Safety Data Sheet

For Compliance with OSHA 29 CFR 1910.1200 and ANSI Z400.1-1998

Section 1: Identification

Product Name Pyruvic Acid (Liquid)
Commercial Name Not available.
Product Use Manufacture of substances
Restrictions On Use Not available.

Product Code 50-3374

Company
PCCA
9901 South Wilcrest
Houston, TX 77099
Phone: 1-800-331-2498
Fax: 1-800-874-5760

In case of emergency contact:
CHEMTREC (24hr) 1-800-424-9300

Section 2: Hazard(s) Identification

OSHA Haz Com: CFR 1910.1200 Emergency Overview OSHA Hazards - Combustible Liquid, Corrosive GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) Flammable liquids (Category 4) Skin corrosion (Category 1B) Serious eye damage (Category 1) HMIS Classification Health hazard 2 Flammability 2 Physical hazards 2 NFPA Rating Health hazard 2 Fire 2 Reactivity Hazard 0

Signal Word DANGER

Hazard Statement(s) Combustible liquid. Causes severe skin burns and eye damage.

Pictogram(s) or Symbol(s)

Precautionary Statement(s):

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wash skin thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/ face protection

Response IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Specific treatment (see supplemental first aid instructions on this label). Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage Store in a well-ventilated place. Keep cool. Store locked up.

Disposal Dispose of contents/ container to an approved waste disposal plant.

Section 3: Composition/Information on Ingredients

Substance/Mixture Substance
Components 1) Pyruvic acid
% By Weight 100
CAS# 127-17-3
Molecular Weight 88.06 g/mole
Chemical Formula C3H4O3
Synonym(s) 2-Ketopropionic Acid, 2-Oxopropanoic acid

Mixtures

Name	CAS#	% by Weight	TLV/PEL	LC50/LD50
1) Pyruvic acid	127-17-3	100	Not Available.	Not Available.

Section 4: First-Aid Measures

Inhalation Immediately call a poison center or doctor. Effects of exposure (inhalation) to substance may be delayed. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the materials involved and take precautions to protect themselves.

Skin Contact For severe burns, immediate medical attention is required. Immediately call a poison center or doctor. Remove and wash contaminated clothing before re-use. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Eye Contact IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Eye contact with vapors or substance may cause severe injury, burns or death. Call emergency medical service. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to subance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Ingestion Do not induce vomiting without medical advice. Call a physician or Poison Control Center immediately. Do not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Loosen tight clothing such as a collor, tie, belt or waistband. If a person vomits place them in the recorvery position so that vomit will not reenter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Symptoms/Effects

Acute Not available.

Delayed Not available.

Immediate Medical Attention

WARNING: It might be hazardous to the person providing aid to give mouth-to-mouth respiration, because the inhaled material is corrosive. For severe burns, immediate medical attention is required. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the materials(s) involved and take precautions to protect themselves.

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media

Dry chemical, CO2, or water spray. Consult with local fire authorities before attempting large scale fire fighting operations.

Unsuitable Extinguishing Media

Not available.

Products of Combustion

Not flammable or combustible.

Firefighters Special Equipment and Precautions

Wear self contained breathing apparatus for fire fighting if necessary. Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection. Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient. Do not use straight streams. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Move containers from fire area if you can do it without risk.

Section 6: Accidental Release Measures

Personal precuations: Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Use spark-proof tools and explosion-proof equipment. Remove all sources of ignition. Do not touch damaged containers or spilled material unless wearing appropriate clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Methods and materials for container and cleaning up: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Stop leak if without risk. Ventilate the area. Absorb with an inert material and put the spilled material in an appropiarte waste disposal container. Use clean non-spraking tools to collect absorbed material. Personal protective equipment: Wear eye protection (splash goggles) and face protection (full length face shield). Lab coat. Vapor respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile). Emergency procedures: Isolate area until gas has dispersed. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, baements or confined areas; dike if needed. Environmental precautions: Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements or confined areas; dike if needed.

Section 7: Handling and Storage

Precautions for safe handling: Do NOT breathe gas, fumes, vapor or spray. Manipulate under an adequate fume hood. Avoid contact with skin and eyes. Keep away from heat and sources of ignition. Use explosion-proof equipment. Use only non-sparking hand tool when handling this product. Ground all equipment containing material. Take measures to prevent build up of elctrostatic charge. May corrode metallic surfaces. Good general ventilataion should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink or smoke. Keep away from sources of ignition. Conditions for safe storage: Keep away from sources of ignition. Store and use away from heat, sparks, open flames, or any other ignition source. Store in a corrosive resistant container with a resistant inner liner. Keep containers tightly closed in a cool, well-ventilated place. Store locked up. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods. Store under inert gas (e.g. Argon). Store in refrigerator. Storage incompatibles: Bases, Combustible substances, Store away from oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Exposure Limits	Contains no substances with occupationsl exposure limit values.
Engineering Controls	Not available.
Personal Protection	Respiratory protection: For nuisance exposures use type P95(US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respriator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Hand 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. Eye protection: Safety glasses with side-shields conforming to EN166. Use equipment for eye proection tested and approved under appopriate government standards such as NIOSH (US) or EN 166 (EU). Splash goggles. Skin and body protection: Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Lab coat. Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9: Physical and Chemical Properties

Appearance	Liquid. (Clear) Light yellow to amber liquid.
Odor	Sour, Acetic.
Odor Threshold	Not available

Melting Point	11.8°C (55°F)	**pH**	Not available
Freezing Point	Not available	**Vapor Pressure**	Not available
Boiling Point/Range	165°C (329°F)	**Vapor Density**	Not available
Decomposition temperature	Not available	**Viscosity**	Not available.
Partition Coefficient: n-octanol/water	Not available	**Evaporation Rate**	Not available
Flash Point	Closed cup181	**Autoignition temperature**	Not available
Flammability	Not available	**Flammability or Explosive Limits:**	
		Lower	Not available
		Upper	Not available

Solubility(ies)	Soluble
Other	Density @25 °C 1.260

Section 10: Stability and Reactivity

Reactivity	UZ0829800
Chemical Stability	Air sensitive, heat sensitive, light sensitive, moisture sensitive.
Hazardous Polymerization	In use, may form flammable/explosive vapor-air mixture.
Conditions to Avoid	Air sensitive. Exposure to air. Exposure to light. Exposure to moisture. Heat sensitive. Light sensitive.
Incompatible Materials	Oxidizing agents
Hazardous Decomposition Products	Carbon dioxides

Section 11: Toxicological Information

RTECS Not available.

Acute Toxicity

Acute toxicity scu-mus LD50:3533 mg/kg Carcinogenicity IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable. possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. Potential health effects Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin May cause skin irritation. Eyes May cause eye irritation. Signs and Symptoms of Exposure Skin contact may produce burns. Skin contact may result in inflammation; characterized by itching, scaling, reddening, or occasionally blistering. Eye contact can result in corneal damage or blindness.

Skin Corrosion/Irritation

Not available.

Serious Eye Damage/Irritation

Not available.

Respiratory or Skin Sensitization

Not available.

Germ Cell Mutagenicity

Not available.

Carcinogenicity
See above.

Reproductive Toxicity
Not available.

Routes of Entry
Not available.

Symptoms Related to Exposure
Not available.

Potential Health Effects
Not available.

Target Organ(s) Not available.

Section 12: Ecological Information

Ecotoxicity
Not available.

Persistance and Degradability
Not available.

Bioaccumulative Potential
Not available.

Mobility in Soil
Not available.

Other Adverse Effects
Not available.

Section 13: Disposal Considerations

Waste Disposal
Product Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of Container
Dispose of as unused product. Do not re-use empty containers.

Other Considerations
Observe all federal, state and local regulations when disposing of the substance.

Section 14: Transport Information

DOT Classification
Class 8: Corrosive material Packing Group III : Corrosive Liquid, Acidic, Organic, n.o.s. (Pyruvic Acid) UNNA: 3265 PG: III

Section 15: Regulatory Information

Regulations

TSCA 8(b) inventory: Pyruvic acid OSHA Hazards No known OSHA hazards. SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. SARA 311/312 Hazards No SARA hazards Massachusetts Right To Know Component No components are subject to the Massachusetts Right to Know Act. Pennsylvania Right To Know Component No components are subject to the Pennsylvania Right to Know Act. New Jersey Right To Know Component No components are subject to the New Jersey Right to Know Act. California Prop. 65 Components This product does not contain any chemicals known to State of California to cause caner, birth defects, or any other reproductive harm.

Other

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Section 16: Other Information

The information in this MSDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond PentaÓs control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in this MSDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in this MSDS. The user should review these regulations to ensure full compliance.