

## Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

### \*\*\* Section 1 - PRODUCT AND COMPANY IDENTIFICATION \*\*\*

**Material Name:** DICHLOROSILANE

#### 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)

#### Chemical Family

silicon, hydrides

#### Synonyms

MTG MSDS 27; DICHLOROSILICANE; UN 2189; RTECS: VV3050000

### \*\*\* Section 2 - HAZARDS IDENTIFICATION \*\*\*

#### EMERGENCY OVERVIEW

**Color:** colorless

**Physical Form:** gas

**Odor:** irritating odor

**Health Hazards:** respiratory tract burns, skin burns, eye burns, mucous membrane burns

**Physical Hazards:** Flammable gas. May cause flash fire. May polymerize. Containers may rupture or explode. May react on contact with air, heat, light or water.

#### POTENTIAL HEALTH EFFECTS

##### Inhalation

**Short Term:** burns, difficulty breathing, headache, dizziness, bluish skin color, lung congestion

**Long Term:** digestive disorders

##### Skin

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

**Short Term:** burns

**Long Term:** same as effects reported in short term exposure

## Eye

**Short Term:** irritation (possibly severe)

**Long Term:** same as effects reported in short term exposure

## Ingestion

**Short Term:** burns

**Long Term:** same as effects reported in short term exposure

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

CAS	Component	Percent
4109-96-0	DICHLOROSILANE	100.0

### \*\*\* 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.

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

## \*\*\* Section 5 - FIRE FIGHTING MEASURES \*\*\*

See Section 9 for Flammability Properties

**NFPA Ratings: Health: 4 Fire: 4 Reactivity: 2**

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

### Flammable Properties

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

Large fires: Use regular foam or flood with fine water spray.

### 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.

## \*\*\* Section 6 - ACCIDENTAL RELEASE MEASURES \*\*\*

### Occupational spill/release

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water inside container. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

## \*\*\* Section 7 - HANDLING AND STORAGE \*\*\*

### Storage Procedures

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

## \*\*\* Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION \*\*\*

### Component Analysis

ACGIH, 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.

### Ventilation

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. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

### Protective Clothing

Wear appropriate chemical resistant clothing.

### Glove Recommendations

Wear appropriate chemical resistant 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 -**

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

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 \*\*\*

<b>Physical State:</b>	Gas	<b>Appearance:</b>	Not available
<b>Color:</b>	colorless	<b>Physical Form:</b>	gas
<b>Odor:</b>	irritating odor	<b>Odor Threshold:</b>	Not available
<b>pH:</b>	acidic in solution	<b>Melting/Freezing Point:</b>	-122 °C
<b>Boiling Point:</b>	8 °C	<b>Flash Point:</b>	-37 °C
<b>LEL:</b>	4.1 %	<b>UEL:</b>	99 %
<b>Vapor Pressure:</b>	1.7 atm @ 20 °C	<b>Vapor Density (air = 1):</b>	3.5
<b>Specific Gravity (water=1):</b>	1.2	<b>Water Solubility:</b>	reacts
<b>Auto Ignition:</b>	58 °C	<b>Molecular Formula:</b>	H <sub>2</sub> -SI-CL <sub>2</sub>

### Solvent Solubility

**Soluble:** benzene, carbon tetrachloride, ether

## \*\*\* Section 10 - STABILITY AND REACTIVITY \*\*\*

### Chemical Stability

May polymerize violently or explosively. 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.

### Materials to Avoid

combustible materials, halo carbons, oxidizing materials

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

## Decomposition Products

acid halides, halogenated compounds, crystalline silica, acid halides, oxides of silicon

## Possibility of Hazardous Reactions

May polymerize violently or explosively. Avoid contact with incompatible materials.

### \*\*\* Section 11 - TOXICOLOGICAL INFORMATION \*\*\*

#### Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

##### DICHLOROSILANE (4109-96-0)

Inhalation LC50 Mouse 144 ppm 4 h

#### Acute Toxicity Level

##### DICHLOROSILANE (4109-96-0)

**Toxic:** inhalation.

#### Component Carcinogenicity

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

#### Local Effects

##### DICHLOROSILANE (4109-96-0)

**Corrosive:** inhalation, skin, eye, ingestion.

### \*\*\* Section 12 - ECOLOGICAL INFORMATION \*\*\*

#### Component Analysis - Aquatic Toxicity

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

### \*\*\* Section 13 - DISPOSAL CONSIDERATIONS \*\*\*

#### Disposal Methods

Dispose in accordance with all applicable regulations.

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

## 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

#### TDG Information

**Shipping Name:** Dichlorosilane

**UN #:** UN2189 **Hazard Class:** 2.3

**Required Label(s):** 2.3, (2.1), (8)

### \*\*\* Section 15 - REGULATORY INFORMATION \*\*\*

#### 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

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

# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

## U.S. State Regulations

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

Component	CAS	CA	MA	MN	NJ	PA	RI
DICHLOROSILANE	4109-96-0	No	No	No	Yes	Yes	No

Not regulated under California Proposition 65

## Canada WHMIS

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

**DICHLOROSILANE (4109-96-0)**

1 %

## Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
DICHLOROSILANE	4109-96-0	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No



# Safety Data Sheet

Material Name: DICHLOROSILANE

SDS ID: MAT06970

## \*\*\* Section 16 - OTHER INFORMATION \*\*\*

### 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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