

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

1 Identification of substance:

Product details:

Product name: Benzyl chloride

Stock number: 33292

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#)

Benzyl chloride (CAS# 100-44-7), 100%

Identification number(s):

EINECS Number: 202-853-6

Index number: 602-037-00-3

3 Hazards identification

Hazard description:



T Toxic

Information pertaining to particular dangers for man and environment

R 45 May cause cancer.

R 22 Also harmful if swallowed.

R 23 Also toxic by inhalation.

R 37/38 Irritating to respiratory system and skin.

R 41 Risk of serious damage to eyes.

R 48/22 Also harmful: danger of serious damage to health by prolonged exposure if swallowed.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

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

4 First aid measures

General information

Immediately remove any clothing soiled by the product.

(Contd. on page 2)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

Product name: Benzyl chloride

(Contd. of page 1)

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 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:

Hydrogen chloride (HCl)

Carbon monoxide and carbon dioxide

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).

Use neutralizing agent.

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.

7 Handling and storage

Handling**Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

Product name: Benzyl chloride

(Contd. of page 2)

*Ensure good ventilation at the workplace.**Open and handle container with care.***Information about protection against explosions and fires:***Keep ignition sources away.***Storage****Requirements to be met by storerooms and receptacles:***No special requirements.***Information about storage in one common storage facility:***Store away from oxidizing agents.**Store away from metals.**Store away from water/moisture.***Further information about storage conditions:***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:**

benzyl chloride (CAS# 100-44-7)

ppm

ACGIH TLV	1
Belgium TWA	1
Denmark TWA	1
Finland TWA	1; 3-STEL
France TWA	1; 2-STEL (skin)
Hungary TWA	0.5-STEL (skin)
Ireland TWA	1
Netherlands TWA	1
Russia TWA	0.5-STEL
Sweden TWA	1; 2-STEL
Switzerland TWA	1; 2-STEL
USA PEL	1

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 skin.**Avoid contact with the eyes and skin.***Breathing equipment:***Use suitable respirator when high concentrations are present.***Protection of hands:** Impervious gloves

(Contd. on page 4)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

Product name: Benzyl chloride

(Contd. of page 3)

Eye protection:

Safety glasses
Tightly sealed goggles
Full face protection

Body protection: Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Liquid
Color:	Light yellow
Odor:	Pungent, makes eyes water

Change in condition

Melting point/Melting range:	-39.2°C (-39°F)
Boiling point/Boiling range:	177-181°C (351-358°F)
Sublimation temperature / start:	Not determined

Flash point: 74°C (165°F)**Ignition temperature:** 585°C (1085°F)**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

Lower:	1.1 Vol %
Upper:	14 Vol %

Vapor pressure at 20°C (68°F): 1.2 hPa (1 mm Hg)**Density at 20°C (68°F):** 1.1 g/cm³**Solubility in / Miscibility with Water:** Not miscible or difficult to mix**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
Water/moisture

Dangerous reactions No dangerous reactions known**Dangerous products of decomposition:**

Hydrogen chloride (HCl)
Carbon monoxide and carbon dioxide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	1500 mg/kg (mam)
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(Contd. on page 5)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

Product name: Benzyl chloride

(Contd. of page 4)

Inhalative	LC50	1500 mg/kg (mouse)
		1231 mg/kg (rat)
		390 mg/m ³ (mam)

Primary irritant effect:**on the skin:**

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Strong irritant with the danger of severe eye injury.

Irritating effect.

Sensitization: No sensitizing effects known.**Subacute to chronic toxicity:**

Benzyl chloride is irritating to the skin and mucous membranes. It is an experimental carcinogen. Toxic via inhalation.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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-2A: Probably carcinogenic to humans: limited human evidence; sufficient evidence in experimental animals

ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

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.

USA

(Contd. on page 6)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

Product name: Benzyl chloride

(Contd. of page 5)

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.**14 Transport information****DOT regulations:**

Hazard class: 6.1
Identification number: UN1738
Packing group: II
Proper shipping name (technical name): BENZYL CHLORIDE
Label: 6.1+8

Land transport ADR/RID (cross-border)

ADR/RID class: 6.1 (TC1) Toxic substances
Danger code (Kemler): 68
UN-Number: 1738
Packaging group: II
Description of goods: 1738 BENZYL CHLORIDE

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 1738
Label: 6.1+8
Packaging group: II
Proper shipping name: BENZYL CHLORIDE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 1738
Label: 6.1+8

(Contd. on page 7)

Material Safety Data Sheet

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Printing date 11/10/2008

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(Contd. of page 6)

Packaging group:	II
Proper shipping name:	BENZYL CHLORIDE

15 Regulations**Product related hazard informations:****Hazard symbols:**

T Toxic

Risk phrases:

- 45 May cause cancer.
- 22 Also harmful if swallowed.
- 23 Also toxic by inhalation.
- 37/38 Irritating to respiratory system and skin.
- 41 Risk of serious damage to eyes.
- 48/22 Also harmful: danger of serious damage to health by prolonged exposure if swallowed.

Safety phrases:

- 53 Avoid exposure - obtain special instructions before use.
- 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.

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

Information about limitation of use:

For use only by technically qualified individuals.
This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721. This product is being sold for research and development use only for the significant new use listed.
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.

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: Paul V. Connolly