QUALIKEMS FINE CHEM PVT. LTD.
5531,BASTI HARPHOOL SINGH,SADAR THANA ROAD,DELHI-06.

Material Safety Data Sheet

Buffer Solution (Acetate) pH 4.00

Section 1 - Chemical Product and Company Identification

MSDS Name: Buffer Solution (Acetate) pH 4.00
Synonyms: None

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
64-19-7	Acetic acid	47.8	200-580-7
7732-18-5	Water	28.0	231-791-2
127-09-3	Sodium acetate	24.4	204-823-8
50-00-0	Formaldehyde	0.05	200-001-8
67-56-1	Methyl alcohol	0.02	200-659-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid.
Danger! Causes eye and skin burns. Causes digestive and respiratory tract burns. May be harmful if absorbed through the skin.
Target Organs: Teeth, eyes, skin, mucous membranes.

Potential Health Effects
Eye: Causes eye burns. May cause chemical conjunctivitis.
Skin: Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May be harmful if absorbed through the skin.
Ingestion: Causes gastrointestinal tract burns. May cause gastric disturbances and electrolytic imbalance.
Inhalation: May cause allergic respiratory reaction. Causes chemical burns to the respiratory tract. Can produce delayed pulmonary edema.
Chronic: Chronic exposure to acetic acid may cause erosion of dental enamel, bronchitis, eye irritation, darkening of the skin, and chronic inflammation of the respiratory tract. Chronic exposure may cause effects similar to those of acute exposure.

Section 4 - First Aid Measures

Eyes: Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Wash clothing before reuse. Discard contaminated shoes.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs

Acetic acid	10 ppm TWA; 15 ppm STEL	10 ppm TWA; 25 mg/m3 TWA 50 ppm IDLH	10 ppm TWA; 25 mg/m3 TWA
Water	none listed	none listed	none listed
Sodium acetate	none listed	none listed	none listed
Formaldehyde	0.3 ppm Ceiling	0.016 ppm TWA 20 ppm IDLH	0.75 ppm TWA; 2 ppm STEL; 0.5 ppm Action Level (Irritant and potential cancer ha zard - see 29 CFR 1910.1048)
Methyl alcohol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous r oute	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA

Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: none reported
pH: 4.00
Vapor Pressure: Not available.
Vapor Density: 0.7
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density:1.0-1.2
Molecular Formula: Mixture
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, acetic anhydride, ammonium nitrate, chlorine trifluoride, nitric acid, permanganates, sodium hydroxide, sodium peroxide, hydrogen peroxide, acetaldehyde, chlorosulfonic acid, oleum, potassium hydroxide, bromine pentafluoride, perchloric acid, chromic anhydride, potassium tert-butoxide, ethyleneimine, 2-aminoethanol, ethylene diamine, phosphorus trichloride, phosphorus isocyanate, diallyl methyl carbinol + ozone, nitric acid + acetone, xylene, chromic acid.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 64-19-7: AF1225000
CAS# 7732-18-5: ZC0110000
CAS# 127-09-3: AJ4300010
CAS# 50-00-0: LP8925000
CAS# 67-56-1: PC1400000
LD50/LC50:
CAS# 64-19-7:
Draize test, rabbit, skin: 50 mg/24H Mild;
Inhalation, mouse: LC50 = 5620 ppm/1H;
Oral, rat: LD50 = 3310 mg/kg;
Skin, rabbit: LD50 = 1060 uL/kg;
.

CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;
.

CAS# 127-09-3:
Draize test, rabbit, eye: 10 mg Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, rat: LC50 = >30 gm/m3/1H;
Oral, mouse: LD50 = 6891 mg/kg;
Oral, rat: LD50 = 3530 mg/kg;
Skin, rabbit: LD50 = >10 gm/kg;
.

CAS# 50-00-0:
Draize test, rabbit, eye: 750 ug/24H Severe;
Draize test, rabbit, eye: 750 ug Severe;
Draize test, rabbit, eye: 10 mg Severe;
Draize test, rabbit, eye: 37% Severe;
Draize test, rabbit, skin: 2 mg/24H Severe;
Draize test, rabbit, skin: 50 mg/24H Moderate;
Inhalation, mouse: LC50 = 454 mg/m3/4H;
Inhalation, mouse: LC50 = 505 mg/m3/2H;
Inhalation, rat: LC50 = 203 mg/m3;
Inhalation, rat: LC50 = 578 mg/m3/2H;
Inhalation, rat: LC50 = 250 ppm/2H;
Oral, mouse: LD50 = 42
CAS# 67-56-1:
Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m3/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;
Skin, rabbit: LD50 = 15800 mg/kg;

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Carcinogenicity:
CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 127-09-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 50-00-0:

- **ACGIH:** A2 - Suspected Human Carcinogen
- **California:** carcinogen, initial date 1/1/88 (gas)
- **NTP:** Suspect carcinogen
- **IARC:** Group 1 carcinogen

CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: LC50 = 75 mg/L; 96 Hr; CAS# 64-19-7: Unspecified
Fish: Goldfish: LC50 = 423 mg/L; 24 Hr; CAS# 64-19-7: Unspecified
Water flea Daphnia: EC50 = 32-47 mg/L; 24-48 Hr; CAS# 64-19-7: Unspecified
Bacteria: Phytobacterium phosphoreum: EC50 = 8.86-11 mg/L; 5,15,25 min; CAS# 64-19-7: Microtox test
Fish: Fathead Minnow: LC50 = 88 mg/L; 96 Hr; CAS# 64-19-7: Static bioassay @ 18-22°C
Fish: Pseudomonas putida:

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series:
CAS# 50-00-0: waste number U122.
CAS# 67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

	IATA	
Shipping Name:	ACETIC ACID SOLUTION	
Hazard Class:	8	
UN Number:	UN2790	
Packing Group:	III	

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
C
Risk Phrases:
R 34 Causes burns.

Safety Phrases:
S 23 Do not inhale gas/fumes/vapour/spray.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Section 16 - Additional Information

MSDS Creation Date: 7/22/1999
Revision #3 Date: 10/03/2005
Revision #4 Date: 09/03/2010
Revision #5 Date: 08/03/2015
Revision #6 Date: 07/03/2020
Revision #7 Date: 06/03/2025
