

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 01/27/2009

Reviewed on 01/26/2009

1 Identification of substance:**Product details:****Product name:** Benzalkonium chloride**Stock number:** 41339**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#)**

Benzalkonium chloride (CAS# 63449-41-2): 100%

Identification number(s):**EINECS Number:** 264-151-6**Index number:** 612-140-00-5**3 Hazards identification****Hazard description:**

C Corrosive
 N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 21/22 Harmful in contact with skin and if swallowed.

R 34 Causes burns.

R 50 Very toxic to aquatic organisms.

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

HEALTH	2
FIRE	1
REACTIVITY	1

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

GHS label elements**Danger**

3.2/1B - Causes severe skin burns and eye damage.

**Warning**

4.1/1 - Very toxic to aquatic life.

**Warning**

3.1/4 - Harmful if swallowed.

3.1/4 - Harmful in contact with skin.

Prevention:

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

Wash thoroughly after handling.

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

Avoid release to the environment.

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

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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.

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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.
 Immediately call a POISON CENTER or doctor/physician.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Specific treatment (see label).
 Specific measures (see label).
 Rinse mouth.
 Wash contaminated clothing before reuse.
 Collect spillage.
Storage:
 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.
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
 Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
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
 Nitrogen oxides (NOx)
 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).
 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.
 Ensure good ventilation at the workplace.
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.
Further information about storage conditions:
 Keep container tightly sealed.

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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: Not required.**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.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:**

Safety glasses

Tightly sealed goggles

Full face protection

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

Form:	Low melting solid
Color:	Light yellow
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 applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

Lower:	Not determined
Upper:	Not determined

Vapor pressure: Not determined**Density:** Not determined**Solubility in / Miscibility with**

Water:	Soluble
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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 products of decomposition:**

Carbon monoxide and carbon dioxide

Nitrogen oxides

Hydrogen chloride (HCl)

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

Oral	LD50	150 mg/kg (mouse)
Dermal	LD50	1420 mg/kg (rat)

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.

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Irritating effect.

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

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

Behavioral - somnolence (general depressed activity).

Blood - hemorrhage.

Liver - liver function tests impaired.

Kidney, Ureter, Bladder - urine volume increased.

Related to Chronic Data - death.

Lungs, Thorax, or Respiration - chronic pulmonary edema.

Gastrointestinal - other changes.

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:

Danger through skin absorption.

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.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**Ecotoxicological effects:****Remark:** Very toxic for fish**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.

Also poisonous for fish and plankton in water bodies.

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

Very toxic for aquatic organisms

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:**

8

Identification number:

UN2923

Packing group:

III

Proper shipping name (technical name): CORROSIVE SOLID, TOXIC, N.O.S. (Benzalkonium chloride)**Label**

8+6.1

Land transport ADR/RID (cross-border)**ADR/RID class:**

8 (CT2) Corrosive substances

Danger code (Kemler):

86

UN-Number:

2923

Packaging group:

III

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Description of goods: 2923 CORROSIVE SOLID, TOXIC, N.O.S. (Benzalkonium chloride)

Maritime transport IMDG:

IMDG Class: 8
UN Number: 2923
Label: 8+6.1
Packaging group: III
Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (Benzalkonium chloride)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 2923
Label: 8+6.1
Packaging group: III
Proper shipping name: CORROSIVE SOLID, TOXIC, N.O.S. (Benzalkonium chloride)

UN "Model Regulation": UN2923, CORROSIVE SOLID, TOXIC, N.O.S., 8 (6.1), III

Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID

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

C Corrosive
 N Dangerous for the environment

Risk phrases:

21/22 Harmful in contact with skin and if swallowed.
 34 Causes burns.
 50 Very toxic to aquatic organisms.

Safety phrases:

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately.
 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

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: Paul V. Connolly

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
 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