



# 济南久安酯类化工有限公司

JINAN JIUAN ESTER CHEMICAL CO., LTD  
CHEMICAL INDUSTRIAL PARK, ZHANGQIU CITY, SHANDONG PROVINCE, CHINA

SDS-021E-2016

## SAFETY DATA SHEET

### Betaine Anhydrous

#### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product identifier</b>	Betaine Anhydrous
<b>Chemical name</b>	Trimethylammonioacetate; Glycine betaine
<b>Company name</b>	Jinan Jiuan Ester Chemical Co., Ltd.
<b>Address</b>	Chemical Industrial Park, Zhangqiu City, Shandong Province, China
<b>Telephone</b>	0086-531-82687186
<b>Website</b>	www.pengbobio.com
<b>E-mail</b>	sales@pengbobio.com

#### SECTION 2. HAZARDS IDENTIFICATION

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>OSHA hazard(s)</b>	Not classified.
<b>Label elements</b>	
<b>Hazard symbol</b>	No symbol.
<b>Signal word</b>	Not available.
<b>Hazard statement</b>	Not available.
<b>Precautionary statement</b>	
<b>Prevention</b>	Not available
<b>Response</b>	Not available
<b>Storage</b>	Not available
<b>Disposal</b>	Not available.
<b>Hazard(s) not otherwise</b>	Not classified.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

##### Non-hazardous components

##### BetaineAnhydrous

Chemical name	Molecular formula	M.W.	EINECS No.	CAS No.	Weight percent
Betaine	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub>	117.15	203-490-6	107-43-7	98-100

**Betaine Monohydrate**

Chemical name	Molecular formula	M.W.	EINECS No.	CAS No.	Weight percent
Betaine Monohydrate	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub> • H <sub>2</sub> O	135.16	209-684-7	17146-86-0	98-100

**SECTION 4. FIRST AID MEASURES****Inhalation**

If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.  
Call a physician if symptoms develop or persist.

**Skin contact**

Rinse skin with water/shower. Get medical attention if irritation develops and persists

**Eye contact**

Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**

Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

**Most important symptoms /effects, acute and delayed**

Gastrointestinal disturbances.

**Indication of immediate medical attention and special treatment needed**

Treat symptomatically.

**General information**

Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

**SECTION 5. FIREFIGHTING MEASURES**

**Suitable extinguishing media** Use fire-extinguishing media appropriate for surrounding materials. Water. Foam. Dry chemical or CO<sub>2</sub>.

**Unsuitable extinguishing media** None known.

**Specific hazards arising from the chemical** No unusual fire or explosion hazards noted

**Special protective equipment and precautions for firefighters** Wear suitable protective equipment.

**Fire-fighting equipment/instructions** Use water spray to cool unopened containers. As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of dust from the spilled material. Wear appropriate personal protective equipment.
<b>Methods and materials for containment and cleaning up</b>	Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid the generation of dusts during clean-up. For waste disposal, see section 13 of the MSDS. Clean surface thoroughly to remove residual contamination.

## SECTION 7. HANDLING AND STORAGE

<b>Technical measures:</b>	Handle preventing formation of airborne dust. Wearing protective equipment such as dust mask and protective glasses is recommended because this substance may cause some irritation by inhalation. Cautions of the deteriorations to depend on light,
<b>Precautions for safe handling</b>	Handle it under local exhaust ventilation or in the place with a whole exhaust ventilation system.
<b>Conditions for safe storage, including any incompatibilities</b>	Store in a cool and dark place avoiding high temperature, humidity and direct sun-light because of its hygroscopic property.
<b>Packing:</b>	Storing in a plastic or paper container or bag, etc and sealing it is preferable to avoid moistening.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Engineering controls:</b>	Handle with caution not to cause dust especially in a room. Use local exhaust ventilation depending on the situation. It is preferable to install a hand and eye washer near the handling place and show its place clearly.
<b>Appropriate engineering controls</b>	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure.
<b>Respiratory protection</b>	In case of insufficient ventilation: Effective dust mask.
<b>Eye/face protection</b>	Safety glasses with side-shields.
<b>Hand protection</b>	Protective gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing, gloves and eye/face protection
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	White crystalline powder.
<b>Physical state</b>	Solid.
<b>Odour</b>	Odorless or weak particular odor.
<b>pH</b>	5.0-7.0 (10% solution in water)
<b>Melting point/freezing point</b>	293 °C
<b>Boiling Point/Range</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flash point</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.

<b>Vapor pressure</b>	Not applicable.
<b>Viscosity</b>	Not applicable.
<b>Solubility in water</b>	160g/100g (20°C)
<b>Solubility (other)</b>	Ethyl alcohol; 8.7g/100g (20°C)
<b>Decomposition temperature</b>	Not applicable.

## SECTION 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	No reactivity hazards known.
<b>Chemical stability</b>	Chemically stable. Dangerous reaction will not occur by air, light or humidity..
<b>Conditions to avoid</b>	Hygroscopic; protect from moisture.
<b>Materials to avoid</b>	Strong bases, strong oxidizing agents.
<b>Hazardous decomposition products</b>	Risk for formation of trimethylamine in hot, strongly alkaline solution.

## SECTION 11. TOXICOLOGICAL INFORMATION

<b>Ingestion</b>	Due to lack of data the classification is not possible.
<b>Acute toxicity:</b>	LD50 Intravenous - mouse - 830 mg/kg LD50 Oral - rat - 11179 mg/kg
<b>Inhalation</b>	Due to lack of data the classification is not possible.
<b>Skin contact</b>	Due to lack of data the classification is not possible.
<b>Eye contact</b>	Due to lack of data the classification is not possible.
<b>Mutagenicity Data:</b>	Betaine has shown no genotoxic effects in metaphase analysis of human lymphocytes, bacterial reverse mutation assay, and mouse micronucleus test.

## SECTION 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Algae: EC50/72h/algae 1199 mg/l(Desmodesmus subspicatus) Daphnia: EC50/48hr/daphnia 4335 mg/L COD <sub>Cr</sub> : 14 mg/g ; BOD <sub>5</sub> : 720 mg/g
<b>Persistence and degradability</b>	Readily biodegradable, according to appropriate OECD test. Biological degradability (28d):88% (Betaine)
<b>Bioaccumulative potential</b>	Bioaccumulation is unlikely.
<b>Mobility in soil</b>	The product is water soluble, and may spread in water systems..

## SECTION 13. DISPOSAL CONSIDERATIONS

<b>Disposal instructions</b>	Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.
<b>Local disposal regulations</b>	Not available.
<b>Hazardous waste code</b>	Not available.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see:Disposal instructions).

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## SECTION 14. TRANSPORTATION INFORMATION

Not dangerous goods in the meaning of ADR/RID, ADNR, IMDG-Code, ICAO/IATA-DGR.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** No information available.

## SECTION 15. REGULATORY INFORMATION

**US federal regulations** CERCLA/SARA Hazardous Substances - Not applicable.  
All components are on the U.S. EPA TSCA Inventory List.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous chemical** No

### Other federal regulations

**Safe Drinking Water Act (SDWA)** Not regulated.

**Food and Drug Administration (FDA)** Not regulated.

**US state regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## SECTION 16. OTHER INFORMATION

**References:** Not available

**Other Special Considerations:** Not available

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Jinan Juan Ester Chemical Co., Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Jinan Juan Ester Chemical Co., Ltd. has been advised of the possibility of such damages.

End of Safety Data Sheet  
JINAN JUAN ESTER CHEMICAL CO., LTD

