



American International Chemical, Inc.

Corporate Offices: (800) 238-0001

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

MATERIAL SAFETY DATA SHEET

CAPPING A REAGENT, ABI FORMULATION

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 A (Acetic Anhydride and Pyridine in THF, 1:1:8)

CAS #: Not Applicable

DOT Hazard Class: Flammable Liquid, Corrosive, N.O.S.
(Contains Tetrahydrofuran, Pyridine & Acetic Anhydride)
UN2924, Packing Group II
Primary Hazard Class 3
Secondary Hazard Class 8

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

Component	CAS #	% (V/V)
Tetrahydrofuran	109-99-9	80%
Pyridine	110-86-1	10%
Acetic Anhydride	108-24-7	10%
Acetic Acid	64-19-7	<1%

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Clear, colorless liquid that is an extremely flammable liquid and vapor. Tends to form explosive peroxides especially when anhydrous. Causes burns. Harmful if inhaled, swallowed or absorbed through the skin. May cause damage to nervous and respiratory systems, kidneys and liver.

POTENTIAL HEALTH EFFECTS:

Skin: Causes burning on contact.

Eyes: Causes irritation or burning.

Inhalation: Causes irritation to the respiratory tract.

Ingestion: Causes irritation or burning.

CARCINOGENICITY: Not listed as a cancer-causing agent.

SECTION 4 - FIRST AID MEASURES

Skin: Immediately wash skin with soap and water for at least 15 minutes.

Eyes: Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart.

Inhalation: Remove to the fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give water.

On All Of The Above: Seek medical attention immediately.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point: <-15 °C (Tetrahydrofuran)

Flammable Limits: lel: 2.0; uel: 11.8 (Tetrahydrofuran)

Extinguishing Media: Use carbon dioxide or dry chemical. Use water to cool fire-exposed containers and disperse vapors.

Special Fire Fighting Procedures:

All firefighters should use self-contained breathing apparatus and full fire-fighting turn-out gear.

Unusual Fire Explosion Hazard: Dangerous fire and explosive hazard. Explosive peroxides may form after long storage or exposure to air and light. THF can form heat sensitive peroxide, which may explode on concentration by distillation or drying. Do not distill or allow THF, or solutions containing THF, to dry if tests show more than 0.05% THF peroxide present. To avoid a possible explosion, THF should never be distilled to dryness. Vapor can travel distances to ignition source and flash back.

Auto Ignition Temperature: 321 °C (Tetrahydrofuran), 314.9 °C (Acetic Anhydride)

SECTION 6 - ACCIDENTAL RELEASE MEASURES

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

Wear suitable protective equipment listed under Exposure Controls, Personal Protection below.

Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.

Contain spilled liquid with sand or earth. Place in a disposal container. Avoid runoff into storm sewers and ditches that lead to waterways.

SECTION 7 - HANDLING AND STORAGE

Avoid contact with skin, eyes and clothing. Use with adequate ventilation. Use normal personal hygiene and housekeeping. Keep container closed. Store in cool dry area away from ignition sources and oxidizers.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respirators.

VENTILATION REQUIREMENTS: Use in an approved fume hood or with adequate ventilation.

SKIN AND EYE PROTECTION: Use PVA or equivalent gloves, chemical goggles and clothing sufficient to protect skin.

WORK, HYGIENIC PRACTICES: Safety showers and/or eye wash should be available. Do not leave food or smoke in work area. Wash thoroughly and remove or clean any contaminated clothing.

EXPOSURE LIMITS:

OSHA – PEL:

Component	TWA		STEL		CL	
	PPM	MG/M ³	PPM	MG/M	PPM	MG/M ³
Tetrahydrofuran	200	590	250	735		
Pyridine	5	15				
Acetic Anhydride					5	20

ACGIH-TLV:

Component	TWA		STEL	
	PPM	MG/M ³	PPM	MG/M ³
Tetrahydrofuran	200	590	250	737
Pyridine	5	16		
Acetic Anhydride	5	21	15	

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 75 °C (Weighted average)

Vapor Pressure (MM Hg): Not Available

Vapor Density (AIR=1): 2.62 (Weighted average)

Specific Gravity (H₂O=1): 0.91 (Weighted average)

Percent Volatile by Volume (%): 100%

Melting Point: -104 °C (Weighted average)

Evaporation Rate (Butyl Acetate=1): Not Available

Solubility in Water: Soluble

pH: Not Available

CAPPING A REAGENT, ABI FORMULATION

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures.

HAZARDOUS POLYMERIZATION: May occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbons (CO_x).

KEEP AWAY FROM: Heat, contact with ignition sources and evaporation to dryness or near dryness. Strong oxidizers, sodium aluminum hydride, excel of strong caustic and lithium aluminum hydride and moisture.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute oral toxicity LD50 (Rat): 1665 mg/kg (Calculated value for mixture)
Acute toxicity of vapor LC50 (Rat): 5939 ppm 4 hours (Calculated value for mixture)

Reproductive Toxicity: Animal data show developmental effects only at exposure levels producing other toxic effects in adult animals. Animal testing for reproductive effects show no change in reproductive performance.

SECTION 12 - ECOLOGICAL INFORMATION

Environmental Toxicity:

Tetrahydrofuran: 96-hour LC50, fathead minnows: 2160 mg/L

Pyridine: The LC50 values for fish are between 10 and 100 mg/L. The LC50 / 96-hour values for fish are over 100 mg/L.

Acetic Anhydride: 96-hour EC-50, daphnid: 55 mg/L, 48-hour LC-50, golden orfe: 265-279 mg/L

SECTION 13 - DISPOSAL CONSIDERATIONS

EPA Waste Numbers: D001, D038

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

RCRA WASTE #: Not Listed

SECTION 14 - TRANSPORTATION INFORMATION

D.O.T. SHIPPING NAME: Flammable Liquid, Corrosive, N.O.S.
(Contains Tetrahydrofuran, Pyridine & Acetic Anhydride)

TECHNICAL SHIPPING NAME: SAME

U.N./NUMBER: UN2924

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

D.O.T. PLACARD: Flammable Liquid, Corrosive

PRODUCT LABEL: Capping A Reagent

SECTION 15 - REGULATORY INFORMATION

OSHA STATUS: Tetrahydrofuran – Listed
 Pyridine – Listed
 Acetic Anhydride - Listed

TSCA STATUS: This product is a mixture. The CAS numbers of all components are listed on the TSCA inventory.

CERCLA REPORTABLE REQUIREMENTS: (RQ)
 Tetrahydrofuran – 1000
 Pyridine – 1000
 Acetic Anhydride – 5000

SARA TITLE III INFORMATION:

Section 302 Extremely Hazardous Substance:

Tetrahydrofuran:	Not listed
Pyridine:	Not listed
Acetic Anhydride:	Not listed

Section 313 Toxic Chemicals:

Tetrahydrofuran:	Not listed
Pyridine:	Listed
Acetic Anhydride:	Listed

Section 311/312 Hazard Category:

Tetrahydrofuran: Fire hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard;
Acetic Anhydride: Fire Hazard, Immediate (Acute) Health Hazard;
Pyridine: Fire hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard.

SECTION 16 - OTHER INFORMATION

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.