CovaChem

COVACHEM, LLC.

Safety Data Sheet

LCMS Grade Acetic Acid

SECTION 1: Identification

1.1 Product identifier

Product name	LCMS Grade Acetic Acid
Product number	11201
Brand	CovaChem, LLC.
Substance name	Acetic Acid, Glacial
EC no.	200-580-7
CAS no.	64-19-7
Index no.	607-002-00-6

1.3 Recommended use of the chemical and restrictions on use

For use in the preparation of mobiles phase solutions to be used in liquid chromatography applications. Not intended for use in diagnostic or for human consumption.

1.4 Supplier's details

Name	CovaChem, LLC.
Address	6260 East Riverside Blvd Suite 119 Loves Park, IL 61111 United States
Telephone	815-315-1271
Fax	815-315-1272
email	info@covachem.com

1.5 Emergency phone number(s)

PERS Professional Emergency Response Service
Company Code 11814
1-800-633-8253 (U.S. & Canada)
1-801-629-0667 (International)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)

- Acute toxicity, oral (chapter 3.1), Cat. 3
- Acute toxicity, oral (chapter 3.1), Cat. 5
- Acute toxicity, dermal (chapter 3.1), Cat. 4
- Skin corrosion/irritation (chapter 3.2), Cat. 1
- Sensitization, skin (chapter 3.4), Cat. 1
- Acute toxicity, inhalation (chapter 3.1), Cat. 3
- Hazardous to the aquatic environment - acute hazard (chapter 4.1), Cat. 3

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word	**Danger**

Hazard statement(s)

H226	Flammable liquid and vapor
H290	May be corrosive to metals
H301	Toxic if swallowed
H303	May be harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H331	Toxic if inhaled
H402	Harmful to aquatic life

Precautionary statement(s)

P260	Do not breathe dust, fume, gas, mist, vapors or spray.
P264	Wash hands, arms and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or physician if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	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. Continue rinsing.
P321	Specific treatment (Wash areas of contact with water).
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or physician.
P362+P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	Acetic Acid, Glacial
EC no.	200-580-7
CAS no.	64-19-7
Index no.	607-002-00-6
Formula	C2H4O2
Molecular weight	60.05

Other names / synonyms	acetic acid >98 %; ACETIC ACID, conc.>90%; UN 2789; METHANECARBOXYLIC ACID; GLACIAL ACETIC ACID; ETHANOIC ACID; ACETIC ACID, GLACIAL

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice

*SKIN CONTACT:
IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water.
IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop.
IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.

*INHALATION:
IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital.
Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.

*EYE CONTACT:
First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center.
Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician.
IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

*INGESTION:
DO NOT INDUCE VOMITING. Corrosive chemicals will destroy the membranes of the mouth, throat, and esophagus and, in addition, have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems.
If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital.
If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. Transport the victim IMMEDIATELY to a hospital.

*SYMPTOMS:
Depending on the intensity and duration of exposure, effects of exposure to this chemical may vary from mild irritation to severe destruction of tissue [269]. Vapors of this compound may produce irritation of the eyes, nose, throat and lungs. Inhalation of concentrated vapors may cause serious damage to the lining membranes of the nose, throat and lungs.

	Other symptoms may include severe damage to the skin and severe eye damage which may result in loss of sight. Repeated or prolonged exposure may cause darkening of the skin, erosion of exposed front teeth, and chronic inflammation of the nose, throat and bronchi [102,346]. Exposure to 50 ppm or more is intolerable to most persons and results in intense lacrimation and irritation of the eyes, nose and throat with pharyngeal edema and chronic bronchitis. Unacclimatized individuals experience extreme eye and nasal irritation at concentrations of 25 ppm. Conjuncti-vitis from concentrations below 10 ppm has been reported [102]. Eye contact may result in permanent opacification of the cornea, severe iritis, small pupils fixed by posterior synechias, photophobia, hyperemia of the conjunctiva, inflammation and permanent corneal anesthesia [099]. Ingestion of this compound may cause severe corrosion of the mouth and gastrointestinal tract with vomiting, hematemesis, diarrhea, circulatory collapse, uremia and death [031]. Ingestion may also cause severe pain in the mouth, throat and abdomen; and to the formation of white plaques and ulcers on the mucous membranes. Hoarseness, rapid and shallow respiration, and low body temperature may develop [295]. Ingestion of as little as 1.0 mL of this compound has caused perforation of the esophagus [058,102]. It may later cause strictures of the esophagus and pylorus. The vapors are capable of producing bronchial constriction [151]. Other results of ingestion include bloody vomiting, shock, hemolysis and hemoglobinurea followed by anuria. Bronchopneumonia and pulmonary edema may develop following acute overexposure. Chronic exposure may result in pharyngitis and catarrhal bronchitis [346]. Delayed breathing difficulties may occur [102]. Skin contact may result in hyperkeratotic dermatitis [430]. Other symptoms include coughing and chest pain. Contact with skin may cause second-degree burns after a few minutes of contact [371]. It may also cause redness and skin sensitization [058].
If inhaled	IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.
In case of skin contact	IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.
In case of eye contact	First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.
If swallowed	DO NOT INDUCE VOMITING. Corrosive chemicals will destroy the membranes of the mouth, throat, and esophagus and, in addition, have a

high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. Transport the victim IMMEDIATELY to a hospital.

4.2 Most important symptoms/effects, acute and delayed

Depending on the intensity and duration of exposure, effects of exposure to this chemical may vary from mild irritation to severe destruction of tissue [269]. Vapors of this compound may produce irritation of the eyes, nose, throat and lungs. Inhalation of concentrated vapors may cause serious damage to the lining membranes of the nose, throat and lungs. Other symptoms may include severe damage to the skin and severe eye damage which may result in loss of sight. Repeated or prolonged exposure may cause darkening of the skin, erosion of exposed front teeth, and chronic inflammation of the nose, throat and bronchi [102,346]. Exposure to 50 ppm or more is intolerable to most persons and results in intense lacrimation and irritation of the eyes, nose and throat with pharyngeal edema and chronic bronchitis. Unacclimatized individuals experience extreme eye and nasal irritation at concentrations of 25 ppm. Conjunctivitis from concentrations below 10 ppm has been reported [102]. Eye contact may result in permanent opacification of the cornea, severe iritis, small pupils fixed by posterior synechias, photophobia, hyperemia of the conjunctiva, inflammation and permanent corneal anesthesia [099]. Ingestion of this compound may cause severe corrosion of the mouth and gastrointestinal tract with vomiting, hematemesis, diarrhea, circulatory collapse, uremia and death [031]. Ingestion may also cause severe pain in the mouth, throat and abdomen; and to the formation of white plaques and ulcers on the mucous mem- branes. Hoarseness, rapid and shallow respiration, and low body temperature may develop [295]. Ingestion of as little as 1.0 mL of this compound has caused perforation of the esophagus [058,102]. It may later cause strictures of the esophagus and pylorus. The vapors are capable of producing bronchial constriction [151]. Other results of ingestion include bloody vomiting, shock, hemolysis and hemoglobinurea followed by anuria. Bronchopneumonia and pulmonary edema may develop following acute overexposure. Chronic exposure may result in pharyngitis and catarrhal bronchitis [346]. Delayed breathing difficulties may occur [102]. Skin contact may result in hyperkeratotic dermatitis [430]. Other symptoms include coughing and chest pain. Contact with skin may cause second-degree burns after a few minutes of contact [371]. It may also cause redness and skin sensitization [058].

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

When the temperature is above the flash point, flammable in the presence of an ignition source. Keep away from all heat sources, sparks, and open flames.

5.3 Special protective actions for fire-fighters

Wear a self-contained breathing apparatus when appropriate.

Further information

Carbon oxides formed in fire conditions.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

*ACUTE/CHRONIC HAZARDS:
This compound is corrosive to tissue. It is irritating to
the skin, mucous membranes, upper respiratory tract and eyes. It may be fatal if swallowed. It causes severe burns to all tissues
contacted. When heated to decomposition, it emits toxic fumes of CO
and CO2. It is also a lacrimator.

*MINIMUM PROTECTIVE CLOTHING:
If Tyvek-type disposable protective clothing is not worn during handling of this chemical, wear disposable Tyvek-type sleeves taped to your gloves.

*RECOMMENDED GLOVE MATERIALS:
GlovES+ Expert System Glove Types For The Neat (Undiluted) Chemical:
This chemical has not been tested for permeation by Radian Corporation; however, the GlovES+ expert system was used to extrapolate permeation test information from compounds in the same chemical class. The GlovES+ system uses permeation data from literature sources; therefore, extra safety margins should be used with the estimated protection time(s). If this chemical makes direct contact with your glove, or if a tear, puncture or hole develops, replace them at once.
The GlovES+ expert system is a tool that can help people better manage protection from chemicals, however this tool cannot replace sound judgment nor make technical decisions. Our GlovES+ expert system is designed to offer initial advice and assistance in glove selection while the final glove selection should be made by knowledgeable individuals based on the specific circumstances involved.

Glove Type Model Number Thickness Estimated Protection Time
Natural Rubber Ansell No Powder Unknown 240 min.
Neoprene Edmont 29-870 0.38 mm 420 min.
Nitrile Edmont 49-155 0.38 mm 480 min.
PVC Comasec Normal Unknown 240 min.

*RECOMMENDED RESPIRATOR:
Where the neat test chemical is weighed and diluted, wear a NIOSH-approved half face respirator equipped with an organic vapor/acid gas cartridge (specific for organic vapors, HCl, acid gas and SO2) with a dust/mist filter.
Splash proof safety goggles should be worn while handling this chemical. Alternatively, a full face respirator, equipped as above, may be used to provide simultaneous eye and respiratory protection.

*OTHER: Not available

*STORAGE PRECAUTIONS:
You should store this chemical at ambient temperatures, and protect it from light and moisture.

*SPILLS AND LEAKAGE:
If you should spill this chemical, use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

*DISPOSAL AND WASTE TREATMENT: Not available

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

If you should spill this chemical, use absorbent paper to pick up all liquid spill material. Seal the absorbent paper, as well as any of your clothing which may be contaminated, in a vapor-tight plastic bag for eventual disposal. Wash any surfaces you may have contaminated with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Acetic Acid (CAS: 64-19-7)
TWA: 10 ppm (ACGIH)

8.2 Appropriate engineering controls

Use product in a well ventilated location, such as in a fume hood.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Use a face shield (minimum 8 inches) and government tested and approved safety goggles, such as NIOSH (US) or EN 166 (EU).

Skin protection
*MINIMUM PROTECTIVE CLOTHING: If Tyvek-type disposable protective clothing is not worn during handling of this chemical, wear disposable Tyvek-type sleeves taped to your gloves. *RECOMMENDED GLOVE MATERIALS: GlovES+ Expert System Glove Types For The Neat (Undiluted) Chemical: This chemical has not been tested for permeation by Radian Corporation; however, the GlovES+ expert system was used to extrapolate permeation test information from compounds in the same chemical class. The GlovES+ system uses permeation data from literature sources; therefore, extra safety margins should be used with the estimated protection time(s). If this chemical makes direct contact with your glove, or if a tear, puncture or hole develops, replace them at once. The GlovES+ expert system is a tool that can help people better manage protection from chemicals, however this tool cannot replace sound judgment nor make technical decisions. Our GlovES+ expert system is designed to offer initial advice and assistance in glove selection while the final glove selection should be made by knowledgeable individuals based on the specific circumstances involved. Glove Type Model Number Thickness Estimated Protection Time Natural Rubber Ansell No Powder Unknown 240 min. Neoprene Edmont 29-870 0.38 mm 420 min. Nitrile Edmont 49-155 0.38 mm 480 min. PVC Comasec Normal Unknown 240 min.

Body protection
Complete chemical protective suit is recommended. The personal protective equipment should be selected based upon the concentration and amount of chemical at work station.

Respiratory protection
RECOMMENDED RESPIRATOR: Where the neat test chemical is weighed and diluted, wear a NIOSH- approved half face respirator equipped with an organic vapor/acid gas cartridge (specific for organic vapors, HCl, acid gas and SO2) with a dust/mist filter. Splash proof safety goggles should be worn while handling this chemical.

Alternatively, a full face respirator, equipped as above, may be used to provide simultaneous eye and respiratory protection.

Thermal hazards
Product is flammable. Keep away from fire and ignition sources.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Liquid;
Odor	Pungent Vinegar Odor
Odor threshold	data unavailable
pH	2.4 at 1.0 M
Melting point/freezing point	16.6
Initial boiling point and boiling range	118
Flash point	40
Evaporation rate	0.97
Flammability (solid, gas)	
Upper/lower flammability limits	
Vapor pressure	11.4 mm Hg @ 20 C [042,051,055,058]; 20 mm Hg @ 30 C
Vapor density	
Relative density	1.0492 @ 20/4 C [017,047,062,205]
Solubility(ies)	Freely soluble in water
Partition coefficient: n-octanol/water	Log Poct = -0.31
Auto-ignition temperature	
Decomposition temperature	
Viscosity	1.22 cps @ 20 C
Explosive properties	
Oxidizing properties	

Other safety information
Vapor density : 2.07
pKa: 4.734 @ 25 C
Freezing point not lower than 14.8 C
Crystallizes when cooled to about 10 C and does not completely re-melt until warmed to about 15 °C

SECTION 10: Stability and reactivity

10.2 Chemical stability
The chemical is stable under normal storage conditions.

10.3 Possibility of hazardous reactions
Data unavailable.

10.4 Conditions to avoid
Avoid excessive heat exposure and proximity to sparks or open flames.

10.5 Incompatible materials
Oxidizing agents, Strong bases, permangenates, peroxides, metals, carbonates, phosphates, amines and alcohols.

10.6 Hazardous decomposition products
Carbon oxides

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
ACETIC ACID
LD50 Oral - Rat - 3,310 mg/kg
LD50 Oral - Rat - 3,310 mg/kg
LD50 Percutaneous - Rabbit - 1,112 mg/kg

Skin corrosion/irritation
Data unavailable

Serious eye damage/irritation
Rabbit - Eyes - Corrosive to eyes

Respiratory or skin sensitization
Causes sensitivity to skin.

Germ cell mutagenicity
Data unavailable.

Carcinogenicity
IARC: Not identified as possible, probable or confirmed human carcinogen.
OSHA: Not identified as possible, probable or confirmed human carcinogen.
NTP: Not identified as possible, probable or confirmed human carcinogen.
ACGIH: Not identified as possible, probable or confirmed human carcinogen.

Reproductive toxicity
Data unavailable.

STOT-single exposure
Data unavailable.

STOT-repeated exposure
Data unavailable.

Aspiration hazard
Data unavailable.

SECTION 12: Ecological information

Toxicity
Toxicity to Fish: LC50, 1,000 mg/L at 96 h (Oncorhynchus mykiss, ie. Rainbow trout)
Toxicity to Daphnia: EC50, 300 mg/L at 48 h (Daphnia magna, ie. Water flea)

Persistence and degradability
Readily biodegradable, 99 %

Bioaccumulative potential
Data unavailable

Mobility in soil
Data unavailable

Results of PBT and vPvB assessment
Data unavailable

SECTION 13: Disposal considerations

Disposal of the product
Generation of waste should be kept to a minimum when possible. Any waste generated should be recycled when possible. Please dispose any unused or used materials in accordance with applicable national, regional and local laws and regulations.

Disposal of contaminated packaging
Dispose of as unused product.

Waste treatment
This product should be disposed of by a licensed waste management professional. Disposal through incineration with afterburner scrubbing is recommended.

Sewage disposal
Product should not enter the sewer.

SECTION 14: Transport information

DOT (US)
UN Number: 2789
Class: 8
Packing Group: II
Proper Shipping Name: Acetic Acid, Glacial
Reportable quantity (RQ): 5,000 lbs
Marine pollutant: No
Poison inhalation hazard: No

IMDG
UN Number: 2789
Class: 8
Packing Group: II
EMS Number: F-E, S-C
Proper Shipping Name: ACETIC ACID, GLACIAL

IATA
UN Number: 2789
Class: 8
Packing Group: II
Proper Shipping Name: Acetic acid, glacial

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards
Fire Hazard, Chronic Health Hazard, Acute Health Hazard

SARA 313 Components
This material does not contain any chemical components that exceed the threshold reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know Components
Chemical name: Acetic acid
CAS number: 64-19-7

New Jersey Right To Know Components
Common name: ACETIC ACID
CAS number: 64-19-7

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

HMIS Rating

Acetic Acid, Glacial	
HEALTH	3
FLAMMABILITY	2
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

NFPA Rating

SECTION 16: Other information

16.1 Further information/disclaimer
The information represented in this Safety Data Sheet is believed to be correct and is based on the current state of our knowledge. This document or any other document does not represent or suggest any type of warranty or guarantee of the product properties or characteristics of this material. CovaChem, LLC and its affiliates shall not be held liable for any damages that result from contact with the above product or handling this product or any others.