# **Material Safety Data Sheet**

Version 3.4 Revision Date 11/30/2012 Print Date 04/18/2013

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1,1,2,2-Tetrachloroethane

Product Number : 185434 Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich

3050 Spruce Street SAINT LOUIS MO 63103

USA

Telephone : +1 800-325-5832 Fax : +1 800-325-5052 Emergency Phone # (For : (314) 776-6555

both supplier and

manufacturer)
Preparation Information

: Sigma-Aldrich Corporation

Product Safety - Americas Region

1-800-521-8956

#### 2. HAZARDS IDENTIFICATION

### **Emergency Overview**

### **OSHA Hazards**

Highly toxic by inhalation, Highly toxic by skin absorption, Carcinogen

#### **Target Organs**

Nerves., Liver, Blood

#### Other hazards which do not result in classification

Rapidly absorbed through skin.

### **GHS Classification**

Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 1)
Acute aquatic toxicity (Category 2)

### GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed.

H310 + H330 Fatal in contact with skin or if inhaled

H401 Toxic to aquatic life.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P280 Wear protective gloves/ protective clothing.

P284 Wear respiratory protection.

P302 + P350 IF ON SKIN: Gently wash with plenty of soap and water.
P310 Immediately call a POISON CENTER or doctor/ physician.

#### **HMIS Classification**

Health hazard: 4
Chronic Health Hazard: \*
Flammability: 0
Physical hazards: 0

**NFPA Rating** 

Health hazard: 4
Fire: 0
Reactivity Hazard: 0

#### **Potential Health Effects**

InhalationSkinMay be fatal if inhaled. May cause respiratory tract irritation.May be fatal if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation. **Ingestion** Toxic if swallowed.

# 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Acetylene tetrachloride

Formula : C<sub>2</sub>H<sub>2</sub>Cl<sub>4</sub>
Molecular Weight : 167.85 g/mol

Component	Concentration	
1,1,2,2-Tetrachloroetha	ane	
CAS-No.	79-34-5	-
EC-No.	201-197-8	
Index-No.	602-015-00-3	

# 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

# In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 5. FIREFIGHTING MEASURES

### **Conditions of flammability**

Not flammable or combustible.

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### **Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

#### **6. ACCIDENTAL RELEASE MEASURES**

#### Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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#### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

# 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis	
1,1,2,2- Tetrachloroethan e	79-34-5	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)	
Remarks	Liver damage Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption				
		TWA	1 ppm 7 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
	Skin notation				
		TWA	5 ppm 35 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
	Skin designation The value in mg/m3 is approximate.				
		TWA	1 ppm 7 mg/m3	USA. NIOSH Recommended Exposure Limits	
	Potential Occupational Carcinogen See Appendix C See Appendix A Potential for dermal absorption				

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### **Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: > 480 min

Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash protection Material: Nitrile rubber

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Minimum layer thickness: 0.4 mm Break through time: > 30 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

### **Appearance**

Form liquid, clear Colour colourless

# Safety data

pH no data available

Melting point/range: -43 °C (-45 °F) - lit.

point/freezing point

Boiling point 147 °C (297 °F) - lit.

Flash point no data available

Ignition temperature no data available

Auto-ignition no data available
temperature

l ower eveleeis

Lower explosion limit no data available Upper explosion limit no data available

Vapour pressure 10.7 hPa (8.0 mmHg) at 20.0 °C (68.0 °F)

Density 1.586 g/cm3 at 25 °C (77 °F)

Water solubility no data available

Partition coefficient: log Pow: 5

n-octanol/water

Relative vapor

no data available

density

Odour no data available
Odour Threshold no data available
Evaporation rate no data available

### 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

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### Possibility of hazardous reactions

no data available

#### Conditions to avoid

no data available

#### Materials to avoid

Strong oxidizing agents, Sodium/sodium oxides, Strong bases, Potassium, Nitrates, 2,4-dinitrophenyl disulfide

#### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas Other decomposition products - no data available

### 11. TOXICOLOGICAL INFORMATION

### **Acute toxicity**

#### Oral LD50

LD50 Oral - rat - 200.0 mg/kg

#### **Inhalation LC50**

LC50 Inhalation - mouse - 2 h - 4,500 mg/m3

#### **Dermal LD50**

#### Other information on acute toxicity

no data available

#### Skin corrosion/irritation

no data available

# Serious eye damage/eye irritation

no data available

### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

no data available

### Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (1,1,2,2-Tetrachloroethane)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a

known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

no data available

# Teratogenicity

no data available

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### Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

# Aspiration hazard

no data available

#### Potential health effects

**Inhalation** May be fatal if inhaled. May cause respiratory tract irritation.

**Ingestion** Toxic if swallowed.

**Skin** May be fatal if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation.

### Signs and Symptoms of Exposure

Headache, Nausea, Vomiting, Tremors, Incoordination., fatigue, Dizziness, Anorexia.

# Synergistic effects

no data available

### **Additional Information**

RTECS: KI8575000

# 12. ECOLOGICAL INFORMATION

### **Toxicity**

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 20 mg/l - 96.0 h

Toxicity to daphnia

Immobilization EC50 - Daphnia magna (Water flea) - 23 mg/l - 48 h

and other aquatic invertebrates

### Persistence and degradability

# Bioaccumulative potential

Bioaccumulation Lepomis macrochirus (Bluegill) - 14 d

Bioconcentration factor (BCF): 8

### Mobility in soil

no data available

### PBT and vPvB assessment

no data available

#### Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

#### 13. DISPOSAL CONSIDERATIONS

#### **Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

# 14. TRANSPORT INFORMATION

# DOT (US)

UN number: 1702 Class: 6.1 Packing group: II

Proper shipping name: 1,1,2,2-Tetrachloroethane

Reportable Quantity (RQ): 100 lbs

Marine Pollutant: No

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Poison Inhalation Hazard: No

**IMDG** 

UN number: 1702 Class: 6.1 Packing group: II EMS-No: F-A, S-A

Proper shipping name: 1,1,2,2-TETRACHLOROETHANE

Marine Pollutant: Marine pollutant

**IATA** 

UN number: 1702 Class: 6.1 Packing group: II

Proper shipping name: 1,1,2,2-Tetrachloroethane

### 15. REGULATORY INFORMATION

#### **OSHA Hazards**

Highly toxic by inhalation, Highly toxic by skin absorption, Carcinogen

# **SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

# **SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

CAS-No. Revision Date 1,1,2,2-Tetrachloroethane 79-34-5 2007-07-01

#### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

# **Massachusetts Right To Know Components**

Massachusetts Right To Know Components		
1,1,2,2-Tetrachloroethane	CAS-No. 79-34-5	Revision Date 2007-07-01
Pennsylvania Right To Know Components		
1,1,2,2-Tetrachloroethane	CAS-No. 79-34-5	Revision Date 2007-07-01
New Jersey Right To Know Components		
1,1,2,2-Tetrachloroethane	CAS-No. 79-34-5	Revision Date 2007-07-01
California Prop. 65 Components		
WARNING! This product contains a chemical known to the State of California to cause cancer.  1,1,2,2-Tetrachloroethane	CAS-No. 79-34-5	Revision Date 2007-09-28

# **16. OTHER INFORMATION**

### **Further information**

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