

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/26/2009

Reviewed on 05/26/2009

**1 Identification of substance:****Product details:****Product name:** 1,2-Dichloroethane-d4**Stock number:** 42281**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#)

1,2-Dichloroethane-d4 (CAS# 17060-07-0): 100%

**3 Hazards identification****Hazard description:**

T Toxic  
 F Highly flammable

**Information pertaining to particular dangers for man and environment**

R 45 May cause cancer.  
 R 11 Highly flammable.  
 R 22 Also harmful if swallowed.  
 R 36/37/38 Irritating to eyes, respiratory system and skin.

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

HEALTH	2	Health (acute effects) = 2
FIRE	3	Flammability = 3
REACTIVITY	1	Reactivity = 1

**GHS label elements****Danger**

2.6/2 - Highly flammable liquid and vapour.

**Danger**

3.1/3 - Toxic if swallowed.  
 3.2/2 - Causes skin irritation.  
 3.3/2A - Causes serious eye irritation.  
 3.8/3 - May cause respiratory irritation.

**Danger**

3.6/1A - May cause cancer.

**Prevention:**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 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.

(Contd. on page 2)

-USA-

# Material Safety Data Sheet

acc. to OSHA and ANSI

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Product name: 1,2-Dichloroethane-d4

(Contd. of page 1)

Take precautionary measures against static discharge.  
 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 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.  
 Use personal protective equipment as required.

**Response:**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
 IF ON SKIN: 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.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF exposed or concerned: Get medical advice/attention.  
 Call a POISON CENTER or doctor/physician if you feel unwell.  
 Specific treatment (see label).  
 Rinse mouth.  
 If skin irritation occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice/attention.  
 Take off contaminated clothing and wash 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****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** Seek immediate medical advice.

**5 Fire fighting measures****Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

**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  
 Keep away from ignition sources

**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.

Keep away from ignition sources.

**Additional information:**

See Section 7 for information on safe handling

(Contd. on page 3)

- USA -

# Material Safety Data Sheet

## acc. to OSHA and ANSI

Printing date 05/26/2009

Reviewed on 05/26/2009

**Product name: 1,2-Dichloroethane-d4**

(Contd. of page 2)

See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

#### Handling

##### Information for safe handling:

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.  
Fumes can combine with air to form an explosive mixture.

#### Storage

**Requirements to be met by storerooms and receptacles:** Store in a cool location.

**Information about storage in one common storage facility:** Store away from oxidizing agents.

##### Further information about storage conditions:

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.

### 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:

1,2-dichloroethane

ppm

ACGIH TLV	10; Not classifiable as a human carcinogen
Austria TWA	Carcinogen
Belgium TWA	10
Finland TWA	10; 20-STEL, Carcinogen
France VME	10; C2 Carcinogen
Germany	Carcinogen
Hungary	4 mg/m3-STEL; Carcinogen
Japan OEL	10; 2B Carcinogen
Korea TLV	10; Not classifiable as a human carcinogen
Netherlands MAC-TGG	50; Carcinogen
Norway TWA	1
Poland TWA	50 mg/m3; 60 mg/m3-STEL
Russia TWA	10
Sweden NGV	1, 5-KTV, skin, Carcinogen
Switzerland MAK-W	5; Carcinogen
United Kingdom TWA	5, Skin, Carcinogen
USA PEL	50

**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

**Body protection:** Protective work clothing.

USA

(Contd. on page 4)

# Material Safety Data Sheet

## acc. to OSHA and ANSI

Printing date 05/26/2009

Reviewed on 05/26/2009

Product name: 1,2-Dichloroethane-d4

(Contd. of page 3)

### 9 Physical and chemical properties:

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Not determined
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	Not determined
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined

### 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:** 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:**

**Primary irritant effect:**

**on the skin:** Irritant to skin and mucous membranes.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

**Subacute to chronic toxicity:**

If inhaled, dichloroethane may cause pulmonary edema. It has a strong narcotic effect, causing dizziness, nausea, vomiting, stupor, cyanosis and loss of consciousness. Liver and kidney damage may also result. Skin exposure may cause dermatitis and eye contact may cause cornea damage. Chronic exposure may cause appetite loss, nausea, vomiting, epigastric distress, tremors, leucocytosis and low blood sugar.

**Additional toxicological information:**

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

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

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, even in small quantities.

Danger to drinking water if even extremely 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.

(Contd. on page 5)

USA

# Material Safety Data Sheet

## acc. to OSHA and ANSI

Printing date 05/26/2009

Reviewed on 05/26/2009

Product name: 1,2-Dichloroethane-d4

(Contd. of page 4)

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

### 14 Transport information

DOT regulations:



Hazard class: 3  
 Identification number: UN1184  
 Packing group: II  
 Proper shipping name (technical name): ETHYLENE DICHLORIDE  
 Label: 3+6.1

Land transport ADR/RID (cross-border)



ADR/RID class: 3 (FT1) Flammable liquids  
 Danger code (Kemler): 336  
 UN-Number: 1184  
 Packaging group: II  
 Description of goods: 1184 ETHYLENE DICHLORIDE

Maritime transport IMDG:



IMDG Class: 3  
 UN Number: 1184  
 Label: 3+6.1  
 Packaging group: II  
 Proper shipping name: ETHYLENE DICHLORIDE

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3  
 UN/ID Number: 1184  
 Label: 3+6.1  
 Packaging group: II  
 Proper shipping name: ETHYLENE DICHLORIDE

UN "Model Regulation": UN1184, ETHYLENE DICHLORIDE, 3 (6.1), II

### 15 Regulations

Product related hazard informations:

Hazard symbols:

T Toxic  
 F Highly flammable

Risk phrases:

45 May cause cancer.  
 11 Highly flammable.  
 22 Also harmful if swallowed.  
 36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

53 Avoid exposure - obtain special instructions before use.

(Contd. on page 6)

- USA -

# Material Safety Data Sheet

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**Product name: 1,2-Dichloroethane-d4**

(Contd. of page 5)

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

**National regulations**

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

Although this chemical may sometimes be used as a food or drug or cosmetic, our products are not approved or suitable for such use or for human consumption.

**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)

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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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