Engineering Controls
Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face
Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing
For the gas: Wear appropriate chemical resistant clothing. For the liquid: Wear appropriate protective, cold insulating clothing.

Glove Recommendations
For the gas: Wear appropriate chemical resistant gloves. For the liquid: Wear insulated gloves.

Respiratory Protection
Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

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<thead>
<tr>
<th>Physical State:</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor:</td>
<td>irritating odor</td>
</tr>
<tr>
<td>pH:</td>
<td>acidic in solution</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>8 °C</td>
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<tr>
<td>Decomposition:</td>
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<tr>
<td>LEL:</td>
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<td>Vapor Pressure:</td>
<td>1.7 atm @ 20 °C</td>
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<td>Specific Gravity (water=1):</td>
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<tr>
<td>Auto Ignition:</td>
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<td>Molecular Weight:</td>
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<table>
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<td>Physical Form:</td>
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<td>Odor Threshold:</td>
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<td>Melting/Freezing Point:</td>
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<td>Flash Point:</td>
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<tr>
<td>Evaporation Rate:</td>
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<tr>
<td>UEL:</td>
<td>99 %</td>
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<tr>
<td>Vapor Density (air = 1):</td>
<td>3.5</td>
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<tr>
<td>Water Solubility:</td>
<td>hydrolyzes, reacts</td>
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<tr>
<td>Coeff. Water/Oil Dist:</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>(Not available)</td>
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<tr>
<td>Molecular Formula:</td>
<td>H2-Si-Cl2</td>
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</table>

Solvent Solubility
Soluble: benzene, carbon tetrachloride, ether
**Section 10 - STABILITY AND REACTIVITY**

**Chemical Stability**
May react on contact with water. Releases corrosive gases. Avoid contact with incompatible materials.

**Conditions to Avoid**
Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Keep out of water supplies and sewers.

**Possibility of Hazardous Reactions**
May polymerize violently or explosively. Avoid contact with incompatible materials.

**Incompatible Materials**
- water, halo carbons, oxidizing materials

**Hazardous Decomposition**
- **Combustion:** acid halides, halogenated compounds, hydrogen, oxides of silicon, silica

**Section 11 - TOXICOLOGICAL INFORMATION**

**Acute and Chronic Toxicity**

**Component Analysis - LD50/LC50**
The components of this material have been reviewed in various sources and no selected endpoints have been identified.

**RTECS Acute Toxicity (selected)**
The components of this material have been reviewed, and RTECS publishes the following endpoints:
- **Dichlorosilane (4109-96-0)**
  - **Inhalation:** 144 ppm/4 hour Inhalation Mouse LC50
  - 215 ppm Inhalation Rat LC50

**Acute Toxicity Level**
- **Dichlorosilane (4109-96-0)**
  - **Toxic:** inhalation

**Immediate Effects**
- respiratory tract burns, skin burns, eye burns, mucous membrane burns, respiratory system damage

**Delayed Effects**
- No information on significant adverse effects.

**Irritation/Corrosivity Data**
- No animal testing data available for skin or eyes.

**RTECS Irritation**
The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

**Local Effects**
- **Dichlorosilane (4109-96-0)**
  - **Corrosive:** inhalation, skin, eye, ingestion

**Respiratory Sensitizer**
- No data available.

**Dermal Sensitizer**
- No data available.

**Carcinogenicity**

**Component Carcinogenicity**
None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

**Mutagenic Data**
- No data available.
RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Reproductive Effects Data

No data available.

Tumorigenic Data

No data available.

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Specific Target Organ Toxicity - Single Exposure

respiratory system, skin, eyes

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Aspiration Hazard

No data available.

Medical Conditions Aggravated by Exposure

No data available.

** *Section 12 - ECOLOGICAL INFORMATION* **

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Abiotic Degradation

Hydrolyzes on contact with water releasing hydrogen chloride and hydrochloric acid.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility in Environmental Media

No data available.

** *Section 13 - DISPOSAL CONSIDERATIONS* **

Disposal Methods


Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

** *Section 14 - TRANSPORT INFORMATION* **

US DOT Information

Shipping Name: Dichlorosilane
UN/NA #: UN2189  Hazard Class: 2.3
Required Label(s): 2.3, 2.1, 8
Additional Info.: Toxic-Inhalation Hazard Zone B

IMDG Information

Shipping Name: Dichlorosilane
UN #: UN2189  Hazard Class: 2.3
Required Label(s): 2.1, 8
**Section 15 - REGULATORY INFORMATION**

**Component Analysis**

**U.S. Federal Regulations**

This material contains one or more of the following chemicals required to be identified under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

**Dichlorosilane (4109-96-0)**

**OSHA (safety):** 2500 lb TQ

**SARA 311/312 Hazardous Categories**

- **Acute Health:** Yes  
- **Chronic Health:** No  
- **Fire:** Yes  
- **Pressure:** Yes  
- **Reactive:** Yes

**U.S. State Regulations**

The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
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</thead>
<tbody>
<tr>
<td>Dichlorosilane</td>
<td>4109-96-0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Not regulated under California Proposition 65

**Component Analysis - Inventory**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>US</th>
<th>CA</th>
<th>EU</th>
<th>AU</th>
<th>PH</th>
<th>JP</th>
<th>KR</th>
<th>CN</th>
<th>NZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichlorosilane</td>
<td>4109-96-0</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Section 16 - OTHER INFORMATION**

**NFPA Ratings:**

- **Health:** 4  
- **Fire:** 4  
- **Reactivity:** 2

**Hazard Scale:** 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**Key / Legend**

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States
Other Information

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End of Sheet 00244278