



# American International Chemical, Inc.

Corporate Offices: (800) 238-0001

Internet: www.aicma.com Email: info@aicma.com

## MATERIAL SAFETY DATA SHEET

### CAPPING REAGENT B - CBITUL

#### SECTION 1 - CHEMICAL PRODUCT AND COMPANY INFORMATION

American International Chemical, Inc.	Emergency Number: Chemtrec	800-424-9300
135 Newbury Street		703-527-3887
Framingham, MA 01701	Information Number:	800-238-0001

Date: August 2007

Synonyms: Cap B Solution

CAS #: Not Applicable

DOT Hazard Class: 3,8

#### SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

% Volume	Component	CAS No.
50%	Acetonitrile	75-05-8
30%	Pyridine	110-86-1
20%	1-Methylimidazole	616-47-7

#### SECTION 3 - HAZARDS IDENTIFICATION

APPEARANCE: Clear Colorless Liquid.

EMERGENCY OVERVIEW: WARNING! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN. AFFECTS CARDIOVASCULAR SYSTEM, CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. FLAMMABLE LIQUID AND VAPOR. COMBUSTABLE. CAUSES BURNS AND SEVERE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT.

POTENTIAL HEALTH EFFECTS:

**Skin:** May cause severe burns and irritation. Harmful if absorbed through the skin.

**Eyes:** May cause severe burns and irritation.

**Inhalation:** Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

**Ingestion:** Harmful if swallowed.

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#### **SECTION 4 - FIRST AID MEASURES**

**Skin:** Immediately wash skin with soap and water for at least 15 minutes. Remove any contaminated clothing or shoes. Get medical attention immediately.

**Eyes:** Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart. Get medical attention immediately.

**Inhalation:** Remove to the fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. **DO NOT GIVE MOUTH-TO-MOUTH RESUSCITATION.** Get medical attention immediately. A cyanide antidote kit must be available at all times. Immediate first aid, including administration of oxygen and amyl nitrite, may be given by a trained layman. Medical treatment involves intravenous injection and must be administered by qualified medical personnel. Speed of treatment is very important. First aid given promptly is often the only treatment needed.

**Ingestion:** If swallowed, get medical attention immediately; **DO NOT** induce vomiting. Never give anything by mouth to an unconscious person.

**On All Of The Above:** Get medical attention immediately.

Note to Physicians: Pre-existing disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Lung (for example, asthma-like conditions), exposure to this material may aggravate any pre-existing condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemia's.

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#### **SECTION 5 - FIRE FIGHTING MEASURES**

Flash Point: 42.0 °F (5.5 °C) for Acetonitrile

Flammable Limits: Lower 4.4%; Upper 16.0% for Acetonitrile

Extinguishing Media: Alcohol foam, water fog, carbon dioxide, dry chemical.

Special Fire Fighting Procedures:

Use water spray to keep fire-exposed containers cool. **USE WATER WITH CAUTION.** Material reacts with water. Wear a self-contained breathing apparatus with a full face-piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS.

Unusual Fire Explosion Hazard: Combustible. Reacts violently with water. Material is highly volatile and readily gives off vapors, which may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point.

Hazardous Products of Combustion may form: Hydrogen cyanide, toxic fumes.

Auto Ignition Temperature: No Data.

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## **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Isolate hazard area and deny entry to unnecessary or unprotected personnel.

Small Spill: Neutralize with: lime, soda ash. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

Large Spill: Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Use water spray to disperse vapors and flush spill area. USE WATER WITH CAUTION. Material reacts with water. Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer-spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

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## **SECTION 7 - HANDLING AND STORAGE**

Personal Precautionary Measures: Do not get in eyes, on skin, on clothing. Do not taste or swallow. Avoid breathing vapor Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from heat and flame. Keep from contact with oxidizing materials. Do not allow water to get into container because of violent reaction.

Handling: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. All five-gallon pails and larger metal containers, including tank cars and tank trucks, should be grounded and/or bonded when material is transferred.

Storage: Do not store exposed to direct light. Contents may develop pressure if exposed to water. Containers should be stored in a cool, dry, well-ventilated area. Store away from flammable materials, sources of heat and flame, and foodstuffs. Exercise caution to prevent damage to or leakage from the container. Guard against water contamination to prevent decomposition.

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## **SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Acetonitrile: ACGIH TLV 40.000 ppm - TWA

Acetonitrile: ACGIH TLV 60.000 ppm - STEL

Pyridine: ACGIH TLV 5.000 ppm - TWA

OSHA (USA) Permissible Exposure Limit (PEL, 1989 Table Z-1-A values or section-specific standards):

Acetonitrile: VPEL 40.000 ppm - TWA

Acetonitrile: VPEL 60.000 ppm - STEL

Pyridine: OSHA VPEL 5.000 ppm – TWA

VENTILATION: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

RESPIRATORY PROTECTIONS: If overexposure has been determined or documented, a NIOSH/MSHA jointly approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators under specified conditions. (See your safety equipment supplier.) Engineering or administrative controls should be implemented to reduce exposure.

RESPIRATOR TYPE: organic vapor. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998.

EYE PROTECTION: Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

SKIN PROTECTION: Wear chemical-resistant gloves, boots, and protective clothing appropriate for the risk of exposure. Contact glove manufacturer for specific information.

RECOMMENDED DECONTAMINATION FACILITIES: eye bath, safety shower, washing facilities

ENGINEERING CONTROLS: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). Use only in a chemical fume hood.

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## **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point (for Acetonitrile): 117.1 °F (47.2 °C) @ 760 mm Hg

Vapor Pressure for (Acetonitrile): 72.800 mm Hg @ 68.00 °F

Vapor Density (AIR=1): Not known

Specific Gravity (H<sub>2</sub>O=1): 0.89 g/ml @ 25 °C

Percent Volatile by Volume (%): Not known

Melting Point (Acetonitrile): -44 °C

Evaporation Rate (Butyl Acetate=1): Slower than Ethyl Ether.

Solubility in Water: Not Applicable

pH: Not Applicable

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## **SECTION 10 - STABILITY AND REACTIVITY**

CHEMICAL STABILITY: Stable under normal temperatures and pressures.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, hydrogen cyanide, nitrogen oxides.

KEEP AWAY FROM: Moisture, excessive heat, carbon dioxide, strong Mineral acids, strong oxidizing agents, and weak alkalis. Material can react violently with strong oxidizing agents or water. Material can react with alcohols, bases.

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## **SECTION 11 - TOXICOLOGICAL INFORMATION**

Acute Toxicity Data for Pyridine:

(Investigated as a tumorigen and mutagen.)

Oral LD-50 (rat): 891 mg/kg

Inhalation LC-50 (rat): 28500 mg/m<sup>3</sup>/1 hour

Dermal LD-50 (rabbit): 1121 mg/kg

Skin irritation (rabbit), open Draize: 10 mg/24H, mild

Eye irritation (rabbit), standard Draize: 2 mg, severe

Acute Toxicity Data for Acetonitrile:

(Investigated as a tumorigen, mutagen, reproductive effector):

Oral rat LD50: 2460 mg/kg; skin rabbit

LD50: 1250 uL/kg; inhalation rat

LC50: 7551 ppm/8H.

Acute Toxicity Data for 1-Methylimidazole:

Oral LD-50 (rat): 1130 mg/kg

Oral LD-50 (mouse): 1400 mg/kg (Behavioral remarks: Convulsions or effect on seizure threshold)

Intraperitoneal LD-50 (mouse): 380 mg/kg (Behavioral remarks: Convulsions or effect on seizure threshold)

Dermal LD-50 (rabbit): 400-640 mg/kg

Chronic Exposure- Mutagen test: Histidine reversion (ames)

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## **SECTION 12 - ECOLOGICAL INFORMATION**

For Acetonitrile:

Environmental Fate: When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into water, this material may evaporate to a moderate extent. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is not expected to react with photochemically produced hydroxyl radicals. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material is expected to have a half-life of greater than 30 days.

Environmental Toxicity: This material may be harmful to aquatic organisms due to shift in pH.

Acute Ecotoxicity Tests (for 1-Methylimidazole):

LC50 Fish (*Leuciscus idus*) 96H 100-200 mg/l

EC50 *Daphnia* (*Daphnia magna*) 48H 268 mg/l

EC50 Algae (*Scenedesmus subspicatus*) 72H 180 mg/l

**SECTION 13 - DISPOSAL CONSIDERATIONS**

Dispose of in accordance with all federal, state and local regulations.

RCRA WASTE #: Not Listed

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**SECTION 14 - TRANSPORTATION INFORMATION**

D.O.T. SHIPPING NAME: Flammable Liquid, Corrosive, N.O.S. (Acetonitrile, Pyridine, 1-Methylimidazole)

TECHNICAL SHIPPING NAME: Flammable Liquid, Corrosive, N.O.S. (Acetonitrile, Pyridine, 1-Methylimidazole)

U.N./NUMBER: UN2924

D.O.T. HAZARD CLASS AND GROUP NUMBER: 3,8 PG II

D.O.T. PLACARD: Flammable, Corrosive

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**SECTION 15 - REGULATORY INFORMATION**

Information available for Acetonitrile:

US Federal Regulations

TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) the intentional ingredients of this product are listed.

CERCLA RQ - 40 CFR 302.4(a)

Component RQ (lbs)

Acetonitrile 5000

SARA 302 Components - 40 CFR 355 Appendix A: None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate (X) Delayed (X) Fire (X)

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number	%
ACETONITRILE	75-05-8	100.00

International Regulations: Inventory Status Not determined

State and Local Regulations

California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer.

ACRYLONITRILE

New Jersey RTK Label Information

ACETONITRILE 75-05-8

Pennsylvania RTK Label Information  
ACETONITRILE 75-05-8

Information available for Pyridine:

US Federal Regulations

TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of this product are listed.

CERCLA RQ - 40 CFR 302.4(a)

Component	RQ (lbs)
PYRIDINE	1000

SARA 302 Components - 40 CFR 355 Appendix A: None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate (X) Fire (X)

SARA 313 Components - 40 CFR 372.65

Section 313 Component(s)	CAS Number	%
PYRIDINE	110-86-1	100.00

International Regulations

Inventory Status: Not determined

State and Local Regulations

California Proposition 65: None

New Jersey RTK Label Information

PYRIDINE 110-86-1

Pennsylvania RTK Label Information

PYRIDINE 110-86-1

Information available for 1-Methylimidazole:

EU Directive Classification

Symbol of Danger: C

Indication of Danger: Corrosive.

R: 21/22 34

Risk Statements: Harmful in contact with skin and if swallowed. Causes burns.

S: 26 36 45

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Classification and Label text

Indication of Danger: Corrosive.

Risk Statements: Harmful in contact with skin and if swallowed. Causes burns.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Combustible.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

DSL: Yes

NDSL: No

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

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**SECTION 16 - OTHER INFORMATION**

Cyanide antidote kits (such as Eli Lilly Co. Kit No M-76 - cyanide package) are available by prescription. To obtain a kit you must: 1) obtain a prescription from your physician; 2) go to a local pharmacy and ask the pharmacist to order the kit for you. There is an expiration date on the kit. It must be replaced before it expires; 3) place this kit with your safety or first aid supplies. Do not lock it in a desk or cabinet as valuable time may be wasted trying to get the kit if a cyanide exposure occurs; 4) read the instructions provided and train your employees in the proper use of amyl nitrite as first aid.

Reason for Issue: Changed Date

**This information is given without any warranty or representation. It is believed to be correct but does not claim to be all-inclusive and shall be used only as a guide. American International Chemical, Inc., shall not be held liable for any damage resulting from handling or contact with the above product. It is offered solely for your consideration, investigation and verification.**