AG Scientific
Your Ally in Discovery

Safety Data Sheet

Section 1: Product & Company Identification

Product Name:	Acetic Acid, Glacial
Product #:	A-2181
Synonyms:	
Supplier:	AG Scientific Holdings, LLC 9950 Scripps Lake Drive, Suite 104 San Diego, CA 92131 Tele# + 858-452-9925
Emergency Tele#:	ChemTel, Tele# in USA 1-800-255-3924, International 1-813-248-0585

Section 2: Composition / Information on Ingredients

Component	CAS #	EC #	% Composition
Acetic Acid, Glacial	64-19-7		

Section 3: Hazards Identification

Symbols

HMIS Rating

Health Hazard	Chronic Health Hazard	Flammability	Physical Hazard
3	0	2	0

NFPA Rating

Health Hazard	Fire Hazard	Reactivity Hazard
3	2	0

Section 4: First Aid Measures

General Overview:	Danger! Consult a doctor and show this safety data sheet.
Inhalation:	Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

Skin:	Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.
Eyes:	Flush with copious amounts of water for at least 15 minutes. Consult a doctor.
Ingestion:	Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.
	See section 11 for more detailed information on health effects & symptoms.

SECTION 5: Fire Fighting Measures

Flammability of the product:	Flammable liquid
Extinguishing Media:	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
Hazardous thermal (de)composition products:	Carbon oxides
Special Fire Fighting Procedures:	Wear suitable protective clothing to prevent contact with skin and eyes. Use a self-contained breathing apparatus.
Flash Point:	40.0°C

Section 6: Accidental Release Measures

Personal Precautions:	Do not take action without suitable protective clothing – see Section 8. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust, or gas.
Environmental Precautions:	Do not let product enter drains.
Methods for Clean-up:	Cover spillage with suitable absorbent material. Using non-spark tools, sweep up material and place in an appropriate container. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete. Hold all material for appropriate disposal as described under Section 13.

SECTION 7: Handling & Storage

Storage:	Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Keep in a dry place. Moisture sensitive. Storage class (TRGS 510): Flammable liquids. Recommended storage temperature: Room Temperature
Handling:	Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin, and clothing. Avoid the formation of

	dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

SECTION 8: Exposure controls / Personal Protection

Respiratory Protection:	 Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Skin and Body:	  Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Wear appropriate protective clothing. Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of dangerous substance at the specific workplace.
Eyes:	 Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Ventilation/Engineering Measures:	Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.
Hygiene:	The usual precautionary measures for handling chemicals should be followed.

Components with Workplace Control Parameters:	Acetic Acid
	• ACGIH TLV
	  ○ TWA: 10 ppm
	  ○ STEL: 15 ppm
	• OSHA PEL
	  ○ (Vacated) TWA: 10 ppm
	  ○ (Vacated) TWA: 25 mg/m^3
	  ○ TWA: 10 ppm
	  ○ TWA: 25 mg/m^3
	• NIOSH IDLH
	  ○ IDLH: 50 ppm
	  ○ TWA: 10 ppm
	  ○ TWA: 25 mg/m^3
	  ○ STE: 15 ppm
	• Quebec
	  ○ TWA: 10 ppm
	  ○ TWA: 25 mg/m^3
	  ○ STEL: 15 ppm
	• Mexico OEL (TWA)
	  ○ TWA: 10 ppm
	  ○ TWA: 25 mg/m^3
	  ○ STE: 15 ppm
	  ○ STEL: 37 $mg/^3$
	• Ontario TWAEV
	  ○ TWA: 10 ppm
	  ○ STEL: 15 ppm

SECTION 9: Physical and Chemical Properties

Appearance & Odor:	Colorless, odorless liquid
Formula:	$C_2H_4O_2$
Molecular Wt.	60.05
Melting Pt.	No data available
Boiling Pt.	117 – 118°C
Relative Density at 25°C:	1.049 g/cm^3
Vapor Pressure:	73.3 hPa at 50.0°C 15.2 hPa at 20.0°C
Evaporation Rate:	No data available
Vapor Density:	No data available

Viscosity at 25°C:	1.53 mPa.s
pH:	2.4 at 60.05 g/L
Surface Tension at 10°C:	28.8 mN/m
Solubility:	Water
Flash Point:	40.0°C
Autoignition Temp:	485.0°C
Upper/Lower Flammability or Explosive Limits:	Upper Explosion Limit: 19.9%(V) Lower Explosion Limit: 4%(V)

SECTION 10: Stability and Reactivity

Stability:	Stable under recommended storage conditions.
Hazardous decomposition products:	Carbon monoxide (CO), carbon dioxide (CO2). Thermal decomposition can lead to release of irritating gases and vapors.
Materials to Avoid:	Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, e.g. potassium permanganate, Amines, Alcohols, Nitric acid
Conditions to avoid:	Heat, flames, sparks

SECTION 11: Toxicological Information

RTECS#:	N/A
ACUTE Toxicity:	LD50 Oral = 3,310 mg/kg (Rat) LD50 Dermal = 1,060 mg/kg (Rabbit) LD50 Inhalation: 11.4 mg/L (Rat) 4 h
CHRONIC Toxicity:	There are no known carcinogenic chemicals in this product.
Chronic Exposure: **Carcinogen:** **Mutagen:** **Teratogen:** **Reproductive:**	IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC. AGGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, potential human carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as known or anticipated human carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as known or potential human carcinogen by OSHA. EPA: No classification on carcinogenic data is available from EPA

SECTION 12: Ecological Information

Ecotoxicity:	Freshwater Fish: • Pimephales promelas: LC50 = 88 mg/L/96 h • Lepomis macrochirus: LC50 = 75 mg/L/96 h Microtox: • Photobacterium phosphoreum: EC50 = 8.8 mg/L/15 min • Photobacterium phosphoreum: EC50 = 8.8 mg/L/25 min • Photobacterium phosphoreum: EC50 = 8.8 mg/L/5 min Water Flea: • EC50 = 95 mg/L/24 h
Mobility:	log Pow = -0.2
Persistence and degradability:	No data available
Bioaccumulative potential:	No data available
Other adverse effects:	No data available
Corrosivity Characteristic:	No data available
General Notes:	N/A

SECTION 13: Disposal Considerations

Residue Waste or Unused product:	Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.
Contaminated Packaging:	Dispose of container and unused contents in accordance with federal, state, and local regulations.

SECTION 14: Transportation Information

UN ID#:	2789
ADR / RID (LAND):	N/A
DOT regulations:	UN#: 2789 Proper Shipping Name: Acetic Acid, Glacial Hazard Class: 8 (3) Packaging Group: II
IMDG/IMO (SEA):	UN#: 2789 Proper Shipping Name: Acetic Acid, Glacial Hazard Class: 8 (3) Packaging Group: II

IATA/DGR (AIR):	UN#: 2789 Proper Shipping Name: Acetic Acid, Glacial Hazard Class: 8 (3) Packaging Group: II
Special Provisions:	N/A

SECTION 15: Regulatory Information

Health Phrases:	Danger! H226 Flammable liquid and vapour H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
Risk Phrases:	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 P260 Avoid breathing dust/fume/gas/mist/vapors/spray. P264 Wash skin thoroughly after handling P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 Wear respiratory protection P285 In case of inadequate ventilation wear respiratory protection
Safety Phrases:	P301+ P330+ P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P303+ P361+ P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. P304 + P340 IF INHALED: If breathing is difficult, 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 or doctor/ physician. P321 Specific treatment (see. on this label). P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. P362 + P364 Take off contaminated clothing and wash before reuse. P363 Wash contaminated clothing before reuse P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

	P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P501 Dispose of contents/ container to an approved waste disposal plant.
EU Regulations:	N/A
US Regulations:	TSCA: Listed California Proposition 65: No products were found Massachusetts State Right to Know: Listed New Jersey State Right to Know: Listed Pennsylvania State Right to Know: Listed
U.S. Federal Regulations:	SARA 302/304 emergency planning and notification: No products were found. SARA 311/312 MSDS distribution-chemical inventory-hazard identification: Acute Health Hazard, Chronic Health Hazard, Fire Hazard SARA 313 toxic chemicals notification and release reporting: No products were found. Clean Water Act: Acetic Acid • Hazardous substance • CWA Reportable Quantities: 5,000 lb CERCLA: This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) • Hazardous Substances RQs: 5,000 lb OSHA: Flammable liquids (Cat. 3), Skin corrosion (Cat. 1A), Skin sensitization (Cat. 1), Respiratory sensitization (Cat. 1)
WHMIS (Canada):	DSL: Listed

SECTION 16: Other Information

LIABILITY STATEMENT: *The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. AG Scientific shall not be held liable for any damages resulting from handling or from contact with the above product. AG Scientific products are for research purposes only. Not for human use or consumption.*