# SAFETY DATA SHEET

According to US Regulation 29 CFR 1910.1200 (HazCom 2012)

## 1. Identification

**Product identifier:** Acetic Acid, Glacial

**Other means of identification**

**Synonyms:** Ethanoic acid
**Product No.:** 0565, 2502, 2504, 3121, 6003, 6903, 7711, 8817, 9375, 9500, 9502, 9503, 9505, 9506, 9508, 9511, 9513, 9515, 9517, 9522, 9524, 9526, BS03, V155, V190, V193, 37827, 20112

**Recommended restrictions**

**Recommended use:** For Laboratory, Research or Manufacturing Use.
**Restrictions on use:** Not determined.

**Details of the supplier of the safety data sheet**

| | |
|---|---|
| Company Name: | Avantor Performance Materials, LLC |
| Address: | 100 Matsonford Rd, Suite 200<br>Radnor, PA 19087 |
| Telephone: | Customer Service: 855-282-6867 |
| Contact Person: | Product Information Compliance |
| E-mail: | info@avantormaterials.com |

**Emergency telephone number:**

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

## 2. Hazard(s) identification

**Hazard Classification**

**Physical Hazards**

| | |
|---|---|
| Flammable liquids | Category 3 |
| Corrosive to metal | Category 1 |

**Health Hazards**

| | |
|---|---|
| Acute toxicity (Dermal) | Category 4 |
| Acute toxicity (Inhalation - vapor) | Category 4 |
| Skin Corrosion/Irritation | Category 1A |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Specific Target Organ Toxicity - Single Exposure | Category 3[1.] |

**Target Organs**

1. Respiratory tract irritation.

**Environmental Hazards**

| | |
|---|---|
| Acute hazards to the aquatic environment | Category 3 |

**Unknown toxicity - Environment**

| | |
|---|---|
| Acute hazards to the aquatic environment | 0 % |
| Chronic hazards to the aquatic environment | 100 % |

**Label Elements**

**Hazard Symbol:**

**Signal Word:** Danger

**Hazard Statement:**
Flammable liquid and vapor.
May be corrosive to metals.
Harmful in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause respiratory irritation.
Harmful to aquatic life.

**Precautionary Statements**

**Prevention:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Keep only in original packaging.

**Response:** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. Call a POISON CENTER/doctor if you feel unwell. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. Absorb spillage to prevent material damage.

**Storage:** Store in a well-ventilated place. Keep cool. Store locked up. Store in a corrosion-resistant container with a resistant inner liner. Keep container tightly closed.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):** None.

## 3. Composition/information on ingredients

**Substances**

| Chemical Identity | CAS number | Content in percent (%)* |
|---|---|---|
| Acetic acid | 64-19-7 | 99 - 100% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. Never give liquid to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:** Move to fresh air. Call a physician or poison control center immediately. Apply artificial respiration if victim is not breathing If breathing is difficult, give oxygen.

**Skin Contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** Irritating to eyes, respiratory system and skin.

**Hazards:** None known.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Treat symptomatically. Symptoms may be delayed.

## 5. Fire-fighting measures

**General Fire Hazards:** In case of fire and/or explosion do not breathe fumes.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media:** Avoid water in straight hose stream; will scatter and spread fire.

**Specific hazards arising from the chemical:** Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Evacuate area.

**Methods and material for containment and cleaning up:** In case of leakage, eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

**Environmental Precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling:** DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Ground and bond container and receiving equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using the product. Use caution when adding this material to water. See Section 8 of the SDS for Personal Protective Equipment. Avoid contact with eyes. Avoid contact with skin.

**Conditions for safe storage, including any incompatibilities:** Keep away from food, drink and animal feeding stuffs. Do not store in metal containers. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids. Keep container tightly closed. Store in cool, dry place. Store in a well-ventilated place.

## 8. Exposure controls/personal protection

### Control Parameters

#### Occupational Exposure Limits

| Chemical Identity | Type | Exposure Limit Values | Source |
|---|---|---|---|
| Acetic acid | TWA | 10 ppm | US. ACGIH Threshold Limit Values (2011) |
| | STEL | 15 ppm | US. ACGIH Threshold Limit Values (2011) |
| | STEL | 15 ppm 37 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | REL | 10 ppm 25 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |

| | | | | |
|---|---|---|---|---|
| | PEL | 10 ppm | 25 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| | TWA | 10 ppm | 25 mg/m3 | US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989) |
| | TWA | 10 ppm | 25 mg/m3 | US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008) |
| | ST ESL | | 15 µg/m3 | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013) |
| | AN ESL | | 25 µg/m3 | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010) |
| | ST ESL | | 6 ppb | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013) |
| | AN ESL | | 10 ppb | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010) |
| | Ceiling | 40 ppm | | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010) |
| | STEL | 15 ppm | 37 mg/m3 | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010) |
| | TWA PEL | 10 ppm | 25 mg/m3 | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010) |

**Appropriate Engineering Controls** No data available.

**Individual protection measures, such as personal protective equipment**

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

**Skin Protection**
**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

## 9. Physical and chemical properties

**Appearance**

| | |
|---|---|
| **Physical state:** | Liquid |
| **Form:** | Liquid |
| **Color:** | Colorless |
| **Odor:** | Strong pungent vinegar-like odor |
| **Odor threshold:** | No data available. |
| **pH:** | 2.4 (1.0 M aqueous solution) |
| **Melting point/freezing point:** | 16.4 °C |
| **Initial boiling point and boiling range:** | 117.9 °C |
| **Flash Point:** | 39.4 °C (Closed Cup) |
| **Evaporation rate:** | 0.97 (butyl acetate=1) |
| **Flammability (solid, gas):** | Class II Combustible Liquid |
| **Upper/lower limit on flammability or explosive limits** | |
| **Flammability limit - upper (%):** | 19.9 %(V) |
| **Flammability limit - lower (%):** | 4 %(V) |
| **Explosive limit - upper (%):** | No data available. |
| **Explosive limit - lower (%):** | No data available. |
| **Vapor pressure:** | 2.093 kPa (25 °C) |
| **Vapor density:** | 2.1 (Air=1) |
| **Density:** | 1.05 g/ml (20 °C) |
| **Relative density:** | 1.05 (20 °C) |
| **Solubility(ies)** | |
| **Solubility in water:** | Miscible |
| **Solubility (other):** | No data available. |
| **Partition coefficient (n-octanol/water):** | -0.17 |
| **Auto-ignition temperature:** | 426 °C |
| **Decomposition temperature:** | No data available. |
| **Viscosity:** | No data available. |

**Other information**

| | |
|---|---|
| **Liquid conductivity:** | 0.05 µS/cm (0 °C) |
| **Molecular weight:** | 60.05 g/mol ($C_2H_4O_2$) |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity:** | No dangerous reaction known under conditions of normal use. |
| **Chemical Stability:** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions:** | Hazardous polymerization does not occur. |
| **Conditions to avoid:** | Heat, sparks, flames. Moisture. Contact with incompatible materials. |
| **Incompatible Materials:** | Strong alkalis. Strong oxidizing agents. |
| **Hazardous Decomposition Products:** | Oxides of Carbon. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation:** | Harmful if inhaled. May cause respiratory irritation. |

**Skin Contact:** Harmful in contact with skin. Causes severe skin burns.

**Eye contact:** Causes serious eye damage.

**Ingestion:** May be harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

**Oral**
**Product:** LD 50 (Rat): 3,310 - 3,530 mg/kg

**Dermal**
**Product:** LD 50 (Rabbit) 1,060 mg/kg

**Inhalation**
**Product:** LC 50 (Rat, 4 h) 11.4 mg/l
LOAEL (Rat, 4 h): 450 ppm

**Repeated dose toxicity**
**Product:** No data available.

**Skin Corrosion/Irritation**
**Product:** Causes severe skin burns.

**Serious Eye Damage/Eye Irritation**
**Product:** Causes serious eye damage.

**Respiratory or Skin Sensitization**
**Product:** Not a skin nor a respiratory sensitizer.

**Carcinogenicity**
**Product:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**
No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**
No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**
No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**
**Product:** No data available.

**In vivo**
**Product:** No data available.

**Reproductive toxicity**
**Product:** No components toxic to reproduction

**Specific Target Organ Toxicity - Single Exposure**
**Product:** Respiratory tract irritation.

**Specific Target Organ Toxicity - Repeated Exposure**
**Product:** None known.

**Target Organs**
Specific Target Organ Toxicity - Single Exposure: Respiratory tract irritation.

**Aspiration Hazard**
**Product:** Not classified

**Other effects:** None known.

## 12. Ecological information

**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**
**Product:** LC 50 (Bluegill (Lepomis macrochirus), 96 h): 75 mg/l

**Aquatic Invertebrates**
**Product:** EC 50 (Water flea (Daphnia magna), 48 h): 65 mg/l

**Chronic hazards to the aquatic environment:**

**Fish**
**Product:** No data available.

**Aquatic Invertebrates**
**Product:** No data available.

**Toxicity to Aquatic Plants**
**Product:** No data available.

**Persistence and Degradability**

**Biodegradation**
**Product:** Expected to be readily biodegradable.

**BOD/COD Ratio**
**Product:** No data available.

**Bioaccumulative potential**
**Bioconcentration Factor (BCF)**
**Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**
**Product:** Log Kow: -0.17

**Mobility in soil:** The product is water soluble and may spread in water systems.

**Other adverse effects:** Harmful to aquatic organisms.

## 13. Disposal considerations

**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

| | |
|---|---|
| UN Number: | UN 2789 |
| UN Proper Shipping Name: | Acetic acid, glacial |
| Transport Hazard Class(es) | |
| Class: | 8 |
| Label(s): | 8, 3 |
| Packing Group: | II |
| Marine Pollutant: | No |
| Special precautions for user: | Keep away from alkalis. |

**IMDG**

| | |
|---|---|
| UN Number: | UN 2789 |
| UN Proper Shipping Name: | ACETIC ACID, GLACIAL |
| Transport Hazard Class(es) | |
| Class: | 8 |
| Label(s): | 8, 3 |
| EmS No.: | F-E, S-C |
| Packing Group: | II |
| Marine Pollutant: | No |
| Special precautions for user: | Keep away from alkalis. |

**IATA**

| | |
|---|---|
| UN Number: | UN 2789 |
| Proper Shipping Name: | Acetic acid, glacial |
| Transport Hazard Class(es): | |
| Class: | 8 |
| Label(s): | 8, 3 |
| Packing Group: | II |
| Marine Pollutant: | No |
| Special precautions for user: | Keep away from alkalis. |

## 15. Regulatory information

**US Federal Regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

| Chemical Identity | Reportable quantity |
|---|---|
| Acetic acid | 5000 lbs. |

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Flammable liquids

Corrosive to metal
Acute toxicity
Skin Corrosion/Irritation
Serious Eye Damage/Eye Irritation
Specific Target Organ Toxicity - Single Exposure

**SARA 302 Extremely Hazardous Substance**
None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

| Chemical Identity | Reportable quantity |
|---|---|
| Acetic acid | 5000 lbs. |

**SARA 311/312 Hazardous Chemical**

| Chemical Identity | Threshold Planning Quantity |
|---|---|
| Acetic acid | 10000 lbs. |

**SARA 313 (TRI Reporting)**
None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**
None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):**

| Chemical Identity | Reportable quantity |
|---|---|
| Acetic acid | Reportable quantity: 5000 lbs. |

**US State Regulations**

**US. California Proposition 65**
No ingredient requiring a warning under CA Prop 65.

**US. New Jersey Worker and Community Right-to-Know Act**

| Chemical Identity |
|---|
| Acetic acid |

**US. Massachusetts RTK - Substance List**

| Chemical Identity |
|---|
| Acetic acid |

**US. Pennsylvania RTK - Hazardous Substances**

| Chemical Identity |
|---|
| Acetic acid |

**US. Rhode Island RTK**

| Chemical Identity |
|---|
| Acetic acid |

**International regulations**

**Montreal protocol**
Not applicable

**Stockholm convention**
Not applicable

**Rotterdam convention**
Not applicable

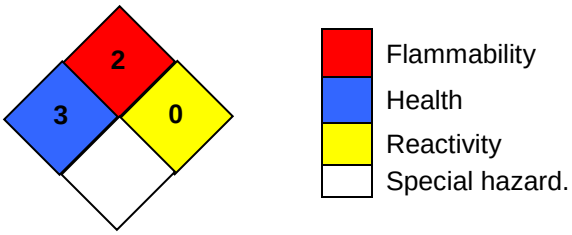
**Kyoto protocol**
Not applicable

**Inventory Status:**

| | |
|---|---|
| Australia AICS: | On or in compliance with the inventory |
| Canada DSL Inventory List: | On or in compliance with the inventory |
| China Inv. Existing Chemical Substances: | On or in compliance with the inventory |
| Japan (ENCS) List: | On or in compliance with the inventory |
| Japan ISHL Listing: | On or in compliance with the inventory |
| Korea Existing Chemicals Inv. (KECI): | On or in compliance with the inventory |
| Mexico INSQ: | On or in compliance with the inventory |
| New Zealand Inventory of Chemicals: | On or in compliance with the inventory |
| Philippines PICCS: | On or in compliance with the inventory |
| Taiwan Chemical Substance Inventory: | On or in compliance with the inventory |
| US TSCA Inventory: | On or in compliance with the inventory |
| EINECS, ELINCS or NLP: | On or in compliance with the inventory |

## 16.Other information, including date of preparation or last revision

**NFPA Hazard ID**




Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

| | |
|---|---|
| **Issue Date:** | 12-01-2020 |
| **Revision Information:** | Not relevant. |
| **Version #:** | 2.0 |
| **Source of information:** | Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate. |
| **Further Information:** | No data available. |

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