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-0412-2016

MATERIAL SAFETY DATA SHEET

Pyruvic acid

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier	Pyruvic acid
Chemical name	2-oxopropanoic acid; α -ketopropionic acid; acetylformic acid
Company name	Jinan Jiuan Ester Chemical Co., Ltd.
Address	Chemical Industrial Park, Zhangqiu City, Shandong Province, China
Telephone	0086-531-82687186
Website	www.pengbobio.com
E-mail	sales@pengbobio.com

SECTION 2. HAZARDS IDENTIFICATION

Physical hazards	Flammable liquids Category 4
Health hazards	Skin corrosion/irritationHealth Category 1B Serious eye damage/eye irritation Category 1
OSHA hazard(s)	Not classified.
Label elements	
Hazard symbol	
Signal word	Danger.
Hazard statement	Combustible liquid. Causes severe skin burns and eye damage. Causes serious eye damage.
Precautionary statement	
Prevention	Keep away from flames and hot surfaces-No smoking. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection
Response	Immediately call a poison center/doctor. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise	Not classified.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Pyruvic acid

Chemical name	Molecular formula	M.W.	EINECS No.	CAS No.	Weight percent
Pyruvic acid	$C_3H_4O_3$	88.06	204-824-3	127-17-3	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 importantsymptoms /effects, acute anddelayed	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 guidancefrom an occupational health physician or other licensed health-care provider familiar withworkplace chemical exposures. In the United States, the national poison control center phonenumber is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing isdifficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic)reactions must receive immediate medical attention.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO_2).
Unsuitable extinguishingmedia	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising fromthe chemical	By heating and fire, harmful vapors/gases may be formed.
Special protective equipment and precautions for firefighters	Use protective equipment appropriate for surrounding materials.
Fire-fighting equipment/instructions	As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing. Use water spray to cool unopened containers

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions,protective equipment andemergency procedures	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of vapors. Wear appropriate personal protective equipment.
Methods and materials for containment and cleaning up	Remove sources of ignition. Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the SDS. Clean surface thoroughly to remove residual contamination. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

SECTION 7. HANDLING AND STORAGE

Technical measures:	Handle preventing formation of airborne dust. Wearing protectiveequipment such as dust mask and protective glasses isrecommended because this substance may cause some irritation byinhalation. Cautions of the deteriorations to depend on light,
Precautions for safe handling	Handle it under local exhaust ventilation or in the place with a whole exhaust ventilation system.
Conditions for safe storage, including any incompatibilities	Store in a cool and dark place avoiding high temperature
Packing:	Storing in a plastic container or bag, etc and sealing.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls:	Handle with caution not to cause dust especially in a room. Uselocal exhaust ventilation depending on the situation. It is preferableto install a hand and eye washer near the handling place and showits place clearly.
Appropriate engineering controls	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Local exhaust ventilation such as a laboratory fume hood or other vented enclosure is recommended, particularly for grinding, crushing, weighing, or other dust-generating procedures. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials. Local exhaust ventilation such as a laboratory fume hood or other vented enclosure is recommended, particularly for aerosol-generating procedures
Respiratory protection	Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place.
Eye/face protection	Safety glasses with side-shields.
Hand protection	Protective gloves.
Skin and body protection	Wear suitable protective clothing, gloves and eye/face protection

General hygieneconsiderations	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Slightly yellow liquid.
Physical state	Liquid.
Odour	Sour or pungent odor.
pH	1.0-2.0（10% ）
Melting point/freezing point	53.24℉ (11.8℃)
Boiling Point/Range	329 ℉(165 ℃) (at 760 mm Hg).
Evaporation rate	Not available.
Flash point	179.6 ℉(82.0 ℃) Closed Cup .
Flammability (solid, gas)	Not applicable.
Vapor pressure	1.29 mm Hg at 25 °.
Viscosity	Not applicable.
Solubility in water	Miscible
Solubility (other)	Ethyl alcohol
Auto-ignition temperature	581 ℉(305 ℃)
Decomposition temperature	Not applicable.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	No reactivity hazards known.
Chemical stability	Risk of ignition.
Conditions to avoid	Heat. Flames. Sparks. Avoid temperatures exceeding the flash point.
Materials to avoid	Bases. Oxidizing agents. Reducing agents.
Hazardous decomposition products	Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Ingestion	Causes digestive tract burn.
Acute toxicity:	LD50 Intravenous - mouse - 3533 mg/kg
Inhalation	Due to lack of data the classification is not possible.
Skin contact	Causes severe skin burns.
Eye contact	Causes severe eye burns. Causes serious eye damage
Symptoms related to the physical, chemical, and toxicological characteristic	s Burning or tingling sensations. Headache. Coughing. Wheezing. Shortness of breath. Nausea. Vomiting

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	No ecotoxicity data noted for the ingredient(s).
Persistence and degradability	No data is available on the degradability of this product
Bioaccumulative potential	Not available.

Mobility in soil	Not available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal instructions	Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of theuser of the product to determine, at the time of disposal, whether the product meets RCRA criteriafor hazardous waste.
Local disposal regulations	Not available.
Hazardous waste code	Notregulated.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain someproduct 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 isemptied.

SECTION 14. TRANSPORTATION INFORMATION

DOT

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (Pyruvic acid)
Transport hazard class(es)	
Class or Division	8 Corrosive materia
Packing group	II

IATA

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (Pyruvic acid)
Transport hazard class(es)	
Class or Division	8 Corrosive materia
Packing group	II
Passenger and cargo aircraf	Allowed
Cargo aircraft only	Allowed
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not 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 - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No
SARA 311/312 Hazardoushemical	Yes
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 Jiuan 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 Jiuan Ester Chemical Co., Ltd. has been advised of the possibility of such damages.

End of Safety Data Sheet

JINAN JIUAN ESTER CHEMICAL CO., LTD