

# Material Safety Data Sheet. No: SD4110-R01

Issued 23-Jun-09

## Section 1 : Chemical Identification

<b>Catalogue No.:</b>	4110-XXXX	<b>Name:</b>	Cap Mix A (Tetrahydrofuran/Pyridine/Acetic Anhydride)
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## Section 2 : Hazards Identification

<b>Main Hazard</b>	Flammable
<b>Other Specific Hazards</b>	Corrosive

## Section 3 : Composition/information on Ingredients

<b>Chemical Name</b>	<b>Composition</b>	<b>CAS No.</b>	<b>EINECS No.</b>
<b>Tetrahydrofuran</b>	80%	109-99-9	203-726-8
<b>Pyridine</b>	10%	110-86-1	203-809-9
<b>Acetic Anhydride</b>	10%	108-24-7	203-564-8

## Section 4 : First Aid Measures

<b>Eyes</b>	In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. OBTAIN MEDICAL ATTENTION
<b>Skin</b>	In case of contact, remove contaminated clothing, immediately wash skin with soap and copious amounts of water. OBTAIN MEDICAL ATTENTION
<b>Ingestion</b>	Induce vomiting and washout mouth with water provided the person is conscious. OBTAIN MEDICAL ATTENTION
<b>Inhalation</b>	Immediately remove to fresh air. If not breathing, give artificial respiration. OBTAIN MEDICAL ATTENTION

## Section 5 : Fire Fighting Measures

<b>Extinguishing Media</b>	Carbon dioxide, dry chemical powder or appropriate foam
<b>Special Hazards of Product</b>	Explosive peroxides can form on standing or on exposure to air or direct sunlight. Volatile and flammable liquid. Heat will build up pressure in closed storage containers. Vapour may travel some distance to points of ignition and cause flash back.
<b>Protective Equipment for Fire Fighting</b>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## Section 6 : Accidental Release Measures

<b>Personal Protection</b>	Wear protective clothing, respirator, chemical safety goggles, rubber gloves and rubber boots
<b>Leaks and Spills</b>	Ventilate area and remove all sources of ignition. Clean the contaminated area thoroughly with a suitable solvent and absorbent material taking care to avoid breathing fumes. Dispose of all cleaning materials with care (see section 13). Use non-sparking tools.

## Section 7 : Handling and Storage

<b>Handling</b>	Wear protective clothing, gloves and safety goggles. Use in a fume extraction cabinet. Avoid contact with eyes, skin and clothing. Avoid inhalation. Wash thoroughly after handling. Avoid heat, sparks and open flames. Keep containers closed when not in use. Earth metal containers when in use. Can form explosive peroxides which could explode during concentration or evaporation. Do not concentrate if peroxide concentrations are above 5ppm or 0.05%. Periodically check for peroxides in stored material before use.
<b>Storage</b>	Protect from extremes of temperature and direct sunlight. Store in sealed containers in an appropriately protected and secure flammable liquid store. Proper storage should be determined based on other materials stored and their hazards and chemical incompatibilities

## Section 8 : Exposure controls/Personal Protection

<b>Exposure Controls</b>	Always use adequate fume extraction and keep storage vessels closed when not in use. See also sections 6 and 7 above.
<b>Personal Protection</b>	Protective gloves, goggles or laboratory spectacles and clothing are recommended. See also sections 6 and 7 above.

## Section 9 : Physical and Chemical Properties

<b>Physical State</b>	Clear, colourless liquid		
<b>Melting Point</b>	N/A	<b>Boiling Point</b>	65-67°C
<b>Flash Point</b>	-17°C	<b>Explosion Limits</b>	Lower:1.8% in air by volume Upper:11.8% in air by volume
<b>Solubility (Water)</b>	Miscible	<b>Solubility (Org. Solvents)</b>	N/A
<b>Chemical Formula</b>	N/A	<b>Molecular Weight</b>	N/A
<b>Other Information</b>	Vapour Pressure at 20°C = 143mmHg; Freezing Point -108.5°C; Auto ignition temperature = 321°C		

## Section 10 : Stability and Reactivity

<b>Chemical Stability</b>	Stable..
<b>Incompatibilities</b>	Oxidising agents and strong acids and bases. May react violently with water and other protic solvents.
<b>Hazardous Decomposition or Combustion Products</b>	Incomplete combustion can generate carbon monoxide and other toxic vapours. May form peroxides on storage and exposure to air or direct sunlight
<b>Hazardous Polymerisation</b>	Hazardous polymerisation may occur

## Section11 : Toxicological Data

<b>Toxic Effects</b>	Inhalation: Exposure can cause nausea, dizziness, headache and central nervous system depression. Vapours can be irritating to the mucous membranes and upper respiratory tract. Eye contact: Liquid and high vapour concentration can cause irritation Skin Contact: prolonged and repeated contact can cause irritation and dermatitis Ingestion: Systemic effects similar to inhalation  Effects of over-exposure: Nausea, dizziness, headache, and narcosis. Liver and kidney damage can occur from chronic exposure.
<b>Other Toxicological Data</b>	The toxicological effects of this preparation have not been fully investigated. Information for the components are given below: Exposure Limits (for THF): Time weighted average (8Hr): 50ppm or 150mg/m <sup>3</sup> Short Term Exposure Level 100ppm or 300mg/m <sup>3</sup>  ORL-RAT LD50 (pyridine) >2000mg/kg; (acetic anhydride) 1780 mg/kg IHL-RAT LD50 (acetic anhydride) 1000ppm/4h SKN-RBT LD50 (acetic anhydride) 4ml/kg

## Section 12 : Ecological Information

In use, caution should be exercised to minimise release into the environment by using appropriate containment procedures. Product not inherently biodegradable.

## Section 13 : Disposal Information

Dispose by incineration at high temperature in an approved incinerator fitted with appropriate environmental protection equipment. Dispose of in accordance with all applicable Local, National, State and Federal regulations. Labels should not be removed from containers until they have been thoroughly cleaned in an appropriate manner. Containers should not be treated as domestic waste and disposed of appropriately. Always use an approved disposal company.

## Section 14 : Transport Information

<b>UN No.</b>	2924	<b>UN Class</b>	3	<b>UN Packing Gp.</b>	II
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<b>Road Freight</b>	ADR/RID Hazard ID: 33
<b>Sea Freight</b>	EmS: F-E S-D
<b>Air Freight</b>	IATA-DGR Packaging: 307

## Section 15 : Regulatory Information

### European Information:

<b>R Phrases</b>	R11 – Highly flammable R19 – May form explosive peroxides R36/37 – Irritating to eyes and respiratory system
<b>S Phrases</b>	S16 – Keep away from sources of ignition – No smoking S29 – Do not empty into drains S33 – Take precautionary measures against static discharges

## Section 16 : Other information

<b>MSDS First Issued</b>	Mar 07	<b>MSDS Last Revision</b>	Jun-09	<b>MSDS Version</b>	R01
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