



Borden & Remington Corp
63 Water Street
PO Box 2573
Fall River, MA, USA 02722
(508) 675-0096

Acetic Acid Solution 84%

Acetic Acid Solution 84%

SDS Preparation Date (mm/dd/yyyy): 08/12/2013, reviewed 10/24/2019

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Acetic Acid Solution, 84%**

Product Code(s) : Acetic Acid Solution 84%

Recommended use of the chemical and restrictions on use

: Reagent; Chemical intermediate.

Chemical family

: Diluted aqueous solution of acetic acid.

Name, address, and telephone number of the supplier:

Borden & Remington Corp

63 Water St.
PO Box 2573
Fall River, MA, USA
02722

Supplier's Telephone # : (508) 675-0096

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear, colorless liquid. Pungent odor.

Most important hazards:

OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Hazardous classification:

Acute toxicity (Oral) - Category 4 H302

Acute Toxicity - Oral (Category 5)

Acute Toxicity - Dermal (Category 4)

Acute Toxicity - Inhalation (Category 4)

Skin corrosion - Category 1B H314

Serious eye damage - Category 1 H318

Aquatic Acute - Category 1 H402

Flammable Liquid - Category 3 H226

Label elements

The following label information is applicable only to the United States according to OSHA Regulations (29 CFR 1910.1200) (Hazcom 2012):

Signal Word

DANGER!

Hazard statement(s)

H302 Harmful if swallowed.

H226 Flammable Liquid and Vapor

Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H402 Harmful to aquatic life.

Precautionary statement(s)

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- P210 Keep away from heat/sparks/open flames/hot surfaces. No Smoking
P233 Keep container tightly closed
P240 Ground/bond container and receiving equipment
P241 Use explosion – proof electrical/ ventilating/lighting/equipment
P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P264 Wash skin thoroughly after handling
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P 340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes/ Remove contact lenses, if present, and easy to do so. Continue rinsing.
P310 Immediately call a poison control center/doctor/physician
P321 Specific treatment (see supplemental first aid instructions on this label)
P363 Wash contaminated clothing before reuse
P370 + P378 In case of fire: use dry sand, dry chemical, or alcohol-resistant foam to extinguish
P403 + P235 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local regulation.

Hazard pictograms



Other hazards

None known.



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>CAS #</u>	<u>Concentration</u>
Acetic Acid	64-19-7	84%
Water	7732-18-5	16%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Seek immediate medical attention/advice. Do not induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only.
- Skin contact* : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice. Wash contaminated clothing before re-use. Leather and shoes that have been contaminated with the solution may need to be destroyed
- Eye contact* : Immediately flush eyes thoroughly with running water for at least 20 to 30 minutes. Seek immediate medical attention/advice.

Most important symptoms and effects, both acute and delayed

- : Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage. Harmful in contact with skin. Causes severe skin irritation. Symptoms may include redness, blistering, pain and swelling. May cause respiratory irritation. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing. Ingestion may cause severe irritation to the mouth,

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Causes chemical burns. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use water fog or fine spray, alcohol resistant foams, carbon dioxide or dry chemical.

Unsuitable extinguishing media

- : For this substance/mixture no limitations of extinguishing agents are given..

Special hazards arising from the substance or mixture / Conditions of flammability

- : Burning produces noxious and toxic fumes. Combustible liquid and vapor. Vapors are heavier than air and may spread along floors. Vapors may travel considerable distance to a source of ignition and flash back. Forms explosive mixtures with air at elevated temperatures.

Flammability classification (OSHA 29 CFR 1910.106)

- : COMBUSTIBLE LIQUID.

Explosion Data: Sensitivity to Mechanical Impact / Static Discharge:

- : Not expected to be sensitive to mechanical impact.

Hazardous combustion products

- : Carbon oxides and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Prevent skin contact. A full-body chemical resistant suit should be worn.

Special fire-fighting procedures



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: Suppress (knock down) gases/vapors/mists with a water spray jet. Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from firefighting to enter drains or water courses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Individuals involved in the cleanup must wear acid resistant personal protective equipment. For personal protection see section 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

: Ventilate area of release. Eliminate all ignition sources if safe to do so. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the National Response Center in the United States (phone: 1-800-424-8802).
 US CERCLA Reportable quantity (RQ): See section 15.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Take measures to prevent buildup of electrostatic charge. Follow advice and precautions found in Section 5. Use under chemical fume hood. Use explosion proof equipment. Avoid contact with skin and eyes. Do not eat, drink, or smoke or use personal products when handling chemical substances. Use only in well ventilated areas. Do not inhale gases, fumes, dusts, mists, vapors, or aerosols. Follow good hygiene procedures when handling chemical materials (see Section 8). Keep away from open flames, hot surfaces, and sources of ignition

Conditions for safe storage

: Store in cool location. Provide ventilation for containers. Avoid extreme heat, ignition sources or open flame. Keep containers tightly sealed. Store with like hazards. Containers which are opened must be carefully resealed and kept upright to prevent leakage

Incompatible materials

: Alkalis, strong oxidizing agents; Metals (carbon steel, brass, zinc, bronze); Acetaldehyde.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Acetic Acid	10 ppm	15 ppm	10 ppm ; 25 mg/m ³	N/Av

Exposure controls

Ventilation and engineering measures

: Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapors below their respective threshold limit value.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. Use NIOSH/MSHA approved air purifying respirator with appropriate chemical cartridges or a positive pressure, air supplied respirator may be used to reduce exposure. Advice should be sought from respiratory protection specialists.



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- Skin protection** : Impervious gloves must be worn when using this product. Wear impervious gloves, such as butyl rubber. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye / face protection** : Chemical splash goggles must be worn when handling this material. A full face shield may also be necessary.
- Other protective equipment** : Wear chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.
- General hygiene considerations** : Avoid breathing vapor or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Clear colorless liquid.
- Odour** : Pungent; vinegar like.
- Odour threshold** : N/Av
- pH** : 2.4 @ 60g/l
- Melting/Freezing point** : 16.2°C (61°F) (acetic acid)
- Initial boiling point and boiling range** : 117 -118°C at one atmosphere (acetic acid)
- Flash point** : N/Av
- Flashpoint (Method)** : N/Av
- Evaporation rate (BuAe = 1)** : N/Av
- Flammability (solid, gas)** : N/Av
- Lower flammable limit** : 4% (acetic acid)
- Upper flammable limit** : 19.9% (acetic acid)
- Oxidizing properties** : None known.
- Explosive properties** : Not explosive
- Vapor pressure** : 73.3 hPa (55mm Hg) @ 50.0 °C, 15.2 hPa (11.4 mm Hg) @ 20.0 °C (acetic acid)
- Vapor density** : N/Av
- Relative density / Specific gravity 84% Solution at 20°C** : 1.07
- Solubility in water** : Completely soluble
- Other solubility(ies)** : N/Av
- Partition coefficient: n-octanol/water or Coefficient of water/oil distribution** : N/Av
- Auto-ignition temperature** : 485°C (905°F) (acetic acid)
- Decomposition temperature** : N/Av
- Viscosity** : N/Av
- Volatiles (% by weight)** : N/Av
- Volatile organic Compounds (VOC's)** : N/Av
- Absolute pressure of container** : N/Av
- Flame projection length** : N/Av



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Other physical/chemical comments

: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Nonreactive under normal conditions.

Chemical stability : Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions

: None under normal conditions.

Conditions to avoid : Moisture sensitive, Heat, flames, sparks. Incompatible materials

Incompatible materials : Oxidizing agents, soluble carbonates and phosphates. Hydroxides, Metals, Peroxides, Permanganates, Potassium Permanganate, Amines, Alcohols, and Nitric Acid, Strong Oxidizers and bases

Hazardous decomposition products

: Oxides of carbon.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Harmful if inhaled. May cause severe irritation to the nose, throat and respiratory tract. Symptoms may include coughing, choking and wheezing. Inhalation of extremely high concentrations could cause pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.

Sign and symptoms ingestion

: May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

Sign and symptoms skin

: Harmful in contact with skin. Causes severe skin irritation. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring.

Sign and symptoms eyes

: Causes serious eye damage. Chemical burns, corneal damage, and possibly blindness can result from direct contact.

Potential Chronic Health Effects

: Chronic skin contact with low concentrations may cause dermatitis. Prolonged or repeated inhalation of fumes or vapors, may cause chronic lung effects, such as bronchitis, and tooth enamel erosion.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to have other reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.



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Specific target organ effects : Eyes, skin, respiratory system and digestive system
This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory) May cause respiratory irritation.
Not classified as specific target organ toxicity-repeated exposure.

Irritancy : Corrosive

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data. The calculated ATE values for this mixture are:

ATE inhalation (vapors) = 14.25 mg/L

ATE dermal = 1325.00 mg/kg.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u> <u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Acetic Acid	11.4 mg/L (rat)	3310 mg/kg	1112 mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for individual ingredient ecotoxicity data. Toxicity is primarily associated with pH.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Acetic Acid	64-19-7	>1000 mg/L (Rainbow trout)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Acetic Acid	64-19-7	300.82 mg/L (Water flea)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Acetic Acid	64-19-7	N/Av	N/Av	None.

Persistence and degradability

: Readily biodegradable .

Bioaccumulation potential

: No data is available on the product itself.



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Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : See Section 7 (Handling and Storage) for further details. Empty containers retain residue (liquid and/or vapor) and can be dangerous.

Methods of Disposal : Dispose of in accordance with federal, provincial and local hazardous waste laws.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN2789	ACETIC ACID SOLUTION	8	II	8, 3
49CFR/DOT Additional information	US CERCLA Reportable quantity (RQ): (5000 lbs / 2270 kg).				
ICAO/IATA	UN2789	ACETIC ACID SOLUTION	8	II	8, 3
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction.				

Special precautions for user : Keep away from heat, sparks and open flame. - No smoking.

Environmental hazards : See ECOLOGICAL INFORMATION, Section 12

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Acetic Acid	64-19-7	Yes	64-17-7 5000 lbs / 2270 kg	N/Ap	No	N/Ap



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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65			State "Right to Know" Lists				
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Acetic Acid	64-19-7	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Acetic Acid	64-19-7	200-580-7	Present	Present	(2)-688	KE-00013	Present	HSR000975, HSR001580, HSR001581, HSR001582 (dilution)

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- LC: Lethal Concentration
- LD: Lethal Dose
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible exposure limit
- RCRA: Resource Conservation and Recovery Act
- RTECS: Registry of Toxic Effects of Chemical Substances
- SARA: Superfund Amendments and Reauthorization Act
- STEL: Short Term Exposure Limit
- TDG: Canadian Transportation of Dangerous Goods Act & Regulations
- TLV: Threshold Limit Values
- TPQ: Threshold Planning Quantity
- TSCA: Toxic Substance Control Act
- TWA: Time Weighted Average
- WHMIS: Workplace Hazardous Materials Identification System



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References : 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2013.
2. International Agency for Research on Cancer Monographs, searched 2013.
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases (Chempendium, HSDB and RTECs). (2013)
4. Material Safety Data Sheet from manufacturer.
5. US EPA Title III List of Lists (October 2012)
6. California Proposition 65 List (26 July 2013)

Preparation Date (mm/dd/yyyy)

: 08/12/2013, Reviewed 10/24/2019

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared by:

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DISCLAIMER

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