

# SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

## CHOLINE CHLORIDE

Revision Date: 30-Sep-2015

Revision Number: 8

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product Identifier**

Product Name CHOLINE CHLORIDE  
Internal ID Code HM006900

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

**Recommended Use** Clay Stabilization Agent  
**Sector of use** SU2 - Mining, (including offshore industries)  
**Product category** PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific  
**Process categories** PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

**1.3. Details of the supplier of the safety data sheet**

Halliburton Energy Services  
Halliburton House, Howemoss Place  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

[www.halliburton.com](http://www.halliburton.com)

For further information, please contact

**E-Mail address:** [fdunexchem@halliburton.com](mailto:fdunexchem@halliburton.com)

**1.4. Emergency telephone number**

+44 8 08 189 0979 / 1-760-476-3961

Emergency telephone - §45 - (EC)1272/2008	
Europe	112
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO): + 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

**SECTION 2: Hazards Identification****2.1. Classification of the substance or mixture**

REGULATION (EC) No 1272/2008

Not classified

**2.2. Label Elements**

Not classified

**Hazard Pictograms****Signal Word**

None

**Hazard Statements**

Not Classified

**Precautionary Statements - EU (§28, 1272/2008)**

None

**Contains****Substances**

Choline chloride

**CAS Number**

67-48-1

**2.3. Other Hazards**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**SECTION 3: Composition/information on Ingredients****3.2. Mixtures**

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Choline chloride	200-655-4	67-48-1	60 - 100%	Not applicable	No data available

**For the full text of the H-phrases mentioned in this Section, see Section 16****SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin**

Wash with soap and water. Get medical attention if irritation persists.

**Ingestion**

Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**4.2. Most Important symptoms and effects, both acute and delayed**

No significant hazards expected.

**4.3. Indication of any immediate medical attention and special treatment needed****Notes to Physician**

Treat symptomatically

**SECTION 5: Firefighting Measures****5.1. Extinguishing media****Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**5.2. Special hazards arising from the substance or mixture****Special Exposure Hazards**

Not applicable.

**5.3. Advice for firefighters****Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

See Section 8 for additional information

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

**6.4. Reference to other sections**

See Section 8 and 13 for additional information.

**SECTION 7: Handling and Storage****7.1. Precautions for Safe Handling**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in a cool, dry location. Keep container closed when not in use.

**7.3. Specific End Use(s)****Exposure Scenario**

No information available

**Other Guidelines**

No information available

**SECTION 8: Exposure Controls/Personal Protection****8.1. Control parameters****Exposure Limits**

Substances	CAS Number	EU	UK	Netherlands	France
Choline chloride	67-48-1	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
Choline chloride	67-48-1	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Choline chloride	67-48-1	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Choline chloride	67-48-1	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Choline chloride	67-48-1	Not applicable	Not applicable	Not applicable	Not applicable

**Derived No Effect Level (DNEL)**

No information available.

**Worker****General Population****Predicted No Effect Concentration (PNEC)**

No information available.

**8.2. Exposure controls****Engineering Controls**

Use in a well ventilated area.

**Personal protective equipment**

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

<b>Respiratory Protection</b>	Not normally necessary.
<b>Hand Protection</b>	Impervious rubber gloves.
<b>Skin Protection</b>	Normal work coveralls.
<b>Eye Protection</b>	Wear safety glasses or goggles to protect against exposure.
<b>Other Precautions</b>	Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

<b>Physical State:</b>	Liquid	<b>Color:</b>	White
<b>Odor:</b>	Mild amine	<b>Odor Threshold:</b>	No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
<b>pH:</b>	7-9
<b>Freezing Point/Range</b>	No data available
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	No data available
<b>Flash Point</b>	No data available
<b>Flammability (solid, gas)</b>	No data available
upper flammability limit	No data available
lower flammability limit	No data available
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	1.07 - 1.091
<b>Water Solubility</b>	Soluble in water
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

### 9.2. Other information

<b>VOC Content (%)</b>	No data available
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## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

Not expected to be reactive.

### 10.2. Chemical Stability

Stable

### 10.3. Possibility of Hazardous Reactions

Will Not Occur

### 10.4. Conditions to Avoid

Avoid contact with metals such as aluminum, tin, lead, brass, bronze, copper, and zinc.

### 10.5. Incompatible Materials

Strong oxidizers.

### 10.6. Hazardous Decomposition Products

Oxides of nitrogen. Hydrogen chloride. Carbon monoxide and carbon dioxide.

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

<b>Acute Toxicity</b>	
<b>Inhalation</b>	May cause mild respiratory irritation.
<b>Eye Contact</b>	May cause mild eye irritation.
<b>Skin Contact</b>	May cause mild skin irritation.

<b>Ingestion</b>	None known.
<b>Chronic Effects/Carcinogenicity</b>	No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Choline chloride	67-48-1	3400 mg/kg (Rat) >= 2790 mg/kg (Rat) 5500 mg/kg (Rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Choline chloride	67-48-1	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Choline chloride	67-48-1	Non-irritating to the eye (Rabbit)

Substances	CAS Number	Skin Sensitization
Choline chloride	67-48-1	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Choline chloride	67-48-1	No information available

Substances	CAS Number	Mutagenic Effects
Choline chloride	67-48-1	In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Choline chloride	67-48-1	No information available.

Substances	CAS Number	Reproductive toxicity
Choline chloride	67-48-1	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Choline chloride	67-48-1	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Choline chloride	67-48-1	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Choline chloride	67-48-1	Not applicable

**SECTION 12: Ecological Information****12.1. Toxicity**  
**Ecotoxicity Effects**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Choline chloride	67-48-1	EC50(72h): > 500 mg/L (Desmodesmus subspicatus)	LC50(96h): > 10000 mg/L (Leuciscus idus)	EC50(17h): 132.8 mg/L (Pseudomonas putida)	EC50(24h): 250 mg/L (Daphnia magna) EC50(48h): 500 mg/L (Daphnia magna) NOEC(21d): 30.2 mg/L (reproduction) (Daphnia)

					magna)
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**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Choline chloride	67-48-1	Readily biodegradable (>75% @ 5d)

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Choline chloride	67-48-1	-3.77 BCF: 3.16 L/kg

**12.4. Mobility in soil**

Substances	CAS Number	Mobility
Choline chloride	67-48-1	No information available

**12.5. Results of PBT and vPvB assessment**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Choline chloride	Not PBT/vPvB

**12.6. Other adverse effects****Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

<b>SECTION 13: Disposal Considerations</b>
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**13.1. Waste treatment methods****Disposal Method**

Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging**

Follow all applicable national or local regulations.

<b>SECTION 14: Transport Information</b>
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**IMDG/IMO**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

**RID**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

**ADR**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

**IATA/ICAO**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

**14.1. UN Number:** Not restricted

**14.2. UN Proper Shipping Name:** Not restricted

**14.3. Transport Hazard Class(es):** Not applicable

**14.4. Packing Group:** Not applicable

**14.5. Environmental Hazards:** Not applicable

**14.6. Special Precautions for User:** None

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

## SECTION 15: Regulatory Information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Inventories

**EINECS Inventory** This product, and all its components, complies with EINECS

**US TSCA Inventory** All components listed on inventory or are exempt.

**Canadian DSL Inventory** All components listed on inventory or are exempt.

#### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**Germany, Water Endangering Classes (WGK)** WGK 1: Low hazard to waters.

### 15.2. Chemical Safety Assessment

No information available

## SECTION 16: Other Information

### Full text of H-Statements referred to under sections 2 and 3

None

### Key or legend to abbreviations and acronyms

bw – body weight

CAS – Chemical Abstracts Service

CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EC – European Commission

EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%

EEC – European Economic Community

ErC50 – Effective Concentration growth rate 50%

IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL0 – Lethal Loading 0%

LL50 – Lethal Loading 50%

MARPOL – International Convention for the Prevention of Pollution from Ships

mg/kg – milligram/kilogram

mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic

PC – Chemical Product category

PEL – Permissible Exposure Limit

ppm – parts per million

PROC – Process category

REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit

SU – Sector of Use category

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Revision Date:** 30-Sep-2015

**Revision Note**

SDS sections updated: 1

**This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010**

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**End of Safety Data Sheet**