1,2-Dichloroethane: sc-213434

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 1,2-Dichloroethane
Product Number: sc-213434

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable liquid, Carcinogen, Harmful by ingestion., Irritant

Target Organs

Heart, Central nervous system, Liver, Kidney, Pancreas.

GHS Classification

Flammable liquids (Category 2)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Carcinogenicity (Category 1B)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces - No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311	Call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical hazards:	0

NFPA Rating

Health hazard:	3
Fire:	3
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Ethylene dichloride
Formula: C2H4Cl2
Molecular Weight: 98.96

CAS-No.	*EC-No.*	*Index-No.*	*Concentration*
1,2-Dichloroethane			
107-06-2	203-458-1	602-012-00-7	

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
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
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
Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
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
Ethylene dichloride	107-06-2	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Liver damage Nausea Not classifiable as a human carcinogen			
		TWA	1 ppm 4 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	2 ppm 8 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	50 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2
	Z37.21-1969			
		CEIL	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2
	Z37.21-1969			
		Peak	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2
	Z37.21-1969			
		TWA	1 ppm	USA. NIOSH Recommended Exposure Limits
			4 mg/m3	
	Potential Occupational Carcinogen See Appendix A			
		ST	2 ppm 8 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			

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.

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, Flame retardant antistatic protective clothing, 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

Form	liquid	pH	no data available
Melting point/range	-35 °C - lit	Boiling point	83 °C - lit
Flash point	13.0 °C - closed cup*	Autoignition temperature	413.0 °C
Lower explosion limit	6.2 %(V)	Upper explosion limit	16.2 %(V)
Density	1.256 g/mL at 25 °C - lit	Relative vapor density	no data available
Odor	no data available	Odor Threshold	no data available
Ignition temperature	413 °C at 1,013 hPa	Evaporation rate	no data available
Partition coefficient n-octanol/water	log Pow: 1.48 at 20 ºC*	Water solubilty	8.69 g/l at 20 °C* 10.3 g/l at 56 °C
Vapor pressure	33.3 hPa at 0 °C 86 hPa at 20 °C* 312 hPa at 50 °C		

*Tested according to Annex V of Directive 67/548/EEC.

10. STABILITY AND REACTIVITY
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
Vapors may form explosive mixture with air.
Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.
Materials to avoid
Strong oxidizing agents
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 - 670.0 mg/kg
Inhalation LC50 LC50 Inhalation - rat - 7 h - 1000 ppm
Remarks:
Behavioral: Coma. Cyanosis Nutritional and Gross
Metabolic: Changes in: Body temperature decrease.
Dermal LD50 LD50 Dermal - rabbit - 2,800 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation.
Other information on acute toxicity no data available
Skin corrosion/irritation
Skin - rabbit - irritating - 72 h - Draize Test
Serious eye damage/eye irritation
Eyes - rabbit - Moderate eye irritation
Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
Genotoxicity in vitro - Ames test - S. typhimurium - positive
Carcinogenicity
Carcinogenicity - rat - Oral
Tumorigenic: Carcinogenic by RTECS criteria. Gastrointestinal:Tumors.
Skin and Appendages: Other: Tumors.
This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
Possible human carcinogen

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Ethylene dichloride)
NTP:	Reasonably anticipated to be a human carcinogen (Ethylene dichloride)
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
Reproductive toxicity - rat - Inhalation
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Teratogenicity
no data available
Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause respiratory irritation.
Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available
Aspiration hazard
no data available
Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
Acts as a simple asphyxiant by displacing air, anesthetic effects, difficulty in breathing, headache, dizziness, prolonged or repeated contact with skin may cause; defatting, dermatitis, contact with eyes can cause; redness, blurred vision, provokes tears. Effects due to ingestion may include: gastrointestinal discomfort, central nervous system depression, paresthesia, drowsiness, convulsions, conjunctivitis, pulmonary edema. Effects may be delayed, irregular breathing, stomach/intestinal disorders, nausea, vomiting, increased liver enzymes, weakness, heavy or prolonged skin exposure may result in the absorption of harmful amounts of material.
Synergistic effects
no data available
Additional Information
RTECS: KI0525000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 225.00 mg/l - 96 h
	NOEC - Cyprinodon variegatus (sheepshead minnow) - 130 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	
	EC50 - Daphnia magna (Water flea) - 540.00 mg/l - 24 h
Immobilization	EC50 - Daphnia magna (Water flea) - 160 mg/l - 48 h

Persistence and degradability
Biodegradability Biotic/Aerobic
Result: < 20 % - Not readily biodegradable.
Remarks: not applicable
Bioaccumulative potential
Bioaccumulation Lepomis macrochirus (Bluegill) - 14 d
Bioconcentration factor (BCF): 2

Mobility in soil
no data available
PBT and vPvB assessment
no data available
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1184 Class: 3 (6.1) Packing group: II
Proper shipping name: Ethylene dichloride
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No
IMDG
UN number: 1184 Class: 3 (6.1) Packing group: II EMS-No: F-E, S-D
Proper shipping name: ETHYLENE DICHLORIDE
Marine pollutant: No
IATA
UN number: 1184 Class: 3 (6.1) Packing group: II
Proper shipping name: Ethylene dichloride

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Carcinogen, Harmful by ingestion., Irritant
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
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components
1,2-Dichloroethane CAS-No.: 107-06-2

Pennsylvania Right To Know Components
1,2-Dichloroethane CAS-No.: 107-06-2

New Jersey Right To Know Components
1,2-Dichloroethane CAS-No.: 107-06-2

California Prop. 65 Components
WARNING! This product contains a chemical known to the State of California to cause cancer.
1,2-Dichloroethane CAS-No.: 107-06-2

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

11/16/2012