

**1. PRODUCT AND COMPANY IDENTIFICATION**
**1.1 Product identifiers**

Product name	Choline chloride
Other names	(2-Hydroxyethyl)trimethylammonium chloride
CAS-No.	67-48-1

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

Identified uses	For use as an animal feed nutrient.
Uses not recommended	Not for human consumption.

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

<b>Supplier</b>	Pestell Nutrition
<b>Address</b>	141 Hamilton Rd New Hamburg, Ontario Canada, N3A 2H1
<b>Phone</b>	519-662-2877
<b>Email</b>	qa@pestell.com
<b>Emergency telephone number (24 hr)</b>	Canada: CANUTEC 1 613-996-6666 US: CHEMTREC 1 703-527-3887

**2. HAZARDS IDENTIFICATION**
**2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

**2.2 GHS Label elements, including precautionary statements**

Not a hazardous substance or mixture.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS** - dust from this product may become combustible if allowed to accumulate in large quantities.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**
**3.1 Mixture**

Synonyms	:	(2-Hydroxyethyl)trimethylammonium chloride
Formula	:	C <sub>5</sub> H <sub>14</sub> Cl NO
Molecular weight	:	139.62 g/mol

Component	CAS-No.	EC-No.	Concentration (w/w)
Choline chloride	67-48-1	200-655-4	60-70%
Carrier (natural vegetal)	-	-	30-40%

No components need to be disclosed according to the applicable regulations.

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## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

In high concentrations, dust from this product may become combustible.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Avoid breathing dust. For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

OSHA nuisance dust      PEL: 5 mg/m<sup>3</sup> respirable fraction      15 mg/m<sup>3</sup> total

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

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| a) Appearance                              | Form: ground matter<br>Colour: brown     |
| b) Odour                                   | slight grain odor                        |
| c) Odour Threshold                         | No data available                        |
| d) pH                                      | 4.5-7.5 choline chloride in 25% solution |
| e) Melting point/freezing point            | No data available                        |
| f) Initial boiling point and boiling range | No data available                        |
| g) Flash point                             | No data available                        |

h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	For choline chloride dust, lower limit is 60 g/m <sup>3</sup>
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Relative density	No data available
n) Water solubility	Choline chloride is soluble in water, vegetable carrier is not.
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	Of choline chloride: 400 °C (752 °F)
q) Decomposition temperature	227 °C (477 °F) Choline chloride decomposes
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

## 9.2 Other safety information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Sources of ignition, humid environments, incompatible materials.

### 10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Hydrogen chloride gas

Other decomposition products - No data available

In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 3,500 mg/kg

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 20 h

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

Ames test

Salmonella typhimurium

Result: negative

**Carcinogenicity**

IARC: Not listed

ACGIH: Not listed

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: KH2975000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish	static test LC50 - Leuciscus idus (Golden orfe) - > 10,000 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 500 mg/l - 48 h
Toxicity to algae	static test EC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 72 h
Toxicity to bacteria	EC50 - Pseudomonas putida - 132.8 mg/l - 17 h (DIN 38 412 Part 8)

**12.2 Persistence and degradability**

Biodegradability      aerobic - Exposure time 5 d  
Result: 75 % - Readily biodegradable.

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

No data available

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**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**TDG (Canada)**

Not dangerous goods

**DOT (US)**

Not dangerous goods

**IATA**

Not dangerous goods

**IMDG**

Not dangerous goods

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**15. REGULATORY INFORMATION**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

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**16. OTHER INFORMATION**

Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pestell Nutrition and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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