

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 06/16/2009

Page 1/5
Reviewed on 06/16/2009

1 Identification of substance:

Product details:

Product name: Choline chloride

Stock number:
A15828
L06194

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-Hydroxyethyl)trimethylammonium chloride
(CAS# 67-48-1): 100%

Identification number(s):
EINECS Number: 200-655-4

3 Hazards identification

Hazard description:



Xi Irritant

Information pertaining to particular dangers for man and environment
R 36/37/38 Irritating to eyes, respiratory system and skin.

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

| | | |
|------------|---|----------------------------|
| HEALTH | 1 | Health (acute effects) = 1 |
| FIRE | 1 | Flammability = 1 |
| REACTIVITY | 1 | Reactivity = 1 |

GHS label elements



Warning

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

Prevention:
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:
IF ON SKIN: Wash with plenty of soap and water.
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.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment (see label).

If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.

Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

(contd. on page 2)
USA

Page 2/5

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

Product name: Choline chloride

(contd. of page 1)

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 eyes 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:
Dispose contaminated material as waste according to item 13.

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: No special measures required.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Do not store together with oxidizing and acidic materials.
Store away from strong bases.
Store away from water/moisture.

Further information about storage conditions:
This product is hygroscopic.
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: Not required.

(contd. on page 1)
USA

Page 3/5

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

Product name: Choline chloride

(contd. of page 2)

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
Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form: Solid
Odor: Not determined

Change in condition
Melting point/Melting range: 302-305°C (576-581°F)
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

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:
Acids
Oxidizing agents
Bases
Water/moisture

Dangerous reactions: No dangerous reactions known
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 | 3500 mg/kg (mouse) |
| | | 3400 mg/kg (rat) |

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eyes: Irritating effect.

Sensitization: No sensitizing effects known.
Other information (about experimental toxicology):
Mutagenic effects have been observed on tests with laboratory animals.

(contd. on page 4)
USA

Page 4/5

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

Product name: Choline chloride

(contd. of page 4)

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 - excitement
Behavioral - convulsions or effect on seizure threshold.
Blood - changes in spleen.
Endocrine - hyperglycemia.
Endocrine - changes in thymus weight.
Gastrointestinal - changes in structure or function of salivary glands.
Liver - changes in liver weight.
Lungs, Thorax, or Respiration - respiratory depression.
Lungs, Thorax, or Respiration - other changes.
Lungs, Thorax, or Respiration - cyanosis.
Lung, Thorax, or Respiration - changes in lung weight.
Nutritional and Gross Metabolic - weight loss or decreased weight gain.
Related to Chronic Data - death.
Sense Organs and Special Senses (Eye) - chromatocoryorrhea.
Sense Organs and Special Senses (Eye) - lacrimation.
Sense Organs and Special Senses (Eye) - corneal damage.

Additional toxicological information:
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:

General notes:
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
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 packaging:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

Not a hazardous material for transportation.

DOT regulations:
Hazard class: None

Land transport ADR/RID (cross-border):
ADR/RID class: None

Maritime transport IMDG:
IMDG Class: None

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

15 Regulations

Product related hazard informations:

Hazard symbols:
Xi Irritant

Risk phrases:
36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
37 Wear suitable gloves.

(contd. on page 4)
USA

Page 5/5

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

Product name: Choline chloride

(contd. of page 4)

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)
RID: Règlement International concernant le transport des marchandises dangereuses par chemins de fer (regulations concerning the international transport of dangerous goods by rail)
IMO: International Maritime Organization
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 Labeling of Chemicals
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
RTECS: Registry of Toxic Effects of Chemical Substances
TSCA: Toxic Substances Control Act
USA: United States of America
DOT: Department of Transportation

(contd. on page 4)
USA