

## Chemical Safety Data Sheet MSDS / SDS

## Choline chloride

Revision Date:2024-05-11 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**Product identifier**

Product name : Choline chloride  
CBnumber : CB6166667  
CAS : 67-48-1  
EINECS Number : 200-655-4  
Synonyms : choline chloride, CHOLINE CHLORIDE 60% CORN COB

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

**Classification of the substance or mixture**

Not classified.

**Label elements****Pictogram(s)**

□

Signal word : Warning

**Hazard statement(s)**

H303 May be harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

**Precautionary statement(s)**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P405 Store locked up.

#### **Prevention**

none

#### **Response**

none

#### **Storage**

none

#### **Disposal**

none

#### **Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Choline chloride
Synonyms	: choline chloride, CHOLINE CHLORIDE 60% CORN COB
CAS	: 67-48-1
EC number	: 200-655-4
MF	: C5H14ClNO
MW	: 139.62

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **If inhaled**

Fresh air, rest.

#### **Following skin contact**

Rinse and then wash skin with water and soap.

#### **Following eye contact**

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

#### **Following ingestion**

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### **Most important symptoms and effects, both acute and delayed**

no data available

## Indication of any immediate medical attention and special treatment needed

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature.

Obtain medical attention. Poisons A and B

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## SECTION 5: Firefighting measures

### Extinguishing media

To fight fires involving this chemical, you should be equipped with an air line or self-contained breathing apparatus. Extinguish with a dry chemical, carbon dioxide, foam or halon extinguisher. (NTP, 1992)

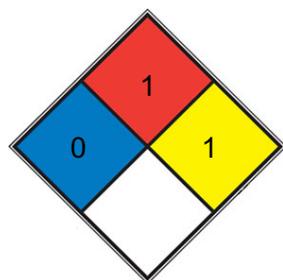
### Specific Hazards Arising from the Chemical

This chemical is relatively nonflammable. (NTP, 1992)

### Advice for firefighters

Use water spray, powder.

### NFPA 704



<input checked="" type="checkbox"/> HEALTH	0	Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials
<input checked="" type="checkbox"/> FIRE	1	Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. <a href="#">mineral oil</a> , ammonia)
<input checked="" type="checkbox"/> REACT	1	Normally stable, but can become unstable at elevated temperatures and pressures (e.g. <a href="#">propene</a> )
<input type="checkbox"/> SPEC.		
<input type="checkbox"/> HAZ.		

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting.

## Environmental precautions

Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting.

## Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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# SECTION 7: Handling and storage

## Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

## Conditions for safe storage, including any incompatibilities

Separated from strong oxidants.

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# SECTION 8: Exposure controls/personal protection

## Control parameters

### Occupational Exposure limit values

no data available

### Biological limit values

no data available

## Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## Individual protection measures

### Eye/face protection

Wear safety spectacles.

### Skin protection

Protective gloves.

### Respiratory protection

Use ventilation.

### Thermal hazards

no data available

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# SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

Physical state	Adhering Crystals
Colour	White
Odour	no data available
Melting point/freezing point	Ca. 200 °C. Atm. press.:Ca. 1 013 mBar. Remarks:First signs of an exothermal reaction were denoted at 110°C, the maximum of this reaction was at 200°C.
Boiling point or initial boiling point and boiling range	Ca. 300 °C. Atm. press.:Ca. 1 013 mBar. Remarks:First signs of an subsequent reaction were denoted at 250°C, the maximum of this reaction was at 300°C. However, the nature of the test method does not allow to differentiate between boiling and decomposition temperature.
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	60°C(lit.)
Auto-ignition temperature	330 °C. Remarks:No further details available.
Decomposition temperature	no data available
pH	5.0-7.5 (25°C, 1M in H <sub>2</sub> O)
Kinematic viscosity	dynamic viscosity (in mPa s) = 26.2. Temperature:20°C. Remarks:At 20°C, the behaviour of the test substance was found to be Newtonian over the measured shear range of 10 to 200 1/s.;dynamic viscosity (in mPa s) = 14.1. Temperature:40°C. Remarks:At 40°C, the behaviour of the test substance was found to be Newtonian over the measured shear range of 10 to 200 1/s.
Solubility	H <sub>2</sub> O: 1 M, clear, colorless
Partition coefficient n-octanol/water	Pow = 0. Temperature:25 °C. Remarks:Average of three independent determinations.;log Pow = -3.77. Temperature:25 °C. Remarks:Average of three independent determinations.
Vapour pressure	0 Pa. Temperature:25 °C. Remarks:Modified Grain Method (MPBPWIN v1.43), calculated for pure choline chloride.;2 287.2 Pa. Temperature:25 °C. Remarks:Modified Grain Method (MPBPWIN v1.43), calculated for 75% aqueous solution of choline chloride.
Density and/or relative density	1.1 g/cm <sup>3</sup> . Temperature:20 °C.
Relative vapour density	no data available
Particle characteristics	no data available

## SECTION 10: Stability and reactivity

### Reactivity

On combustion, forms toxic and corrosive fumes including hydrogen chloride. Reacts with strong oxidants.

### Chemical stability

Keep tightly closed.

### Possibility of hazardous reactions

Choline chloride is a quaternary ammonium salt. Quaternary ammonium salts often serve as catalysts in reactions. They are incompatible with many strong oxidizers and reducing agents, such as metal hydrides, alkali/active metals, and organometallics. Quaternary ammonium salts often serve as catalysts in reactions. They are incompatible with many strong oxidizers and reducing agents, such as metal hydrides,

alkali/active metals, and organometallics. Unlike the ammonium ion,  $[NH_4]^+$ , and the primary, secondary, or tertiary ammonium cations, the quaternary ammonium cations are permanently charged, independent of the pH of their solution.

#### **Conditions to avoid**

no data available

#### **Incompatible materials**

no data available

#### **Hazardous decomposition products**

When heated to decomposition it emits toxic fumes of chloride, /sulfur oxides/, and /Nitrogen oxides/.

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## **SECTION 11: Toxicological information**

#### **Acute toxicity**

- Oral: LD0 - rat -  $\geq 2\ 790$  mg/kg bw. Remarks: Given on three consecutive days, hence LD0 can be calculated as intermittent total dose to 8.37 g/kg bw.
- Inhalation: no data available
- Dermal: no data available

#### **Skin corrosion/irritation**

no data available

#### **Serious eye damage/irritation**

no data available

#### **Respiratory or skin sensitization**

no data available

#### **Germ cell mutagenicity**

no data available

#### **Carcinogenicity**

no data available

#### **Reproductive toxicity**

no data available

#### **STOT-single exposure**

no data available

#### **STOT-repeated exposure**

no data available

#### **Aspiration hazard**

A nuisance-causing concentration of airborne particles can be reached quickly when dispersed.

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## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50 - *Leuciscus idus* - > 10 000 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 500 mg/L - 48 h.

Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - > 500 mg/L - 72 h.

Toxicity to microorganisms: EC10 - *Pseudomonas putida* - 112.9 mg/L - 17 h.

### Persistence and degradability

no data available

### Bioaccumulative potential

no data available

### Mobility in soil

no data available

### Other adverse effects

no data available

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## SECTION 13: Disposal considerations

### Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

### UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Transport hazard class(es)**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Packing group, if applicable**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

### **Special precautions for user**

no data available

### **Transport in bulk according to IMO instruments**

no data available

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## SECTION 15: Regulatory information

### **Safety, health and environmental regulations specific for the product in question**

#### **European Inventory of Existing Commercial Chemical Substances (EINECS)**

Listed.

#### **EC Inventory**

Listed.

#### **United States Toxic Substances Control Act (TSCA) Inventory**

Listed.

#### **China Catalog of Hazardous chemicals 2015**

Not Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

Listed.

#### **Vietnam National Chemical Inventory**

Listed.

#### **IECSC**

Listed.

## Korea Existing Chemicals List (KECL)

Listed.

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## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.