



INTERNATIONAL ACETYLS COMPANY

MATERIAL SAFETY DATA SHEET

1. PRODUCT MANUFACTURER INFORMATION

Product Name Glacial Acetic Acid (CH₃COOH)
Manufacturer International Acetyls Company (IAC)
P O Box 12021
Post Code 31961
Jubail Industrial City
Kingdom of Saudi Arabia

Emergency Telephone No +966 3 359 9985 (24 hours)
ID No UN2789
Company (affiliate) website <http://sipchem.com/en/affiliates.htm>

2. HAZARDOUS COMPONENTS

Acetic Acid 99.85% 64-19-7
Trace Impurities: Water 0.15% Maximum, Chlorides 1 PPM Maximum, Sulfates 1 PPM Maximum, **Heavy Metals (as Pb)** 0.5 PPM Maximum, Acetaldehyde 5 PPM Maximum, Formic Acid 0.05% Maximum, Iron (as Fe) 0.5 PPM Maximum, Nonvolatile Matter 0.003 g/100 mL Maximum, Reducing Substances < 1.0 mL of 0.03 N KMnO₄ per 5 mL sample required to hold pink color 30 minutes.

3. PRODUCT INFORMATION

Product Name ACETIC ACID (CH₃COOH)
Trade Name/Synonyms Glacial Acetic Acid, Vinegar Acid, Ethanoic Acid; Acide Acetique; Acido Acetico; Azijnzuur; Essigsaeure; Ethylic Acid; Glacial Acetic Acid (Pure Compound); Kyselina Octova; Methanecarboxylic acid; Octowy Kwas; Pyroligneous Acid; Vosol
U.N. Number 2789
Product Use Manufacturer of various acetates, acetyl compounds, acetate rayon, plastics and rubber; in tanning, printing calico and dyeing silk. As an acidulant and preservative in foods. Solvent for many substances. Widely used in commercial organic synthesis.

4. FIRST AID INFORMATION

Skin Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash affected areas with water (and soap if available) for at least 15 minutes. Transport to hospital or doctor.
Eye Immediately hold the eyes open and flush continuously for at least 15 minutes with fresh running water. Ensure irrigation under eyelids by occasionally lifting the upper and lower lids. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Inhalation Move to fresh air. Lay patient down. Keep warm and rested. If available, administer medical oxygen by trained personnel. If breathing is shallow or has stopped, ensure clear airway and apply resuscitation. Transport to hospital or doctor, without delay.
Ingestion Rinse mouth out with plenty of water. DO NOT induce vomiting. Observe the



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patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give Water (or milk) to rinse out mouth. Then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay.

POTENTIAL HEALTH EFFECTS

Target Organs Eyes, teeth, Skin, respiratory system (blood & kidney injury evident from ingestion only).

Entry Routes **Inhalation, Ingestion, Skin and/or Eye Contact /absorption**

Inhalation The vapor is extremely discomforting and may be corrosive to the upper respiratory tract if inhaled and may cause burns or severe mucous membrane damage. Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary edema. Exposure at 800 – 1200 ppm can not be tolerated for longer than 3 minutes.

Eye: The material is highly discomforting and corrosive to the eyes and is capable of causing severe damage with loss of sight. Dilute solutions of low molecular organic acids cause conjunctival hyperemia, prompt pain and corneal injury. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Skin: The material is highly discomforting and corrosive to the skin and contact may cause rapid tissue destruction if exposure is prolonged with chemical burns., ulceration and staining of the skin. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (non-allergic).

Ingestion: The material is extremely discomforting and corrosive if swallowed and is capable of causing burns to the mouth, throat, and esophagus with extreme discomfort and pain. Ingestion may result in nausea, abdominal irritation, pain and vomiting. Ingestion may cause delayed gastrointestinal and esophageal perforation and, in severe cases, death. Ingestion of as little as 1 mL. of glacial acid has resulted in esophageal perforation. Ingestion of low molecular organic acid solutions may produce spontaneous hemorrhaging, intravascular coagulation, gastrointestinal damage and esophageal and pyrolic stricture.

Exposure Limits US. ACGIH Threshold Limit Values
Time Weighted Average (TWA) = 10 ppm, STEL = 15 ppm
US. NOISH Pocket Guide to Chemical Hazards:
Recommended Exposure Limit (REL) = 10 ppm, 25 mg/m³
Short Term Exposure Limit (STEL) = 15 ppm, 37 mg/m³
OSHA PEL – TWA = 10 ppm

Long Term Effects Repeated minor oral exposure can cause blackening of the skin and teeth, erosion of the teeth, vomiting, diarrhea, nausea. Repeated minor vapor exposure may cause chronic respiratory inflammation and bronchitis. It is reported that workers exposed for 7 to 12 years at concentrations of 60 ppm, plus one hour daily at 100 -260 ppm had no injury except slight irritation of the respiratory tract, stomach, and skin although this report is equivocal as in another study different researchers found conjunctivitis, bronchitis,



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pharyngitis and erosion of exposed teeth apparently in the same workers.

Teratogenicity	No
Mutagenicity	No
Carcinogenicity	No

5. FIRE FIGHTING MEASURES

Fire hazards	Acetic Acid is a Combustible liquid.
Fire-Fighting	Contact fire department and tell them location and nature of hazard. May be violently or explosively reactive. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or waterways. If safe, switch off electrical equipment until vapor fire hazard removed. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. Do not approach containers suspected to be hot. Cool Fire exposed containers with water spray from a protected location. If safe to do so, remove containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use. With respect to fire incompatibility, avoid reaction with strong oxidizers, alkalies and selected amines. Avoid contact with common metals and their alloys.

6. ACCIDENTAL RELEASE MESURES

Flash Point	39 Deg C (Tag Closed Cup)
Auto ignition	516 Deg C (ASTM D2155)
Explosive Limit	LEL = 4% v/v UEL = 16% v/v
Extinguishing Media	Water Spray or fog; Alcohol stable foam, Carbon Dioxide

7. HANDLING AND STORAGE

Storage	Storage Tanks should be preferably constructed of Stainless Steel SS316 L. Tanks must be grounded, vented and should be nitrogen blanketed. Containers handling AA should be kept closed. Do not use mild steel or galvanized containers. Check that containers are clearly labeled. Glass Container or Plastic Container or Polyethylene or Polypropylene containers can be used.
Handling	Do not get in eyes, on skin, on clothing. Do not allow clothing wet with material to stay in contact with skin. Do not taste or swallow. Avoid breathing mist or vapor. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat and flame. Keep from contact with oxidizing materials. Use personal protective equipment when handling. Keep containers securely sealed when not in use. When handling, DO NOT eat, drink or smoke.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls	Use in a well – ventilated area. In confined areas, local and general ventilation should be provided to maintain airborne concentrations below permissible exposure limit. Provide adequate ventilation in warehouse or closed storage areas.
Gloves	Chemical Resistant Gloves



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Respiratory	Use NIOSH approved supplied air respirator when airborne concentrations exceed exposure limits. Follow the OSHA respirator regulations in 29CFR 1910.134.
Eye	Wear full face shield. DO NOT wear contact lenses. Contact lenses pose a special hazard; Soft lenses may absorb irritants and all lenses concentrate them.
Clothing	Wear Chemical Resistant clothing, preferably butyl or nitrile rubber.

9. PHYSICAL AND GHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
Specific Gravity	1.05 (20 deg C)
Freezing Point	17 Deg C
Boiling Point	118 Deg C
Vapour Pressure kPa	1.937 kPa at 25 Deg C
Vapour Density (air=1)	2.07
Molecular Weight	60.05
Volatile Components (% Vol)	100

10. STABILITY AND REACTIVITY

Stability	Stable
Incompatible with	Strong oxidizing agents. Segregate from alkalies, oxidizing agents & chemicals readily decomposed by acids i.e., cyanides, sulfides, carbonates.
Conditions of Reactivity	Reacts violently with strong oxidizing agents. Reacts with metals producing flammable/explosive hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Acetic Acid	LD50 Oral Rat	:	3310 – 3530 mg/kg
	LD50 Oral Mouse	:	4960 mg/kg
	Dermal LD50 Rabbit	:	1060 mg/kg
	Inhalation LC50 (Mouse)	:	1 hr: 5620 ppm
	Oral (human) TD	:	1.47 mg/kg
	Inhalation (human)	:	816 ppm/ 3 min
	Skin Irritation (Rabbit)	:	525 mg (Open) - Severe
	Eye Irritation (Rabbit)	:	0.05 mg (open) – Severe
	Skin (human)	:	50 mg / 24 hr - mild

12. ECOLOGICAL INFORMATION

Acetic Acid	Oxygen Demand Data:
	BOD -5: 340-880 mg/g
	BOD-20: 900 mg/g
	COD: 1030 mg/g
	Acute Aquatic Effects data:
	96 h LC-50 (fathead minnow): > 100 mg/l



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48 h LC-50 (golden orfe): 410 mg/l
96 h LC-50 (daphnid): >100 mg/l

13. DISPOSAL CONSIDERATIONS

- Spill** Eliminate all ignition Sources. Neutralize spill area and wash the area with Soda Ash or lime. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. For large spills flush the spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.
- Disposal** Follow applicable international, country and local regulations. Recycle where ever possible. Treat and neutralize at an effluent treatment plant. Use Soda Ash or slaked lime to neutralize. Recycle containers, otherwise dispose of in an authorized landfill.

14. TRANSPORT INFORMATION

- Shipping Name** Acetic Acid
Hazard Class 8 – Corrosive material



- ID No** UN2789
Packing Group II
Label 8- Corrosive, 3 – Flammable Liquid
NFPA Rating Health = 3, Flammability = 2, Reactivity = 0

15. REGULATORY INFORMATION

Regulations vary from country to country. Anyone who uses, transports or stores this product, should refer to country specific regulations. Following are a few sample regulations for reference only.

SARA 311/312 Hazard Classification (s) : Immediate (acute) health hazard, fire hazard

SARA 313: None, unless listed below.

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below

TSCA (US Toxic Substances Control Act): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

EINECS (European Inventory of Existing Commercial Chemical Substances): This product is listed on EINECS or otherwise complies with EINECS requirements. EINECS Number: 200-580-7

AICS/NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.

MITI (Japanese Handbook of Existing and New Chemical Substances): This product is listed in the Handbook or has been approved in Japan by new substance notification.

ECL (Korean Toxic Substances Control Act): This product is listed on the Korean Inventory or otherwise complies with the Korean Toxic Substances Control Act.



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16. OTHER INFORMATION

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