SAFETY DATA SHEET

SD4012-R01

1. Identification

GHS PRODUCT IDENTIFIER

Product name: Cap Mix A (10% Acetic Anhydride in Tetrahydrofuran)

OTHER MEANS OF IDENTIFICATION

Item number: 4012
Catalogue number(s): 4012-YZZZ, where Y=letters A-Z, ZZZ=numbers 000-999
Brand: Not applicable.

RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE

For laboratory and manufacturing use. Not for drug, household or other use.

SUPPLIER'S DETAILS

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EMERGENCY PHONE NUMBER

+44 (0) 1698 849911 (Monday to Friday 8 am to 6 pm)

2. Hazard identification

GHS CLASSIFICATION OF THE SUBSTANCE/MIXTURE

Classification according to Regulation (EC) No. 1272/2008

Flammable Liquid:	Category 2
Acute toxicity, Oral	Category 4
Skin irritation:	Category 2
Serious Eye damage	Category 1
Carcinogenicity:	Category 2
STOT SE (respiratory system)	Category 3

Classification according to EU Directives 67/548/EEC or 1999/45/EC

F	Highly Flammable	R11, R19
Xi	Irritant	R37/38, R41

GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

Pictogram 

Signal word: Danger

Hazard Statements

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.

Precautionary Statements

Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
P370 + P378	In case of fire: Use dry powder or sand to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.

OTHER HAZARDS

EUH019	May form explosive peroxides

3. Composition/information on ingredients

MIXTURES

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
Tetrahydrofuran			
CAS No EC No Index No Registration No	109-99-9 203-726-8 603-025-00-0 01-2119444314-46-XXXX	Flammable Liquid 2; Carc. 2; Eye Irritation 2; Acute Tox. 4; STOT SE 3; H225, H302, H319, H335, H351, EUH019.	90 - 100%

Acetic Anhydride			
CAS No EC No Index No	108-24-7 203-564-8 607-008-00-9	Flam. Liq. 3; Acute Tox. 4; Acute Tox. 3; Skin Corr. 1B; H226, H302, H331, H314, H315, H319, H335.	10 - 15%

Hazardous ingredients according to Directive 1999/45/EC

Component		Classification	Concentration
Tetrahydrofuran			
CAS No EC No Index No Registration No	109-99-9 203-726-8 603-025-00-0 01-2119444314-46-XXXX	F, Xi, R11 - R36/37	50 - 100%
Acetic Anhydride			
CAS No EC No Index No	108-24-7 203-564-8 607-008-00-9	C, Xn, R34 – R20/22	20 - 25%

4. First aid measures

DESCRIPTION OF NECESSARY MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact

Remove any contaminated clothing. Wash off with soap and plenty of water.

In case of eye contact

Flush eyes copiously with water for at least 15 minutes. Use a sterile eye wash if available.

If swallowed

Do NOT induce vomiting. Keep person calm and immobile. Rinse mouth with water if conscious. Never give anything by mouth to an unconscious person.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. See section 11.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY

No data available.

5. Fire-fighting measures

SUITABLE EXTINGUISHING MEDIA

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL (E.G. NATURE OF ANY HAZARDOUS COMBUSTION PRODUCTS)

Carbon oxides

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS

Wear mask and protective clothing to prevent contact with skin and eyes. Wear self-contained breathing apparatus if necessary.

FURTHER INFORMATIONS

Use water spray to cool unopened containers.

6. Accidental release measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear protective clothing, respirator, chemical safety goggles, rubber gloves and rubber boots. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Be aware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage, if safe to do so. Prevent product from entering drains.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Contain spills using absorbent barriers where available. Clean the contaminated area thoroughly with water taking care to avoid breathing fumes. Dispose of all cleaning materials with care (see section 13), where possible containing in sealed containers for appropriate disposal.

7. Handling and storage

PRECAUTIONS FOR SAFE HANDLING

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Do not eat, drink or smoke when using this product. Keep away from sources of ignition. Take measures to prevent build-up of electrostatic charge.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Containers should be kept sealed and safely stored when not in use. Store in a cool, dry, well-ventilated area.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Store under inert gas.

8. Exposure controls/personal protection

CONTROL PARAMETERS (OCCUPATIONAL EXPOSURE LIMIT VALUES OR BIOLOGICAL LIMIT VALUES)

Component	CAS No	Value	Control Parameters	Basis
Tetrahydrofuran	109-99-9	STEL	100 ppm 300 mg/m^3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Remarks	Identifies the possibility of significant uptake through the skin. Indicative.		
		TWA	50 ppm 150 mg/m^3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
		Identifies the possibility of significant uptake through the skin. Indicative.		
		TWA	50 ppm 150 mg/m^3	UK – EH40 WEL – Workplace Exposure Limits
		Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		STEL	100 ppm 300 mg/m^3	UK – EH40 WEL – Workplace Exposure Limits
		Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity		
Acetic Anhydride	108-24-7	STEL	2 ppm 10 mg/m^3	UK – EH40 WEL – Workplace Exposure Limits
		TWA	0.5 ppm 2.5 mg/m^3	UK – EH40 WEL – Workplace Exposure Limits

APPROPRIATE ENGINEERING CONTROLS

General good industrial laboratory hygiene and safety practice. Use product within air-extracted fume hood where possible. Wash hands before breaks and at the end of the workday.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

Eye/face protection

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Splash contact – 0.3mm butyl rubber

Breakthrough time: 10 min

Body Protection

Complete suit protecting against chemicals, flame-retardant antistatic protective clothing. The type of protective equipment must be selected according to the quantity and concentration of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type ABEK (EN14387) respirator cartridges as a back-up to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and chemical properties

Appearance (physical state, colour etc.):	Clear liquid.
Odour:	No data available
Odour threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	-17°C – closed cup
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	No data available
Water Solubility:	No data available

Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available
Empirical formula:	Not applicable.
Molecular weight (g/mol):	Not applicable.

10. Stability and reactivity

REACTIVITY

No data available.

CHEMICAL STABILITY

Stable under recommended storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS

No data available.

CONDITIONS TO AVOID (E.G. STATIC DISCHARGE, SHOCK OR VIBRATION)

Heat, flames and sparks. Extremes of temperature and direct sunlight.

INCOMPATIBLE MATERIALS

Bases, Oxidising agents, Powdered Metals, Reducing Agents, Oxygen, Alcohols, acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Other decomposition products – no data available.
In the event of fire: see section 5.

11. Toxicological information

TOXIC EFFECTS

Acute toxicity:	No data available
Skin corrosion/irritation:	No data available
Serious eye damage/irritation:	No data available
Respiratory or skin sensitization:	No data available
Germ cell mutagenicity:	No data available

Carcinogenicity:	IARC – no component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity:	No data available
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

ADDITIONAL INFORMATION

RTECS: Not available.
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea.

12. Ecological information

TOXICITY

No data available.

PERSISTENCE AND DEGRADABILITY

No data available.

BIOACCUMULATIVE POTENTIAL

No data available.

MOBILITY IN THE SOIL

No data available.

OTHER ADVERSE EFFECTS

No data available.

13. Disposal Considerations

DISPOSAL METHODS

For the safety of persons conducting disposal, recycling or reclamation activities, please refer to the information in section 8 of the SDS. Dispose by incineration at high temperature in an approved incinerator fitted with appropriate environmental protection equipment taking extra care in igniting, as this material is highly flammable. Contaminated packaging should be treated as product. 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. Do not dispose to drains.

14. Transport information

UN number

ADR/RID: 2056 IMDG: 2056 IATA: 2056

UN proper shipping name

ADR/RID: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (TETRAHYDROFURAN, ACETIC ANHYDRIDE)

IMDG: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (TETRAHYDROFURAN, ACETIC ANHYDRIDE)

IATA: Flammable liquid, corrosive, N.O.S. (Tetrahydrofuran, Acetic anhydride)

Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

Packing group

ADR/RID: II IMDG: II IATA: II

Environmental hazards

IMDG Marine Pollutant: No

ADR/RID: No

IATA: No

Special precautions for the user

No data available.

15. Regulatory information

This safety datasheet complies with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Fourth revised edition, 2011.

No further safety, health and environmental regulations specific for the product in question are available.

16. Other information

Document Number: SD4012-R01

Approved: November 2015