

Warning



SECTION 1: Identification of the hazardous chemical and of the supplier

1.1. Product identifier

Trade name : silicon tetrachloride
Name : Silicon Tetrachloride
CAS-No. : 10026-04-7

1.2. Other means of identification

Product code : ALM/SDS/147

1.3. Recommended use of the chemical and restrictions on use

Recommended use : Industrial and professional uses. Perform risk assessment prior to use.
Contact supplier for more information on uses.
Restrictions on use : Consumer use.

1.4. Supplier details

AIR LIQUIDE MALAYSIA SDN. BHD.
Lot PT 2317, No. 21, Jalan PTB 1
Kawasan Perindustrian Tangga Batu, Mukim Sungai Udang,
76400 Melaka
Malaysia
T +606-3513512

1.5. Emergency phone number

Emergency number : +606-3513512

SECTION 2: Hazards identification

2.1. Classification of the hazardous chemical

Classification according to Industry Code of Practice on chemicals classification and hazard communication (2019)

Skin corrosion or irritation, Category 2 H315
Serious eye damage or eye irritation, Category 2 H319
Specific target organ toxicity – Single exposure, Category 3, H335
Respiratory tract irritation

2.2. Label elements

Labelling according to Industry Code of Practice on chemicals classification and hazard communication (2019)

Hazard pictograms (GHS MY) :



Signal word (GHS MY) : Warning
Hazard statements (GHS MY) : H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
Precautionary statements (GHS MY) : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P264 - Wash ... thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area

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P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P321 - Specific treatment (see ... on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container to ...

2.3. Other hazards that do not result in classification

Other hazards which do not result in classification : Not classified as PBT or vPvB, The substance/mixture has no endocrine disrupting properties.

SECTION 3: Composition and information of the ingredients of the hazardous chemical

3.1. Substances

Name	Product identifier	%
Silicon Tetrachloride (Main constituent)	CAS-No.: 10026-04-7	100

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of necessary first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.

First-aid measures after skin contact : Remove contaminated clothing. Drench affected area with water for at least 15 minutes.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms/effects, acute and delayed

Most important symptoms and effects, both acute and delayed : May cause irritation to cornea (with temporary disturbance to vision). May cause irritation to skin. May cause irritation to the respiratory tract, sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing. See section 11.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment : Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Product does not burn, use fire control measures appropriate for the surrounding fire.

Unsuitable extinguishing media : Do not use extinguishing media containing water. Do not use water jet to extinguish.

5.2. Physicochemical hazards arising from the chemical

Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.

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5.3. Special protective equipment and precautions for fire fighters

- Special protective equipment for fire fighters : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. Standard EN 943-2: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Gas-tight chemical protective suits for emergency teams. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.
- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Move containers away from the fire area if this can be done without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment, and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Try to stop release.

6.3. Methods and materials for containment and cleaning up

Methods and material for containment and cleaning up : Do not use water on leaking product.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Safe handling of the gas receptacle : Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect containers from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the content of the container. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock.
- Safe use of the product : Do not use water on valves, flanges and other fittings. The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Avoid suck back of water, acid and alkalis. Do not breathe gas. Avoid release of product into work area.

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7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities

: Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.

SECTION 8: Exposure controls and personal protection

8.1. Control parameters

No additional information available

Exposure limit values for the other components

No additional information available

8.1.1 Biological monitoring

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation. Product to be handled in a closed system. Consider the use of a work permit system e.g. for maintenance activities. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available).

8.3. Individual protection measures, such as PPE

Hand protection:

Wear chemically resistant protective gloves. Standard EN 374 - Protective gloves against chemicals. Consult glove manufacturer's product information on material suitability and material thickness. The breakthrough time of the selected gloves must be greater than the intended use period. Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risks, performance level 1 or higher.

Eye protection:

Wear goggles and a face shield when transfilling or breaking transfer connections. Provide readily accessible eye wash stations and safety showers. Standard EN 166 - Personal eye-protection - specifications

Respiratory protection:

Keep self contained breathing apparatus readily available for emergency use. Consult respiratory device supplier's product information for the selection of the appropriate device. Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

Personal protective equipment symbol(s):



Thermal hazard protection

: None in addition to the above sections.

Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

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SECTION 9: Physical and chemical properties

Physical state	: Liquid
Appearance	: No data available
Colour	: Colourless.
Odour	: Pungent.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
pH	: No reliable data available.
Melting point / Freezing point	: -70°C.
Boiling point	: 57.6°C.
Flash point	: No reliable data available.
Evaporation rate	: No data available
Flammability (solid, gas)	: Non flammable.
Explosive limits	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20°C	: Not applicable.
Relative density	: Not applicable. Relative gas density: Lighter or similar to air.
Solubility	: Water: No reliable data available.
Partition coefficient n-octanol/water (Log Pow)	: Not known.
Partition coefficient n-octanol/water (Log Kow)	: No data available
Critical temperature	: 234.95 °C
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Viscosity, kinematic	: No reliable data available.
Viscosity, dynamic	: No reliable data available.
Critical pressure	: 35.9 bar
Molecular mass	: 169.9 g/mol
Oxidising properties	: No oxidising properties.

SECTION 10: Stability and reactivity

Reactivity	: No reactivity hazard other than the effects described in sub-sections below.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: None.
Conditions to avoid	: Avoid moisture in installation systems.
Incompatible materials	: For additional information on compatibility refer to ISO 11114.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion or irritation	: Causes skin irritation. pH: Not applicable for gases and gas mixtures.
Serious eye damage or eye irritation	: Causes serious eye irritation.
Respiratory sensitization	: Not classified
Skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (STOT) – single exposure	: May cause respiratory irritation.
Specific target organ toxicity (STOT) – repeated exposure	: Not classified
Aspiration hazard	: Not classified

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silicon tetrachloride (10026-04-7)	
Viscosity, kinematic	Not applicable for gases and gas mixtures.

Other information : The substance/mixture has no endocrine disrupting properties.

SECTION 12: Ecological information

12.1. Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

silicon tetrachloride (10026-04-7)	
Partition coefficient n-octanol/water (Log Pow)	Not known.

12.2. Persistence and degradability

silicon tetrachloride (10026-04-7)	
Persistence and degradability	No additional information available

12.3. Bioaccumulative potential

silicon tetrachloride (10026-04-7)	
Partition coefficient n-octanol/water (Log Pow)	Not known.
Bioaccumulative potential	No data available.

12.4. Mobility in soil

silicon tetrachloride (10026-04-7)	
Mobility in soil	No additional information available
Partition coefficient n-octanol/water (Log Pow)	Not known.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.

12.5. Other adverse effects

Ozone : Not classified
Effect on global warming : No known effects from this product.
Effect on the ozone layer : No effect on the ozone layer.
Other adverse effects : May cause pH changes in aqueous ecological systems.

SECTION 13: Disposal information

13.1. Disposal methods

Waste treatment methods : Contact supplier if guidance is required. Must not be discharged to atmosphere. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.eu> for more guidance on suitable disposal methods. Return unused product in original container to supplier.

Additional information : External treatment and disposal of waste should comply with applicable local and/or national regulations.

SECTION 14: Transportation information

14.1. UN number

UN-No.(UN RTDG) : 1818
UN-No. (IMDG) : 1818

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UN-No. (IATA) : 1818

14.2. UN proper shipping name

Proper Shipping Name (UN RTDG) : SILICON TETRACHLORIDE
Proper Shipping Name (IMDG) : SILICON TETRACHLORIDE
Proper Shipping Name (IATA) : Silicon tetrachloride

14.3. Transport hazard class(es)

UN RTDG

Transport hazard class(es) (UN RTDG) : 8
Danger labels (UN RTDG) : 8



IMDG

Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8



IATA

Transport hazard class(es) (IATA) : 8
Danger labels (IATA) : 8



14.4. Packing Group, if applicable

Packing group (UN RTDG) : II
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment, Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency, Before transporting product containers: - Ensure there is adequate ventilation, - Ensure that containers are firmly secured, - Ensure valve is closed and not leaking, - Ensure valve outlet cap nut or plug (where provided) is correctly fitted, - Ensure valve protection device (where provided) is correctly fitted.

UN RTDG

Limited quantities (UN RTDG) : 0
Excepted quantities (UN RTDG) : E0
Packing instruction (UN RTDG) : P010
Portable tank and bulk container special instructions (UN RTDG) : T10
Portable tank and bulk container special provisions (UN RTDG) : TP2, TP7, TP13

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IMDG	
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P010
Tank instructions (IMDG)	: T10
Tank special provisions (IMDG)	: TP2, TP7, TP13
EmS-No. (Fire)	: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	: S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES
Stowage category (IMDG)	: C
Stowage and handling (IMDG)	: SW2
Segregation (IMDG)	: SGG1, SG36, SG49, SG72
Properties and observations (IMDG)	: Colourless, extremely mobile liquid with a suffocating odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes.

IATA	
PCA Excepted quantities (IATA)	: E0
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: 876
CAO max net quantity (IATA)	: 30L
Special provisions (IATA)	: A1
ERG code (IATA)	: 8L

14.7. Special precautions for user

Not applicable

14.8. Hazchem or Emergency Action Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health, and environmental regulations specific for the hazardous chemical in question

silicon tetrachloride (10026-04-7)	
EHS Notification and Registration Scheme	Applicable
EHS Notification and Registration Scheme	Applicable
Environmental Quality (Chlorofluorocarbons Prohibition) Order 1993	Not applicable
Environmental Quality (Industrial Effluent) Regulations 2009	
Environmental Quality (Scheduled Wastes) Regulations 2007	
Control of Industrial Major Accident Hazards Regulations 1996	
Prohibition of Use of Substance Order 1999	
Use and Standards of Exposure of Chemical Hazardous to Health Regulations 2000	
Chemical Weapons Convention Act	
Corrosive and Explosive Substances and Offensive Weapons Act	
Dangerous Drugs Act	
Pesticides Act	
Petroleum (Safety Measures) Act	
Poisons Act 1952	
Poisons (Psychotropic Substances) Regulations 1989	

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15.2. International agreements

No additional information available

SECTION 16: Other information

Version	: 2.0
Issue date	: 4/1/2015
Revision date	: 30/10/2023
Supersedes	: 21/07/2021
Abbreviations and acronyms	: ATE - Acute Toxicity Estimate CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 EINECS - European Inventory of Existing Commercial Chemical Substances CAS# - Chemical Abstract Service number PPE - Personal Protection Equipment LC50 - Lethal Concentration to 50 % of a test population RMM - Risk Management Measures PBT - Persistent, Bioaccumulative and Toxic vPvB - Very Persistent and Very Bioaccumulative STOT- SE : Specific Target Organ Toxicity - Single Exposure CSA - Chemical Safety Assessment EN - European Standard UN - United Nations ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road IATA - International Air Transport Association IMDG code - International Maritime Dangerous Goods RID - Regulations concerning the International Carriage of Dangerous Goods by Rail WGK - Water Hazard Class STOT - RE : Specific Target Organ Toxicity - Repeated Exposure UFI : Unique Formula Identifier
Training advice	: Users of breathing apparatus must be trained.
Other information	: Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP). Key literature references and sources of data are maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at http://www.Eiga.eu .

Safety Data Sheet (SDS), Malaysia_AL

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.