

DN-3304-A  
Version: 2013Cap A  
Revision: 2022

# Material Safety Data Sheet

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Capping Solution A**  
Chemical Name /Combination Acetic Anhydride, Tetrahydrofuran, Pyridine (10:10:80)  
Catalog Number: **DN-3304-A**  
Synonym/Trade Name: DNA Synthesis Cap A reagent; Acetic Anhydride reagent, Cap-A  
Manufacturer or supplier's ChemGenes India Pvt. Ltd  
207, Regency Plaza, 5-Park Road  
Lucknow-226 001,U.P, India,  
Ph: +91 86874 21036,  
Email: info@chemgenesindia.com

## SECTION 2. COMPOSITION, INFORMATION ON INGREDIENTS

Component: Acetic Anhydride  
CAS#: 108-24-7  
EC # (EINECS): 203-564-8  
Percentage: 5.0 – 15.0  
M.W.: 102.09

Component: Tetrahydrofuran  
CAS#: 109-99-9  
EC # (EINECS): 203-726-8  
Percentage: 75.0 – 85.0  
M.W.: 72.11

Component: Pyridine  
CAS#: 110-86-1  
EC # (EINECS): N/A  
Percentage: 5.0 – 15.0  
M.W.: 79.11

## SECTION 3: HAZARDS IDENTIFICATION

Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225 Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 3), H331 Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318 Carcinogenicity (Category 2), H351 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335 For the full text of the H-Statements mentioned in this Section, see Section 16.

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## Label elements

Labelling according Regulation (EC) No 1272/2008

## Pictogram



Signal word Danger

## Hazard statement(s)

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

## Precautionary statement(s)

P201 Obtain special instructions before use.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
No smoking.

P280 Wear eye protection/ face protection.

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable  
for breathing. Call a POISON CENTER/ doctor.

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 POISON CENTER/ doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

## Supplemental Hazard information (EU)

EUH018 In use may form flammable/explosive vapor-air mixture.

EUH019 May form explosive peroxides.

EUH071 Corrosive to the respiratory tract.

## Other hazards

This substance/mixture contains no components considered to be either persistent, bio  
accumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels  
of 0.1% or higher.

Lachrymator.

**SECTION 4: FIRST AID MEASURES**

Description of first-aid measures

General advice

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

If inhaled

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

Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

**SECTION 5: FIREFIGHTING MEASURES**

Extinguishing media Suitable extinguishing media

Dry powder Dry sand

Unsuitable extinguishing media

Do NOT use water jet.

Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx) Combustible.

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Use water spray to cool unopened containers.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Reference to other sections

For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place. Moisture sensitive. Dry residue is explosive. Dry residue is explosive. Store under inert gas. Test for peroxide formation periodically and before distillation.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ingredients with workplace control parameters

Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

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#### Eye/face protection

Tightly fitting safety goggles. Faceshield (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 Regulation (EU) 2016/425 and the standard EN 374 derived from it.

#### Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount 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 AXBEK (EN 14387) respirator cartridges as a backup 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).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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

Information on basic physical and chemical properties

a)	Appearance Form:	Liquid
b)	Odor	No data available
c)	Odor Threshold	No data available
d)	pH	No data available
e)	Melting Point/freezing point	No data available
f)	Initial boiling point and boiling range	65 °C - lit.
g)	Flash point	-17 °C - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available

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m)	Relative density	0.916 g/cm <sup>3</sup>
n)	Water solubility	No data available
o)	Partition coefficient:	n-octanol/water
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
u)	Density	0.917g/ml @20°C
	Other safety information	No data available

## SECTION 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

Heat, flames and sparks.

Incompatible materials

Bases, Oxidizing agents, Powdered metals, Strong oxidizing agents, Strong acids, Reducing agents, Oxygen, Alcohols, acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

Other decomposition products - No data available In the event of fire: see section 5

## SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects Acute toxicity

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

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Germ cell mutagenicity  
No data available

Carcinogenicity  
IARC: 2B - Group 2B: Possibly carcinogenic to humans (Pyridine)

Reproductive toxicity  
No data available

Specific target organ toxicity - single exposure  
No data available

Specific target organ toxicity - 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

## **SECTION 12: ECOLOGICAL INFORMATION**

Toxicity  
No data available

Persistence and degradability  
No data available

Bioaccumulative potential  
No data available

Mobility in soil  
No data available

Results of PBT and vPvB assessment  
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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Other adverse effects  
No data available

### SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging  
Dispose of as unused product.

### SECTION 14: TRANSPORT INFORMATION

UN number

ADR/RID: 1992      IMDG: 1992      IATA: 1992

UN proper shipping name

ADR/RID: Flammable Liquid, Toxic, N.O.S. (Acetic Anhydride, Tetrahydrofuran)  
IMDG: Flammable Liquid, Toxic, N.O.S. (Acetic Anhydride, Tetrahydrofuran)  
IATA: Flammable liquid, Toxic, N.O.S. (Tetrahydrofuran, Acetic anhydride)

Transport hazard class(es)

ADR/RID: 3 (6.1)      IMDG: 3 (6.1)      IATA: 3 (6.1)

Packaging group

ADR/RID: II      IMDG: II      IATA: II

Environmental hazards

ADR/RID: no      IMDG Marine pollutant: no      IATA: no

Special precautions for user  
No data available

### SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use



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REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Acetic anhydride

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

#### **SECTION 16: OTHER INFORMATION**

Full text of H-Statements referred to under sections 2 and 3.

EUH018 In use may form flammable/explosive vapor-air mixture.

EUH019 May form explosive peroxides.

EUH071 Corrosive to the respiratory tract.

H225 Highly flammable liquid and vapor.

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. ChemGenes India Pvt. Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.

-----End of MSDS-----