

## Material Safety Data Sheet

### CHOLINE CHLORIDE 60% CORN COB

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

Commercial product name: Choline Chloride 60% Corn Cob  
Description: Feed additive  
Manufacturer: Shandong Yinfeng Biological Technology Co., Ltd.  
Zouping County, 256219 Shandong – China  
Emergency telephone number: +86 533 2340908

#### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization: Choline Chloride, min. 60%, carrier corn cob, contains no hazardous components  
Synonyms: Choline Hydrochloride; Hepacholine; (2-Hydroxyethyl) Trymethyl-Ammonium Chloride  
CAS number: 67-48-1 (choline chloride)  
EINECS number: 200-655-4 (choline chloride)

#### 3. HAZARDS IDENTIFICATION

Continuous breathing of dust, like any dust, may cause allergic type reactions in sensitive persons. Due to the hygroscopic nature of the dry product, avoid prolonged contacts with skin, eyes and mucous membranes.

#### 4. FIRST-AID MEASURES

Inhalation: Remove from exposure.  
Skin contact: Rinse with water.  
Eye contact: Rinse with water.  
Ingestion: Rinse mouth and throat with water.

#### 5. FIRE-FIGHTING MEASURES

Suitable fire extinguishing media: Water, CO<sub>2</sub>, foam, powder extinguisher, sand  
Unusual hazards: Not known  
Special exposure hazards: Burning produces irritant fumes.  
Special protective equipment for firefighters: Respiratory protector with gas filter or breathing apparatus recommended.

#### 6. ACCIDENTAL RELEASE MEASURES

Take up preferably by mechanical means. Wash with lots of water.

#### 7. HANDLING AND STORAGE

Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Store in a dry and cool place in an unopened package.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Recommended personal protective equipment:



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Respiratory protection:	Respiratory protector approved for this type of dust
Hand protection:	Impermeable gloves
Eye protection:	Protecting glasses or eye shield

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light yellow brown granules or powder
Odour:	Slight amine odour
PH:	6.0 – 8.0

### 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Conditions to avoid:	Exposure to air or moisture over prolonged periods.
Materials to avoid:	Strong oxidizing agents.
Hazardous decomposition products:	Chloride/Hydrochloric acid, Nitrogen oxides (NOx)/ammonia/CN.

### 11. TOXICOLOGICAL INFORMATION

Components Choline Chloride RTECS Number: KH2975000; LD50 in rats(g/kg): 0.400 I.P; 6.64 orally( Hartung, Cornish)

Chronic toxicity: Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.

Local effects: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Specific effects: May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

### 12. ECOLOGICAL INFORMATION

The product is believed not to be dangerous to the environment with respect to mobility, persistency and degradability, bioaccumulative potential. Aquatic toxicity may cause long-term adverse effects in the aquatic environment.

### 13. DISPOSAL CONSIDERATIONS

Waste disposal must be in accordance with appropriate local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Do not re-use empty containers.

### 14. TRANSPORT INFORMATION

HAS NOT BEEN LISTED BY IMO AS A DANGEROUS MATERIAL THE DETAIL OR IMCO IS NOT AVAILABLE

Sea	Applicable
Road/rail	Applicable
Air	Applicable

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### 15. REGULATORY INFORMATION

The product is not subject to mandatory labelling.

### 16. DUST EXPLOSION PROPERTIES INFORMATION

Minimum ignition energy (MIE)

Minimal ignition temperature (MIT)

Glowing temperature (GT)

Lower and upper explosion limit (LEL/UEL)

Maximum explosion pressure (Pmax)

Maximum value of the maximum pressure rise from different dust concentrations ( $dP/dt_{max}$ )

The speed of the explosive reaction. In combination with the MIE this figure determines more than any other the differences in the magnitude of hazard among various powders.

Maximum pressure rise speed (KSt)

Volume-independent dust explosion constant

Explosion class (St)

Categories, into which dusts are classified on the basis of their KSt values

- St 1 > 0 to 200 (bar.m/s)

- St 2 > 200 to 300 (bar.m/s)

- St 3 > 300 (bar.m/s)

### 17. OTHER INFORMATION

The information contained in this Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this product. The information in this sheet does not represent analytical specifications, for which please refer to our technical data sheet.

The format of this Material Safety Data Sheet follows the guidelines specified in Commission Directive 91/155/EEC (as amended).

