Material Safety Data Sheet

2-hydroxyethyl trimethylammonium chloride

Revision Date *07-Mar-2011*

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name	**2-hydroxyethyl trimethylammonium chloride**
Synonyms	Choline Chloride aqueous solution
Use of the Substance/Preparation	Oil Drilling
Company/Undertaking Identification	**Taminco Inc.** Two Windsor Plaza, Suite 411 7540 Windsor Drive Allentown, PA 18195 (800) 223-3258
Emergency telephone number	In case of emergency call CHEMTREC 1-800-424-9300 703-527-3887 (International Calls), 02-8014-4880 (Australia local calls)

2. HAZARDS IDENTIFICATION

Appearance

Clear, Colorless liquid, slight odor

Emergency Overview

- CAUTION!
- Mild eye irritation
- Mild skin irritant
- The product contains no substances which at their given concentration, are considered to be hazardous to health

Principal Routes of Exposure

- Eye contact
- Skin contact
- Inhalation

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Choline chloride	67-48-1	75

4. FIRST AID MEASURES

Ingestion

- Do not induce vomiting
- Call a physician or Poison Control Centre immediately

Skin Contact

- Wash off with warm water and soap
- Remove/Take off immediately all contaminated clothing
- Wash contaminated clothing before re-use
- If skin irritation persists, call a physician

Eye Contact
- Rinse thoroughly with plenty of water, also under the eyelids
- If symptoms persist, call a physician

Inhalation
- Move to fresh air
- If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
- Water
- foam
- carbon dioxide (CO_2)
- dry chemical

Specific methods
- Evacuate area and fight fire from a safe distance
- Cool containers / tanks with water spray

Special protective equipment for fire-fighters
- Firefighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent)

Specific hazards
- Heating can release hazardous gases
- Do not allow evaporation to dryness
- Dust may form explosive mixture in air

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
- Wear suitable protective equipment

Environmental Precautions
- Prevent product from entering drains
- Do not flush into surface water or sanitary sewer system
- Report spills as required by local and federal regulations.

Methods for Clean-up
- Prevent further leakage or spillage if safe to do so
- Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceus earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13)

7. HANDLING AND STORAGE

Storage

Technical measures/Precautions
- Keep containers tightly closed in a dry, cool and well-ventilated place
- Protect containers from physical damage
- Store in original container

Incompatible products
- Oxidizing agents

Handling

Technical measures/Precautions
- Wear personal protective equipment
- Ensure that eyewash stations and safety showers are close to the workstation location
- Handle in accordance with good industrial hygiene and safety practice
- When using, do not eat, drink or smoke

Safe handling advice

- Avoid contact with skin, eyes and clothing
- Do not breathe vapors or spray mist
- Use only in well-ventilated areas
- Wash hands and face before breaks and immediately after handling the product

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL
Choline chloride	Not listed	None Established

Respiratory Protection

- In the case of dust or aerosol formation use respirator with an approved filter
- The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace
- Handle in accordance with good industrial hygiene and safety practice

Engineering measures

- Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Eye Protection

- Safety glasses with side-shields

Hand protection

- Rubber gloves
- Impervious gloves
- Request information on glove permeation properties from the glove supplier

Skin Protection

- Wear suitable protective equipment
- Choose body protection according to the amount and concentration of the dangerous substance at the work place

Other protective equipment

- Ensure that eyewash stations and safety showers are close to the workstation location

Environmental exposure controls

- Prevent product from entering drains
- Do not contaminate surface water

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State Liquid
Color Clear
Odor percept

Important Health Safety and Environmental Information

Boiling Point/Range No data available

Flash Point No data available

Viscosity 33,30 mPas @ 20°C
Vapor Pressure 10 hPa @ 20 °C
Vapor Density No information available
Relative density No information available

Partition Coefficient (n-octanol/water)	(75 % solution), log Pow -3,77
pH	5 - 8 (75% solution)
Water solubility	Miscible
Oxidizing Properties	Not applicable
Evaporation Rate	Not applicable
Melting Point/Range	- 10°C
Density	1,10 g/mL (20 °C)
Flammability	no data available
Autoignition Temperature	No data available

10. STABILITY AND REACTIVITY

Stability
- Stable

Conditions to Avoid
- Heating can release hazardous gases

Hazardous Decomposition Products
- Carbon oxides
- nitrogen oxides (NOx)
- acid chlorides

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Eye Contact May cause slight irritation

Skin Contact Substance may cause slight skin irritation

Inhalation Health injuries are not known or expected under normal use

Ingestion Health injuries are not known or expected under normal use

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	IARC	ACGIH	OSHA	NTP
Choline chloride	Not Listed	Not Listed	Not Listed	Not Listed

Aggravated Medical Conditions None known.

Product Information

Caution - substance not yet tested completely

LD50/oral/rat =	3400 mg/kg
LC50 Inhalation	An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration
Eye irritation	No eye irritation rabbits
Skin irritation	Non-irritating to the skin rabbits
Sensitization	No information available
Mutagenic Effects	Did not show mutagenic effects in animal experiments

Reproductive toxicity	In animal testing, risk of impaired fertility was shown only after administration of very high doses of this substance
Carcinogenic effects	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

LC50/96h/goldfish =	> 1,000 mg/l(75% solution)
EC50/48h/daphnia =	> 500 mg/l
EC50/72h/algae =	> 500 mg/l
Toxicity to bacteria	IC50 : 133 mg/l

Mobility

No information available

Persistence and Degradability

According to the results of tests of biodegradability this product is considered as being readily biodegradable

Bioaccumulative Potential

minimum

13. DISPOSAL CONSIDERATIONS

Waste disposal methods	Dispose of in accordance with local regulations
Contaminated Packaging	Empty containers should be taken for local recycling, recovery or waste disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT	Not regulated
Reportable Quantity (RQ)	None
Marine Pollutant	No
IMDG/IMO	Not regulated
Marine Pollutant	No
IATA	Not regulated

15. REGULATORY INFORMATION

International Inventories

NOTE: X = Listed

Chemical Name	TSCA	EINECS	DSL	ENCS	MITI	AICS	PICCS	IECSC	KECL	NZIoC
Choline chloride	X	200-655-4	X	(2)-341 (9)-1994	(2)-341	X	X	X	KE-20909	X

OSHA HAZARD CLASSIFICATION: Not Hazardous

SARA 311/312 Hazardous Categorization
Not Hazardous

SARA TITLE III SECTION 313 INFORMATION:
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

NOTE: X = Listed

CERCLA Hazardous Substances
This product does not contain any RQs or TPQs under this regulation.

State Right-to-Know

NOTE: X = Listed

Chemical Name	PA	NJ	MA
Choline chloride 67-48-1	-	-	-

California Proposition 65 This product does not contain any Proposition 65 chemicals.

WHMIS Hazard Class Non-controlled

Canadian Environmental Protection Act This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR

16. OTHER INFORMATION

HMIS	**Health** 1	**Flammability** 0	**Physical Hazard** 0
NFPA	**Health** 1	**Fire** 0	**Instability** 0

Legend: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Literary Reference -IUCLID CD-ROM, 2000 -TOMES on line

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End of Safety Data Sheet