



MATHESON

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Safety Data Sheet

Material Name: Dichlorosilane

SDS ID: 00244278

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

Dichlorosilane

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.

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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

CAS#	Component	Percent
4109-96-0	Dichlorosilane	100

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

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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

Do not breathe gas. Wash thoroughly after handling. Subject to handling regulations: U.S. OSHA 29 CFR 1910.111.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Grounding and bonding required. Use non-sparking tools and equipment. Keep dry. Store in a well-ventilated area. Protect from sunlight. Store locked up. Store in a tightly closed container. Protect from physical damage. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

Incompatibilities water, halo carbons, oxidizing materials

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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

Physical State:	Gas	Appearance:	Colorless gas
Color:	colorless	Physical Form:	gas
Odor:	irritating odor	Odor Threshold:	Not available
pH:	acidic in solution	Melting/Freezing Point:	-122 °C
Boiling Point:	8 °C	Flash Point:	-37 °C
Decomposition:	(Not available)	Evaporation Rate:	Not available
LEL:	4.1 %	UEL:	99 %
Vapor Pressure:	1.7 atm @ 20 °C	Vapor Density (air = 1):	3.5
Specific Gravity (water=1):	1.2	Water Solubility:	hydrolyzes, reacts
Log KOW:	(Not available)	Coeff. Water/Oil Dist:	Not available
Auto Ignition:	58 °C	Viscosity:	(Not available)
Molecular Weight:	101.01	Molecular Formula:	H2-Si-Cl2

Solvent Solubility

Soluble: benzene, carbon tetrachloride, ether

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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.

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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 LOEL 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

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.

Hazardous Waste Number(s): D001. D002. D003.

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

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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:

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

Not regulated under California Proposition 65

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

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

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Other Information

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