

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

1 Identification of substance:**Product details:****Product name:** 2-Chloroethanol**Stock number:** L13553**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

2-Chloroethanol (CAS# 107-07-3): 100%

Identification number(s):**EINECS Number:** 203-459-7**Index number:** 603-028-00-7**3 Hazards identification****Hazard description:**

T+ Very toxic

Information pertaining to particular dangers for man and environment

R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	4
FIRE	2
REACTIVITY	2

Health (acute effects) = 4

Flammability = 2

Reactivity = 2

GHS label elements**Danger**

3.1/1 - Fatal if swallowed.

3.1/1 - Fatal in contact with skin.

3.1/1 - Fatal if inhaled.

**Warning**

2.6/3 - Flammable liquid and vapour.

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/ equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Wear respiratory protection.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: 2-Chloroethanol

(Contd. of page 1)

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Gently wash with plenty of soap and water.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove 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 label).

Specific treatment (see label).

Specific measures (see label).

Rinse mouth.

Remove/Take off immediately all contaminated clothing.

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO2, powder or water spray.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures**General information**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Do not induce vomiting; immediately call for medical help.

Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents** CO2, sand, extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

USA

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: 2-Chloroethanol

(Contd. of page 2)

7 Handling and storage**Handling****Information for safe handling:**

Handle under dry protective gas.
 Keep container tightly sealed.
 Store in cool, dry place in tightly closed containers.
 Ensure good ventilation at the workplace.
 Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away.
 Protect against electrostatic charges.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from water/moisture.
 Store away from oxidizing agents.

Further information about storage conditions:

Store under dry inert gas.
 This product is moisture sensitive.
 Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.
 Protect from humidity and water.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Ethylene chlorohydrin

	ppm
ACGIH TLV	1-Ceiling (skin) Not classifiable as a human carcinogen
Austria MAK	1 (skin)
Belgium	1-STEEL (skin)
Denmark TWA	1 (skin)
Finland	1-STEEL (skin)
France	1-VLE (skin)
Germany MAK	1 (skin)
Korea TLV	1-Ceiling (skin)
Netherlands MAC-TGG	1 (skin)
Norway TWA	1
Poland TWA	1 mg/m ³ ; 3 mg/m ³ -STEEL
Russia	0.5 mg/m ³ -STEEL (skin)
Sweden	1-TGV (skin)
Switzerland MAK-W	1; 5-KZG-W (skin)
United Kingdom	1-STEEL (skin)
USA PEL	5 (skin)

Components with limit values that require monitoring at the workplace:

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.
 Keep away from foodstuffs, beverages and feed.
 Remove all soiled and contaminated clothing immediately.
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.
 Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves
 Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.
 Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

(Contd. on page 4)

- USA -

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: 2-Chloroethanol

(Contd. of page 3)

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Liquid
Color:	Colorless
Odor:	Ether-like

Change in condition

Melting point/Melting range:	-89°C (-128°F)
Boiling point/Boiling range:	128°C (262°F)
Sublimation temperature / start:	Not determined

Flash point: 55°C (131°F)

Ignition temperature: 425°C (797°F)

Decomposition temperature: Not determined

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure at 20°C (68°F): 7 hPa (5 mm Hg)

Density at 20°C (68°F): 1.2 g/cm³**Solubility in / Miscibility with**

Water: Fully miscible

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:Water/moisture
Oxidizing agents**Dangerous reactions** No dangerous reactions known**Dangerous products of decomposition:**Carbon monoxide and carbon dioxide
Hydrogen chloride (HCl)**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	110 mg/kg (guinea pig)
		81 mg/kg (mouse)
		71 mg/kg (rat)
Dermal	LD50	18 mg/kg (mouse)
		293 mg/kg (rat)
		67 mg/kg (rabbit)
Inhalative	LDLo	70 mg/kg (guinea pig)
	LC50	870 mg/m ³ (guinea pig)
		385 mg/m ³ (mouse)
Irritation of skin	LCLo/2H	290 mg/m ³ (rat)
		305 ppm/2H (man)
		200 mg/24H (rabbit)
Irritation of eyes	moderate	33 mg (rabbit)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Other information (about experimental toxicology):**

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with laboratory animals.

(Contd. on page 5)

-USA-

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: 2-Chloroethanol

(Contd. of page 4)

Subacute to chronic toxicity:

Chloroethanol is a narcotic poison which may damage the nervous system, liver, spleen and lungs. Exposure may be fatal. Irritating to the skin, eyes and mucous membranes, vapor exposure may result in sleepiness, giddiness, nausea and vomiting. After a possible latent period, dyspnea, headache, stupor, cyanosis and chest pain may develop. Exposure may occur through the skin.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Liver - other changes.

Liver - changes in liver weight.

Liver - fatty liver degeneration.

Kidney, Ureter, Bladder - other changes.

Behavioral - somnolence (general depressed activity).

Behavioral - general anesthetic.

Gastrointestinal - other changes.

Gastrointestinal - changes in structure or function of endocrine pancreas.

Gastrointestinal - hypermotility, diarrhea.

Gastrointestinal - nausea or vomiting.

Lungs, Thorax, or Respiration - dyspnea.

Lungs, Thorax, or Respiration - respiratory depression

Lungs, Thorax, or Respiration - chronic pulmonary edema.

Nutritional and Gross Metabolic - body temperature decrease.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Brain and Coverings - recordings from specific areas of CNS.

Cardiac - pulse rate.

Endocrine - changes in pituitary weight.

Related to Chronic Data - death.

Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).

Blood - hemorrhage.

Blood - other changes.

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - transaminases.

Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive - Specific Developmental Abnormalities - hepatobiliary system.

Additional toxicological information:

Danger through skin absorption.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information:**General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:**

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information**DOT regulations:**

Hazard class:

6.1

Identification number:

UN1135

Packing group:

I

Poison inhalation hazard:

Yes

Proper shipping name (technical name): ETHYLENE CHLOROHYDRIN

(Contd. on page 6)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

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Reviewed on 05/15/2009

Product name: 2-Chloroethanol

(Contd. of page 5)

Label 6.1+3

Land transport ADR/RID (cross-border)



ADR/RID class: 6.1 (TF1) Toxic substances
 Danger code (Kemler): 663
 UN-Number: 1135
 Packaging group: I
 Description of goods: 1135 ETHYLENE CHLOROHYDRIN

Maritime transport IMDG:



IMDG Class: 6.1
 UN Number: 1135
 Label: 6.1+3
 Packaging group: I
 Proper shipping name: ETHYLENE CHLOROHYDRIN

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 6.1
 UN/ID Number: 1135
 Label: 6.1+3
 Proper shipping name: ETHYLENE CHLOROHYDRIN

UN "Model Regulation": UN1135, ETHYLENE CHLOROHYDRIN, 6.1 (3), I

15 Regulations

Product related hazard informations:

Hazard symbols:

T+ Very toxic

Risk phrases:

26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

Safety phrases:

7/9 Keep container tightly closed and in a well-ventilated place.

28 After contact with skin, wash immediately with plenty of soap and water

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

(Contd. on page 7)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/15/2009

Reviewed on 05/15/2009

Product name: 2-Chloroethanol

(Contd. of page 6)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

USA