

Burdick & Jackson

Material Safety Data Sheet

0.1% Acetic Acid in Acetonitrile

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 0.1% Acetic Acid in Acetonitrile
OTHER/GENERIC NAMES: 0.1% Acetic Acid in Acetonitrile

PRODUCT USE: Laboratory and Research and Development

MANUFACTURER: Honeywell, Burdick & Jackson
1953 South Harvey Street
Muskegon, MI 49442

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-5:00pm Eastern Time)
1-800-368-0050

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
1-800-498-5701 (health emergencies only)
602-365-4980 (Honeywell - International)
For Transportation Emergencies:
1-800-424-9300 (CHEMTREC - Domestic)
001-703-527-3887 (CHEMTREC - International)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Acetonitrile	75-05-8	99.9
Acetic Acid	64-19-7	0.1

Trace impurities and additional material names not listed above may also appear in Section 15 toward the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Flammable liquid and vapor. Toxic. Clear colorless liquid with sweet, ether-like odor. Causes irritation to the eyes, skin and respiratory tract. Can cause convulsions. Can cause fatal cyanide poisoning.

POTENTIAL HEALTH HAZARDS

SKIN: May be absorbed through the skin producing effects similar to those described for inhalation.

EYES: May cause severe irritation with redness and pain. Corneal damage may occur and is usually reversible.

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INHALATION: Causes respiratory tract irritation. High concentrations can cause headache, nausea, vomiting, respiratory depression, weakness, irregular heart beat, abdominal pain, convulsions, shock, unconsciousness and death depending on concentration and length of exposure.

INGESTION: May cause gastric system irritation and symptoms similar to those described for inhalation.

DELAYED EFFECTS: Chronic exposure may cause liver, kidney and central nervous system damage.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section.			

4. FIRST AID MEASURES

SKIN: Immediately rinse affected area with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Launder contaminated clothing before reuse.

EYES: Immediately flush with water, continuing for at least 15 minutes. Get immediate medical attention.

INHALATION: Remove to fresh air. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen provided a qualified operator is available. Get immediate medical attention.

INGESTION: If conscious, rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel.
Get immediate medical attention.

ADVICE TO PHYSICIAN: Acetonitrile is slowly metabolized to cyanide. Patients with significant exposures should be observed for signs of cyanide poisoning and treated accordingly.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: <67°F (<19°C) (Solution)
FLASH POINT METHOD: TAG Closed Cup
AUTOIGNITION TEMPERATURE: 975°F (524°C) (Acetonitrile)
UPPER FLAMMABLE LIMIT (volume % in air): 16% (Acetonitrile)
LOWER FLAMMABLE LIMIT (volume % in air): 3% (Acetonitrile)
FLAME PROPAGATION RATE (solids): Not Applicable
OSHA FLAMMABILITY CLASS: Flammable Liquid.

EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, or alcohol resistant foam; Water spray best suited for cooling down containers.

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UNUSUAL FIRE AND EXPLOSION HAZARDS:

Dangerous fire hazard when exposed to heat or flame. Product emits toxic fumes under fire conditions. Sealed containers may rupture when heated. Above the flash point, vapor/air mixtures are explosive within flammable limits noted above. Vapor is heavier than air and danger of flashback exists.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Wear full protective clothing and NIOSH approved self-contained breathing apparatus with full facepiece. Fire may produce toxic and flammable cyanide fumes. Do not allow runoff from fire fighting efforts to enter sewers or waterways.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Eliminate sources of ignition. Isolate the spill area. Use non-sparking tools and equipment. Stop leak in a safe and practical manner. Contain and recover liquid when possible. Absorb small spills with inert, non-combustible material and place in an approved chemical waste container. Dike large spills with inert noncombustible material and transfer liquid into an approved chemical waste disposal container. Do not allow spilled material to enter into sewers or waterways. Disperse vapors with water spray.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Use with adequate explosion proof ventilation. Use non-sparking tools and ground containers during transfers to avoid static sparks. Keep away from heat, sparks and flame. Do not breathe vapors. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke in the work area. Thoroughly wash after handling.

STORAGE RECOMMENDATIONS:

Store the product in a cool, dry, well ventilated area suitable for flammable liquids. (OSHA 29 CFR 1910.0506) Protect from temperature extremes and sunlight. Store away from incompatible substances and in accordance with 29 CFR 1910.0506. Avoid acids, bases, oxidizers, explosives, nitrogen-fluorine compounds, sulfites, perchlorates, reducing agents and plastics. Protect containers from physical damage. Empty containers may be hazardous as they contain residual product and/or fumes and vapors. Observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide general or local exhaust ventilation systems to maintain airborne concentrations below exposure limits. Use explosion-proof ventilation equipment. Use of local exhaust and/or a fume hood is recommended.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

Wear chemically protective gloves, boots and apron, as appropriate to prevent skin contact. Showering after work is recommended.

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EYE PROTECTION:

Wear protective eyeglasses or chemical safety goggles as needed. Use a full-face shield if liquid contact is possible. Refer to OSHA eye and face-protection regulations (29 CFR 1910.0533).

RESPIRATORY PROTECTION:

Not required for properly ventilated areas. If there is potential for inhalation of vapor or mist, ventilation and other forms of engineering controls are the preferred means of controlling exposures. Respiratory protection may be appropriate for non-routine or emergency events, if so use an appropriate NIOSH approved respirator. The respirator must be selected based on contamination levels and use conditions found in the workplace. Use conditions must not exceed the working limits of the respirator. The respirator must be approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.0534.

ADDITIONAL RECOMMENDATIONS:

Safety showers and eyewash stations should be positioned convenient to the work area. Wear protective clothing, boots, faceshield and hat, cleaned daily, if exposure to liquid (splashing etc.) is possible. Separate contaminated work clothes from street clothes. Launder contaminated clothing before reuse.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA Z-1 PEL</u>	<u>NIOSH</u>
Acetonitrile	20 ppm (Skin)*	40 ppm	REL: 20 ppm 10 hr day/40 hr week. REL: 34 mg/m ³ 10 hr day/40 hr week. IDLH: 500 ppm
Acetic Acid	10 ppm 15 ppm (STEL)	10 ppm	NA

* Skin designation: Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA Z-1 PEL</u>	<u>NIOSH</u>
Hydrogen Cyanide	4.7 ppm ceiling (skin)*	10 ppm (skin) 11 mg/m ³	REL: 4.7 ppm STEL (skin). REL: 5 mg/m ³ . IDLH: 50 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, Colorless
PHYSICAL STATE:	Liquid
MOLECULAR WEIGHT:	Not applicable
CHEMICAL FORMULA:	Mixture
ODOR:	Sweet ether like odor

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SPECIFIC GRAVITY (water = 1.0):	Not determined
SOLUBILITY IN WATER (weight %):	100%
pH:	2.9
BOILING POINT:	181°F (83°C) (Acetonitrile)
MELTING POINT:	-51°F (-46°C) a.k.a. Freezing Point (Acetonitrile)
VAPOR PRESSURE:	73 mm Hg at 68°F (20°C). (Acetonitrile)
VAPOR DENSITY (air = 1.0):	1.42 (Acetonitrile)
EVAPORATION RATE:	5 (Acetonitrile) COMPARED TO: Butyl Acetate = 1
% VOLATILES:	99.9
FLASH POINT:	<67°F (19°C) (Solution)

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

STABILITY (CONDITIONS TO AVOID):

Acetonitrile is stable at room temperature in closed containers under normal storage and handling conditions. Avoid heat, ignition sources, and incompatible materials.

INCOMPATIBILITIES:

Acids, bases, oxidizers, explosives, nitrogen-fluorine compounds, sulfites, perchlorates, reducing agents; Some forms of plastic, rubber and coatings are attacked.

CONDITIONS TO AVOID:

Heat, flames, ignition sources and incompatible material

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition can produce toxic fumes of hydrogen cyanide and oxides of carbon and nitrogen.

HAZARDOUS POLYMERIZATION:

Will not occur

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

Oral LD₅₀ (rat): 2,460 mg/kg.
Oral LD₅₀ (mouse): 591 mg/kg
Inhalation LC₅₀ (mouse): 3587 ppm/4H, male & female
Inhalation LC₅₀ (rat): 7551 ppm/8H.

Eye Irritation (rabbit): 100 μ L undiluted/24H - Severe, permanent damage to the cornea.

Skin Irritation (rabbit): 500 mg - Mild irritation

Skin LD₅₀ (rabbit): >2,000 mg/kg, male & female.

Skin Sensitization (guinea pig): Not sensitizing, method of Ritz and Buehler

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

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Blood, liver and kidney effects, and pulmonary edema have been observed in animal subchronic and chronic exposure studies. Acetonitrile is metabolized to cyanide in the body, and many toxic consequences (e.g., blood effects) are related to the formation of this metabolite.

2-Year Inhalation Carcinogenesis Studies (rat and mouse): In rats, there was no evidence of carcinogenic activity in females exposed to 100, 200, or 400 ppm; there was equivocal evidence of carcinogenic activity in males exposed to 400 ppm based on marginally increased incidences of liver adenoma and carcinoma. In mice, there was no evidence of carcinogenic activity in males or females exposed to 50, 100, or 200 ppm.

OTHER DATA:

Developmental Toxicity Studies: Acetonitrile is not considered teratogenic, but is embryotoxic and fetotoxic to several animal species by the inhalation, oral and intraperitoneal routes of exposure at high maternally toxic doses.

Ames Test (Salmonella typhimurium): Negative in presence and absence of exogenous metabolic activation.

In Vitro Cytogenetics Assay with Chinese Hamster Ovary (CHO) Cells: Weak or equivocal activity using both sister chromatid exchange and chromosome aberration as end points.

Rat Hepatocyte Unscheduled DNA Synthesis Assay: Inactive *in vitro* and *in vivo*.

Micronucleus Assay (mouse): Not clastogenic or aneugenic in the bone marrow of the mouse at the maximum tolerated dose (intraperitoneal injection of 100 and 125 mg/kg for males and females, respectively).

12. ECOLOGICAL INFORMATION

96 h LC₅₀ (fathead minnow): 1000 mg/L 24 h EC₅₀ Daphnia - 10,000 mg/L

72 h IC₅₀ Green Algae - 7,300 mg/L

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? Yes

If yes, the RCRA ID number (USEPA Hazardous Waste Code) is: U003 and U123

OTHER DISPOSAL CONSIDERATIONS:

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved RCRA waste facility. Dispose of container and unused contents in accordance with all applicable local, state, and federal regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

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14. TRANSPORT INFORMATION

Proper DOT Shipping Description: Acetonitrile Solution, 3, UN 1648, II.

Reportable Quantity (RQ): Acetonitrile = 5000 lbs (2270 kg).

Label(s) Required: Class 3, Flammable Liquid.

Emergency Response Guidebook (2004 Edition): Guide No. 131.

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: The components of this mixture are listed on the TSCA inventory

OTHER TSCA ISSUES: Acetic Anhydride
 TSCA High Production Volume (HPV) Chemicals: 1990, 1994 & Post-1994 Additions (01/20/06)
Acetonitrile
 TSCA Section 4(a) Final Test Rules & Testing Consent Orders
 TSCA Section 8(a) Preliminary Assessment Information Rule (PAIR) (40 CFR 712, Subpt. B)
 TSCA Section 8(a) Inventory Update Rule (IUR): Subject to a Special Regulatory Action under TSCA (2002 EPA Instructions, App. B)
 TSCA Section 8(d) Health & Safety Data Reporting (40 CFR 716, Subpt. B)
 TSCA High Production Volume (HPV) Chemicals: 1990, 1994 & Post-1994 Additions (01/20/06)

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
Acetonitrile	5000	None
Acetic Acid	5000	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate. Delayed. Fire.

SARA 313 TOXIC CHEMICALS:

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The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME

Acetonitrile

COMMENT

de minimis concentration is 1.0%.

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME

Acrylonitrile

WEIGHT %

Trace

COMMENT

See CA Proposition 65 Statement

California Proposition 65 Label Statement

Acetonitrile contains trace amounts of Acrylonitrile, which is listed on the California Proposition 65 list and the following statement has been placed on the product label:

"Warning: This product contains a chemical known to the State of California to cause cancer."

ADDITIONAL REGULATORY INFORMATION:

None

WHMIS CLASSIFICATION (CANADA):

Class B, Division 2.

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

FOREIGN INVENTORY STATUS:

All of the components of this product are listed on the following foreign inventories: Australia, Canada, China, the European Union, Japan, Korea and the Philippines.

16. OTHER INFORMATION

CURRENT ISSUE DATE: December 15, 2006

PREVIOUS ISSUE DATE: None

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

New MSDS

OTHER INFORMATION: NFPA Classification (Acetonitrile)

Health: 2

Flammability: 3

Reactivity: 0