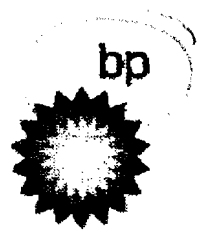


Material Safety Data Sheet

FE



1. Chemical product and company identification

Product name ACETIC ACID CHEMICALLY PURE
MSDS # 0000001037
Historic MSDS #: 11001
Code 0000001037
Chemical formula C2-H4-O2
Product use Industrial applications
Synonyms Acetic acid.
Supplier BP Amoco Chemical Company
150 West Warrenville Road
Naperville, Illinois 60563-8460
USA
Tel: 1 (877) 701-2726
EMERGENCY HEALTH INFORMATION: 1 (800) 447-8735
Outside the US: +1 703-527-3887 (CHEMTREC)
EMERGENCY SPILL INFORMATION: 1 (800) 424-9300 CHEMTREC (USA)
OTHER PRODUCT INFORMATION † (866) 4 BP - MSDS
(866-427-6737 Toll Free - North America)
email: bpcares@bp.com

2. Composition/information on ingredients

Ingredient name	CAS #	% by weight
Acetic acid	64-19-7	100

3. Hazards identification

Physical state Liquid.
Color Clear. Colorless.
Emergency overview DANGER! CORROSIVE.
COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.
CAUSES EYE BURNS.
CAUSES SKIN BURNS.
CAUSES RESPIRATORY TRACT BURNS.
Do not ingest. Do not get in eyes, on skin or clothing. Do not breathe vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry Absorbed through skin. Eye contact. Inhalation. Ingestion.
Potential health effects
Eyes Corrosive. Causes eye damage.
Skin Corrosive. Causes skin burns See toxicological Information (section 11)

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Inhalation Corrosive. Causes respiratory tract burns. See toxicological information (section 11)

Ingestion Corrosive. Causes severe irritation or burns of the mouth, throat, and esophagus.

See toxicological information (section 11)

4. First aid measures

Eye contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin contact Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire-fighting measures

Flammability of the product COMBUSTIBLE.

Auto-ignition temperature 463 °C

Flash point 39 °C (Closed cup) Pensky-Martens.

Explosion limits Lower: 4 %
Upper: 16 %

Products of combustion These products are carbon oxides (CO, CO₂) (carbon monoxide, carbon dioxide).

Unusual fire/explosion hazards Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

This material is not explosive as defined by established regulatory criteria.

Fire-fighting media and instructions In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. DO NOT FIGHT FIRE WHEN IT REACHES MATERIAL. Withdraw from fire and let it burn. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. First move people out of line-of-sight of the scene and away from windows. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Protective clothing (fire) Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

6. Accidental release measures

Personal precautions Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Do not touch or walk through spilled material. Use suitable protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire fighting procedures (See Section: "Fire-fighting measures").

Environmental precautions and clean-up methods If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion proof means to transfer material to a sealed, appropriate container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways. See Section 13 for Waste Disposal Information.

Personal protection in case of a large spill Splash goggles. Full suit. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

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7. Handling and storage

Handling	Do not get in eyes, on skin or on clothing. Use only with adequate ventilation. Avoid breathing vapor or mist. Do not breathe vapor or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling. Empty containers may contain toxic, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
Acetic acid	ACGIH TLV (United States, 9/2004). STEL: 37 mg/m ³ 15 minute(s). STEL: 15 ppm 15 minute(s). TWA: 25 mg/m ³ 8 hour(s). TWA: 10 ppm 8 hour(s). OSHA PEL (United States, 6/1993). TWA: 25 mg/m ³ 8 hour(s). TWA: 10 ppm 8 hour(s).

Control Measures Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the work-station location.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Personal protection

Eyes	Do not get in eyes. Wear face shield. Chemical splash goggles.
Skin and body	Do not get on skin or clothing. Wear clothing and footwear that cannot be penetrated by chemicals or oil. Wear face shield.
Respiratory	Use only with adequate ventilation. Do not breathe vapor or mist. If ventilation is inadequate, use NIOSH certified respirator which will protect against organic vapor.
Hands	Wear gloves that cannot be penetrated by chemicals or oil. (Butyl rubber gloves.)

The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Consult your supervisor or S.O.P. for special handling directions

Consult local authorities for acceptable exposure limits.

9. Physical and chemical properties

Physical state	Liquid.
Odor	Vinegar (Strong.)
Color	Clear. Colorless.
Heat of combustion	Not available.

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Boiling point / Range	117.9 °C
Melting point / Range	16.6 °C
Chemical formula	C2-H4-O2
Density	1049 kg/m ³ (1.049 g/cm ³) at 20°C
Vapor pressure	0.202 kPa (1.52 mm Hg)
Vapor Density (Air = 1)	2.1
Solubility	Soluble in water.
Dispersibility properties	See solubility in water.
Viscosity	Kinematic: 1.17 mm ² /s (1.17 cSt) at 20°C

10. Stability and reactivity

Stability and reactivity	The product is stable.
Conditions to avoid	Keep away from heat, sparks and flame. This product should be stored away from oxidizing materials and strong bases.
Incompatibility with various substances	Reactive with metals, oxidizing agents, reducing agents.
Hazardous decomposition products	carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide).
Hazardous polymerization	Will not occur.

11. Toxicological information

Ingredient name	Test	Result	Route	Species
Acetic acid.	LD50	3310 mg/kg	Oral	Rat
	LD50	1060 mg/kg	Dermal	Rabbit

Chronic toxicity

Carcinogenic effects No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).

Mutagenic effects No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

Reproductive effects No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.

Teratogenic effects No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

Other chronic toxicity data

Acetic Acid: Humans unacclimatized to acetic acid vapors experience extreme eye and nasal irritation at concentrations above 25 ppm. Air concentrations of 50 ppm are considered intolerable, causing intense lacrymation (eye weeping), nose, and throat irritation. Repeated exposures to high concentrations in man can cause eye conjunctival lesions, blackening of the hands, hyperkeratosis (thickening) of the skin, teeth erosion, congestion and edema of the pharynx, bronchial constriction, and respiratory tract irritation.

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12. Ecological information

Ecotoxicity	No testing has been performed by the manufacturer.
Persistence/degradability	Readily biodegradable
Mobility	This product may move with surface or groundwater flows because its water solubility is: 100%
Bioaccumulative potential	This product is not expected to bioaccumulate through food chains in the environment.
Other ecological information	expected to be slightly toxic to aquatic species because of acidity





13. Disposal considerations

Waste information Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

Consult your local or regional authorities.

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN2789	Acetic acid, glacial or Acetic acid solution, more than 80 per cent acid, by mass acid solution	8 (3)	II	Not determined.	Reportable quantity 5000 lbs. (2268 kg) Limited quantity Yes. Packaging instruction Passenger Aircraft Quantity limitation: 1 L Cargo Aircraft Quantity limitation: 30 L
TDG Classification	UN2789	Acetic acid, glacial or Acetic acid solution, more than 80 per cent acid, by mass acid solution	8 (3)	II	Not determined.	Not determined.
IMDG Classification	UN2789	Acetic acid, glacial or Acetic acid solution, more than 80 per cent acid, by mass acid solution	8 (3)	II	 	Emergency schedules (EmS) F-E, S-C
IATA Classification	UN2789	Acetic acid, glacial or Acetic acid solution, more than 80 per cent acid, by mass acid solution	8 (3)	II	 	Passenger and Cargo Aircraft Quantity limitation: 1 L Cargo Aircraft Only Quantity limitation: 30 L

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15. Regulatory information

U.S. Federal regulations	<p>US INVENTORY (TSCA): Listed on inventory.</p> <p>This product is not regulated under Section 302 of SARA and 40 CFR Part 355.</p> <p>SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Acetic acid: Fire hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard</p>
SARA 313	
Form R - Reporting requirements	This product does not contain any hazardous ingredients at or above regulated thresholds.
Supplier notification	This product does not contain any hazardous ingredients at or above regulated thresholds.
State regulations	<p>CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4): Acetic acid: 5000 lbs. (2268 kg);</p> <p>Massachusetts RTK:Acetic acid New Jersey:Acetic acid Pennsylvania RTK:Acetic acid (environmental hazard, generic environmental hazard)</p>
Inventories	<p>AUSTRALIAN INVENTORY (AICS): Listed on inventory.</p> <p>CANADA INVENTORY (DSL): Listed on inventory.</p> <p>CHINA INVENTORY (IECS): Listed on inventory.</p> <p>EC INVENTORY (EINECS/ELINCS): Listed on inventory.</p> <p>JAPAN INVENTORY (ENCS): Listed on inventory.</p> <p>KOREA INVENTORY (ECL): Listed on inventory.</p> <p>PHILIPPINE INVENTORY (PICCS): Listed on inventory.</p>

16. Other information

Label requirements	<p>DANGER! CORROSIVE.</p> <p>COMBUSTIBLE LIQUID AND VAPOR.</p> <p>VAPOR MAY CAUSE FIRE.</p> <p>CAUSES EYE BURNS.</p> <p>CAUSES SKIN BURNS.</p> <p>CAUSES RESPIRATORY TRACT BURNS.</p>	
HMIS® Rating :	<p>Health 3</p> <p>Flammability 2</p> <p>Physical Hazard 0</p> <p>Personal protection X</p>	<p>National Fire Protection Association (U.S.A.)</p>



History	
Date of issue	03/24/2006.
Date of previous issue	02/07/2005.
Prepared by	Product Stewardship

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