GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
	Health Hazard 3 Fire Hazard 2 Reactivity 0	 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Bromine-Sodium Acetate TS**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	Not available.
Synonym	Not available.
Chemical Name	Not applicable.
Chemical Family	No available
Chemical Formula	Not applicable.
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	B-2894
CAS#	Mixture.
RTECS	Not applicable.
TSCA	TSCA 8(b) inventory: Acetic acid; Sodium acetate anhydrous; Bromine
CI#	Not applicable.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m^3)**	**STEL (mg/m^3)**	**CEIL (mg/m^3)**	**% by Weight**
1) Acetic acid	64-19-7	10	15		85.7
2) Sodium acetate anhydrous	127-09-3				9.52
3) Bromine	7726-95-6	0.1	0.2		4.76

Toxicological Data on Ingredients

Acetic acid:
ORAL (LD50): Acute: 3310 mg/kg [Rat]. 4960 mg/kg [Mouse]. 3530 mg/kg [Rat].
DERMAL (LD50): Acute: 1060 mg/kg [Rabbit].
VAPOR (LC50): Acute: 5620 ppm 1 hours [Mouse].

Bromine:
ORAL (LD50): Acute: 3100 mg/kg [Mouse]. 4160 mg/kg [Rabbit]. 2600 mg/kg [Rat].

Sodium Acetate:
Acute oral toxicity (LD50): 3530 mg/kg [Rat].
Acute dermal toxicity (LD50): >10000 mg/kg [Rabbit].
Acute toxicity of the dust (LC50): >30000 mg/m^3 1 hours [Rat].

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Section 3. Hazards Identification

Potential Acute Health Effects	Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive), of inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Potential Chronic Health Effects	Hazardous in case of skin contact (irritant), of ingestion, of inhalation. **CARCINOGENIC EFFECTS**: Classified 4 (No evidence.) by NTP, None. by OSHA, None. by NIOSH [Bromine]. **MUTAGENIC EFFECTS**: Mutagenic for mammalian somatic cells. [Acetic acid]. Mutagenic for bacteria and/or yeast. [Acetic acid]. **TERATOGENIC EFFECTS**: Not available. **DEVELOPMENTAL TOXICITY**: Not available. The substance is toxic to mucous membranes. The substance may be toxic to kidneys, liver, cardiovascular system, skin, central nervous system (CNS), teeth, thyroid. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	The lowest known value is 463°C (865.4°F) (Acetic acid).
Flash Points	The lowest known value is CLOSED CUP: 39°C (102.2°F). OPEN CUP: 43°C (109.4°F). (Acetic acid)
Flammable Limits	The greatest known range is LOWER: 4% UPPER: 19.9% (Acetic acid)
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of reducing materials, of combustible materials, of organic materials, of metals. Non-flammable in presence of shocks, of acids, of alkalis, of moisture.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

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Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards	Reacts with metals to produces flammable hydrogen gas. It will ignite on contact with potassium-tert-butoxide. A mixture of ammonium nitrate and acetic acid ignites when warmed, especially if warmed. (Acetic acid)
Special Remarks on Explosion Hazards	Acetic acid vapors may form explosive mixtures with air. Reactions between acetic acid and the following materials are potentially explosive: 5-azidotetrazole, bromine pentafluoride, chromium trioxide, hydrogen peroxide, potassium permanganate, sodium peroxide, and phorphorus trichloride. Dilute acetic acid and dilute hydrogen can undergo an exothermic reaction if heated, forming peracetic acid which is explosive at 110 degrees C. Reaction between chlorine trifluoride and acetic acid is very violent, sometimes explosive. (Acetic acid)

Section 6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: **Neutralize the residue with a dilute solution of sodium carbonate.**
Large Spill	Flammable liquid. Corrosive liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. **Neutralize the residue with a dilute solution of sodium carbonate.** Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	**Acetic acid** TWA: 10 STEL: 15 (ppm) [Australia] TWA: 25 STEL: 27 (mg/m^3) [Australia] TWA: 10 STEL: 15 (ppm) from NIOSH TWA: 25 STEL: 37 (mg/m^3) from NIOSH TWA: 10 STEL: 15 (ppm) [Canada] TWA: 26 STEL: 39 (mg/m^3) [Canada] TWA: 25 STEL: 37 (mg/m^3) TWA: 10 STEL: 15 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 10 (ppm) from OSHA (PEL) [United States] TWA: 25 (mg/m^3) from OSHA (PEL) [United States]

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Bromine
TWA: 0.66 STEL: 1.3 (mg/m^3) from ACGIH (TLV) [United States]
TWA: 0.1 STEL: 0.2 (ppm) from ACGIH (TLV) [United States]
TWA: 0.1 from OSHA (PEL) [United States]
TWA: 0.7 (mg/m^3) from OSHA (PEL) [United States]
TWA: 0.66 STEL: 2 (mg/m^3) [United Kingdom (UK)]
TWA: 1 STEL: 0.3 (ppm) [United Kingdom (UK)]

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	**Odor**	Not available.
Molecular Weight	Not applicable.	**Taste**	Not available.
pH (1% soln/water)	Acidic.	**Color**	Reddish-brown.

Boiling Point	The lowest known value is 58.78°C (137.8°F) (Bromine). Weighted average: 114.98°C (239°F)
Melting Point	May start to solidify at 16.6°C (61.9°F) based on data for: Acetic acid. Weighted average: 15.35°C (59.6°F)
Critical Temperature	The lowest known value is 315°C (599°F) (Bromine).
Specific Gravity	Weighted average: 1.12 (Water = 1)
Vapor Pressure	The highest known value is 23.3 kPa (@ 20°C) (Bromine). Weighted average: 2.65 kPa (@ 20°C)
Vapor Density	The highest known value is 7.1 (Air = 1) (Bromine). Weighted average: 2.33 (Air = 1)
Volatility	Not available.
Odor Threshold	The highest known value is 0.48 ppm (Acetic acid) Weighted average: 0.46 ppm
Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, diethyl ether, acetone.
Solubility	Easily soluble in cold water, hot water. Soluble in diethyl ether, acetone.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Heat, ignition sources, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis.
Corrosivity	Highly corrosive in presence of aluminum, of zinc, of stainless steel(304), of stainless steel(316). Corrosive in presence of copper. Non-corrosive in presence of glass.
Special Remarks on Reactivity	Reacts violently with strong oxidizing agents, acetaldehyde, and acetic anhydride. Material can react with metals, strong bases, amines, carbonates, hydroxides, phosphates, many oxides,cyanides, sulfides, chromic acid, nitric acid, hydrogen peroxide, carbonates. ammonium nitrate, ammonium thiosulfate, chlorine trifluoride, chlorosulfonic acid, perchloric acid, permanganates, xylene, oleum, potassium hydroxide, sodium hydroxide, phosphorus isocyanate, ethylenediamine, ethylene imine. (Acetic acid)
Special Remarks on Corrosivity	Moderate corrosive effect on bronze. No corrosion data on brass (Acetic acid)
Polymerization	Will not occur.

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Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 2600 mg/kg [Rat]. (Bromine). Acute dermal toxicity (LD50): 1060 mg/kg [Rabbit]. (Acetic acid).
Chronic Effects on Humans	**CARCINOGENIC EFFECTS**: Classified 4 (No evidence.) by NTP, None. by OSHA, None. by NIOSH [Bromine]. **MUTAGENIC EFFECTS**: Mutagenic for mammalian somatic cells. [Acetic acid]. Mutagenic for bacteria and/or yeast. [Acetic acid]. Contains material which may cause damage to the following organs: kidneys, liver, cardiovascular system, skin, central nervous system (CNS), teeth, thyroid.
Other Toxic Effects on Humans	Very hazardous in case of skin contact (irritant), of ingestion. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive), of inhalation (lung corrosive).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May affect genetic material and may cause reproductive effects based on animal data. No human data found. (Acetic acid)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Extremely irritating and corrosive. Causes skin irritation (reddening and itching, inflammation). May cause blistering , tissue damage and burns. Eyes: Extremely irritating and corrosive. Causes eye irritation, lacrimation, redness, and pain. May cause burns, blurred vision, conjunctivitis, conjunctival and corneal destruction and permanent injury. Inhalation: Causes severe respiratory tract irritation. Affects the sense organs (nose, ear, eye, taste), and blood. May cause chemical pneumonitis, bronchitis, and pulmonary edema. Severe exposure may result in lung tissue damage and corrosion (ulceration) of the mucous membranes. Inhalation may also cause rhinitis, sneezing, coughing, oppressive feeling in the chest or chest pain, dyspnea, wheezing, tachypnea, cyanosis, salivation, nausea, giddiness, muscular weakness. Ingestion: Moderately toxic. Corrosive. Causes gastrointestinal tract irritation (burning and pain of the mouth, throat, and abdomen, coughing, ulceration, bleeding, nausea, abdomial spasms, vomiting, hematemesis, diarrhea. May Also affect the liver (impaired liver function), behavior (convulsions, giddines, muscular weakness), and the urinary system - kidneys (Hematuria, Albuminuria, Nephrosis, acute renal failure, acute tubular necrosis). May also cause dyspnea or asphyxia. May also lead to shock, coma and death. Chronic Potential Health Effects: Chronic exposure via ingestion may cause blackening or erosion of the teeth and jaw necrosis, pharyngitis, and gastritis. It may also behavior (similar to acute ingestion), and metabolism (weight loss). Chronic exposure via inhalation may cause asthma and/or bronchitis with cough, phlegm, and/or shortness of breath . It may also affect the blood (decreased leukocyte count), and urinary system (kidneys). Repeated or prolonged skin contact may cause thickening, blackening, and cracking of the skin. (Acetic acid)

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	Not available.

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Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification CLASS 3: Flammable liquid.
Class 8: Corrosive material

Identification : Acetic acid, glacial (Acetic acid) UNNA: 2789 PG: II

Special Provisions for Transport Poison-inhalation hazard, Zone A (Bromine)

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
Connecticut hazardous material survey.: Acetic acid; Bromine
Illinois toxic substances disclosure to employee act: Acetic acid; Bromine
Illinois chemical safety act: Acetic acid; Bromine
New York release reporting list: Acetic acid; Bromine
Rhode Island RTK hazardous substances: Acetic acid; Bromine
Pennsylvania RTK: Acetic acid; Bromine
Minnesota: Acetic acid; Bromine
Massachusetts RTK: Acetic acid; Bromine
Massachusetts spill list: Acetic acid; Bromine
New Jersey: Acetic acid; Bromine
New Jersey spill list: Acetic acid; Bromine
Louisiana RTK reporting list: Bromine
Louisiana spill reporting: Acetic acid
California Director's List of Hazardous Substances: Bromine; Acetic acid
TSCA 8(b) inventory: Acetic acid; Sodium acetate anhydrous; Bromine
SARA 302/304/311/312 extremely hazardous substances: Bromine
SARA 313 toxic chemical notification and release reporting: Bromine 4.76%
CERCLA: Hazardous substances.: Acetic acid: 5000 lbs. (2268 kg);

California Proposition 65 Warnings
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications

WHMIS (Canada) CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
CLASS E: Corrosive liquid.

DSCL (EEC)
R10- Flammable.
R34- Causes burns.
S23- Do not breathe gas/fumes/vapour/spray
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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HMIS (U.S.A.)

Health Hazard	3
Fire Hazard	2
Reactivity	0
Personal Protection	

National Fire Protection Association (U.S.A.)

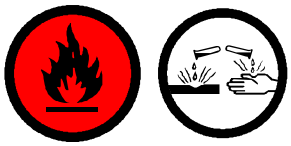
Health

Flammability

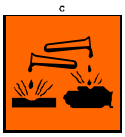
Reactivity

Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)

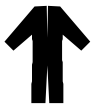


TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

Gloves.



Full suit.

Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Face shield.

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Section 16. Other Information

MSDS Code	**B294S**
References	Not available.
Other Special Considerations	Not available.

Validated by Sonia Owen on 12/1/2006.

Verified by Sonia Owen.

Printed 12/1/2006.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.