Version: 2.1

Revision date: 12.09.2024

Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1: Identification

Product identifier

Trade name/designation:	Acetic Acid, Glacial U.S.P., F.C.C., A.C.S.
Product No.:	2502
Synonyms:	none

Relevant identified uses of the substance or mixture and uses advised against

Recommended use	For Laboratory, Research or Manufacturing Use.
Uses advised against	Not determined.

Details of the supplier of the safety data sheet

Supplier

Avantor Performance Materials, LLC.

Street	100 Matsonford Rd, Suite 200
Postal code/City	Radnor, PA 19087, United States
Telephone	+1-855-282-6867
Telefax	+1-610-573-2610

Emergency phone number

Telephone	+1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA and Canada)

Preparation Information
Product Information Compliance

E-mail	SDS@avantorsciences.com

SECTION 2: Hazard identification

Classification of the substance or mixture

Label elements

Physical hazards

Flammable liquid, category 3

Health hazards

Skin corrosion, category 1A
Serious eye damage, category 1

Hazard pictograms

Signal word: Danger

Hazard statements

H226 - Flammable liquid and vapor.
H314 - Causes severe skin burns and eye damage.

Precautionary statements
Prevention:
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P243 - Take precautionary measures against static discharge.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands thoroughly after handling.
P242 - Use only non-sparking tools.

Response:
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 - Wash contaminated clothing before reuse.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P310 - Immediately call a POISON CENTER/doctor.

Storage:
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.

Disposal:
P501 - Dispose of contents/container to an appropriate treatment or disposal facility in accordance with applicable laws and regulations.

Hazard(s) not otherwise classified (HNOC)
none

SECTION 3: Composition/information on ingredients

Substances

Substance name:	Acetic acid
Molecular formula:	H_3CCOOH
Molecular weight:	60.05 g/mol
CAS No.:	64-19-7

SECTION 4: First aid measures

General information

Do not leave affected person unattended. If unconscious but breathing normally, place in recovery position and seek medical advice. Take off immediately all contaminated clothing. Highly flammable liquid and vapor. Wash contaminated clothing before reuse. When in doubt or if symptoms are observed, get medical advice.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician. When in doubt or if symptoms are observed, get medical advice.

In case of skin contact

Remove contaminated, saturated clothing immediately. Wash off any skin contamination immediately. Seek medical advice immediately.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately. Consult an ophthalmologist.

In case of ingestion

Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person or a person with cramps. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

Most important symptoms/effects, acute and delayed

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Causes severe skin burns and eye damage. Risk of blindness. Causes poorly healing wounds. Cough. Dyspnoea. Pulmonary oedema. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Indication of any immediate medical attention and special treatment needed

After inhalation, immediate application of glucocorticoids (inhalative), administration of oxygen and immobilization of the affected person are indicated. If necessary, all further measures of pulmonary edema prophylaxis. After decontamination of the skin pain treatment and shock prophylaxis. If extensive skin contact: get medical help immediately and kept under medical surveillance (hospitalization). After swallowing: Do not induce vomiting. No oral administration of fluids, activated charcoal, or laxatives, no gastric lavage, but aspiration of the fluid from the stomach via a nasogastric tube, avoiding intubation, if this is possible within 60 minutes.

SECTION 5: Fire fighting measures

Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.
Water spray.
ABC-powder
Carbon dioxide (CO_2).
Nitrogen

Extinguishing media which must not be used for safety reasons

Full water jet

Specific hazards arising from the chemical

In case of fire may be liberated:
Carbon monoxide
Carbon dioxide (CO_2).

Advice for firefighters

In case of fire: Evacuate area.
Do not inhale explosion and combustion gases.
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.
Vapors are heavier than air, spread along floors and form explosive mixtures with air.
Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.
Use water spray jet to protect personnel and to cool endangered containers.
DO NOT fight fire when fire reaches explosives.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Avoid contact with eyes and skin. Do not breathe gas/fume/vapor/spray. Remove victim out of the danger area. Provide adequate ventilation. First Aid, decontamination, treatment of symptoms.

Environmental precautions

Do not allow to enter into surface water or drains.

Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Rinse affected areas with water. Dispose according to legislation. Ventilate affected area.

Additional information

Personal protection equipment (PPE): see section 8 Disposal information: see section 13

SECTION 7: Handling and storage

Precautions for safe handling

Advices on safe handling
Use extractor hood (laboratory).
Do not breathe gas/fume/vapor/spray.
Avoid contact with eyes and skin.
Wear personal protection equipment (refer to section 8).
Avoid exposure.
Avoid contact with water.
Provide adequate ventilation.
Measures to prevent fire, aerosol and dust generation
Use extractor hood (laboratory).
If handled uncovered, arrangements with local exhaust ventilation should be used if possible.
Measures required to protect the environment
Avoid release to the environment.
Keep container tightly closed.
Collect spillage.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15°C – 25°C or 30°C depending on climatic conditions.
Storage: Keep container tightly closed and in a well-ventilated place. Keep/Store only in original container. Keep cool. Protect from sunlight. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Protect from moisture. Suitable container/equipment material: Glass Stainless steel Polyethylene
Unsuitable container/equipment material: Alloy, containing copper. Copper.

SECTION 8: Exposure controls/personal protection

Control parameters

Ingredient (Designation)	Source	Country	parameter	Limit value
Acetic acid	NIOSH	US	LTV	25 mg/m³ - 10 ppm
Acetic acid	NIOSH	US	STV	37 (1) mg/m³ - 15 (1) ppm
Acetic acid	OSHA	US	LTV	25 mg/m³ - 10 ppm

Engineering controls

Appropriate engineering controls
Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)
Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection
Eye glasses with side protection

Skin protection
Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact	
Suitable material:	CR (polychloroprene, chloroprene rubber)
Thickness of the glove material:	0,13 mm
Breakthrough time	17 min

By long-term hand contact	
Suitable material:	CR (polychloroprene, chloroprene rubber)
Thickness of the glove material:	-
Breakthrough time	> 480 min

Respiratory protection
Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information
Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls
no data available

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Color:	colorless
(b) Odor:	characteristic
(c) Odor threshold:	no data available

Safety relevant basic data

(d) pH:	2.5 (50 g/l @ 20 °C)
(e) Melting point/freezing point:	17 °C
(f) Initial boiling point and boiling range:	118 °C (1013 hPa)
(g) Flash point:	38.5 °C
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	Flammable liquid and vapor.
(j) Flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapor pressure:	77 hPa (50 °C)
(l) Vapor density:	2.08 (25 °C)
(m) Density:	1.05 g/cm³ (20 °C)
(n) Solubility(ies)	
Water solubility:	603 g/l (25°C)
Soluble (g/L) in Ethanol:	no data available
(o) Partition coefficient: n-octanol/water:	-0.17 (25 °C)
(p) Auto-ignition temperature:	485 °C
(q) Decomposition temperature:	Not applicable
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	1.22 mPa*s (20 °C)
(s) Explosive properties:	Not applicable
(t) Oxidising properties:	Not applicable

Other information

Bulk density:	no data available
Refraction index:	1.3718 (589 nm; 25 °C)
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

SECTION 10: Stability and reactivity

Reactivity

Reactive substance.
Extremely flammable liquid and vapor.
Vapors may form explosive mixtures with air.
Hygroscopic.
Risk of ignition if heated.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions

Danger of explosion:
Peroxides
Perchlorates
Hydrogen peroxide.
Strong oxidizing agents.
Violent reaction with:

Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.
Keep away from:
UV-radiation/sunlight
Contact with metals liberates hydrogen gas.

Incompatible materials:

Incompatible materials:
plastic and rubber
Forms flammable and explosive hydrogen through corrosion of metals.

Hazardous decomposition products

Decomposition products in case of fire: see section 5.

SECTION 11: Toxicological information

Information on toxicological effects

Acute effects

Acute oral toxicity:
LD50: > 3310 mg/kg - Rat - (RTECS)

Acute dermal toxicity:
LD50: > 1060 mg/kg - Rabbit - (IUCLID)

Acute inhalation toxicity:
LC50: 11.4 mg/l - Rat - (National Library of Medicine ChemID Plus (NLM CIP))

Irritant and corrosive effects:

Primary irritation to the skin:
Causes severe skin burns and eye damage.

Irritation to eyes:
Causes serious eye damage.

Irritation to respiratory tract:
Not applicable

Respiratory or skin sensitization
In case of skin contact: not sensitizing
In case of inhalation: not sensitizing

STOT-single exposure
Not applicable

STOT-repeated exposure
Not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
No indication of human carcinogenicity.

IARC Monographs on the Identification of Carcinogenic Hazards to Humans:

Not listed

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.

Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
Not applicable

Other adverse effects
no data available

SECTION 12: Ecological information

Ecotoxicity

Fish toxicity:
LC50: > 300.82 mg/l (96 h) - Oncorhynchus mykiss - OECD 203

Daphnia toxicity:
LC50: 65 mg/l (48 h) - Janssen, C.R., E.Q. Espiritu, and G. Persoone 1993. Evaluation of the new ""Enzymatic Inhibition"" Criterion for Rapid Toxicity Testing with Daphnia magna

EC50: > 300.82 mg/l (48 h) - Daphnia magna - OECD 202

Algae toxicity:
EC50: > 300.82 mg/l (72 h) - ISO 10253

Bacteria toxicity:
no data available

Persistence and degradability
Readily biodegradable (according to OECD criteria).

Bioaccumulative potential
Partition coefficient: n-octanol/water: -0.17 (25 °C)

Mobility in soil:
no data available

Other adverse effects

no data available

SECTION 13: Disposal considerations

Waste treatment methods

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal. Product is an acid. Before disposal it needs to be neutralised.

Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (DOT)

UN-No.:	UN2789
Proper Shipping Name:	ACETIC ACID, GLACIAL
Class(es):	8 (3)
Hazard label(s):	8+3
Packing group:	II
Environmental hazards**:**	No
Marine pollutant:	No
Special precautions for user**:**	

Sea transport (IMDG)

UN-No.:	2789
Proper Shipping Name:	ACETIC ACID, GLACIAL
Class(es):	8 (3)
Hazard label(s):	8+3
Packing group:	II
Environmental hazards**:**	No
Marine pollutant:	No
Special precautions for user**:**	
Segregation group:	1
EmS-No.	F-E S-C

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Air transport (ICAO-TI / IATA-DGR)

UN-No.:	2789
Proper Shipping Name:	ACETIC ACID, GLACIAL
Class(es):	8 (3)
Classification code:	
Hazard label(s):	8+3
Packing group:	II
Special precautions for user:	

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Toxic Substances Control Act (TSCA)
Listed

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

SARA 313 Components

Not listed.

US State Regulations
Massachusetts Right To Know Components
Listed

Pennsylvania Right To Know Components

Listed

New Jersey Right To Know Components

Listed

California Prop. 65 Components

Not listed.

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TDG - Transport of Dangerous Goods
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

Revision date	Version	Print date
12.09.2024	2.1	2024-09-12

Additional information

Indication of changes:	Section 2 If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

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