

DN-3306-A
Version: 2013Cap B
Revision: 2022

Material Safety Data Sheet

SECTION 1. CHEMICAL IDENTIFICATION

Product Name: **Capping Solution B**
Chemical Name /Combination 10% NMI/THF
Catalog Number: **DN-3306-A**
Synonym/Trade Name: DNA Synthesis Cap B reagent; N-MethylImidazole reagent
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: 1-MethylImidazole
CAS#: 616-47-7
EC # (EINECS): 210-484-7
Percentage: 10.0%
M.W.: 82.11

Component: Tetrahydrofuran
CAS#: 109-99-9
EC # (EINECS): 203-726-8
Percentage: 90.0%
M.W.: 72.10

SECTION 3. HAZARDS IDENTIFICATION



NFPA Ratings (Scale 0-4): Health=3 Fire=3 Reactivity=1
EC Classification: Not determined

Emergency Overview

Physical Description: Colorless liquid

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Odor: None
Major Health Hazards: Harmful if inhaled, harmful if swallowed, respiratory tract burns, skin burns, eye burns, mucous membrane burns, central nervous system depression, allergic reactions.

Physical Hazards: Combustible liquid and vapor.

Potential Health Effects**Inhalation:**

Short Term Exposure: Irritation (possibly severe), nausea, vomiting, headache, symptoms of drunkenness.

Long Term Exposure: Same as effects reported in short term exposure, coma.

Skin Contact:

Short Term Exposure: Irritation (possibly severe)

Long Term Exposure: Same as effects reported in short term exposure.

Eye Contact:

Short Term Exposure: Irritation (possibly severe)

Long Term Exposure: Same as effects reported in short term exposure, eye damage.

Ingestion:

Short Term Exposure: Burns, sore throat, vomiting, digestive disorders. Long Term Exposure: Kidney damage, liver damage

Carcinogen Status: OSHA: N NTP: N IARC: N

SECTION 4. FIRST AID MEASURES

Inhalation: When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration if needed. Keep warm and at rest. Get medical attention immediately.

Skin Contact: Remove contaminated clothing, jewelry and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemicals remains (at least 15-20 minutes). For burns, cover affected area securely with sterile, dry, loose-fitting dressing. Get medical attention immediately.

Eye Contact: Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Continue irrigating with normal saline until ready to transport to hospital. Cover with sterile bandages. Get medical attention immediately.

Ingestion: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. Give water or milk. If vomiting occurs, keep

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head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

Note to Physician: For inhalation, consider oxygen. For ingestion, consider gastric lavage.

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

Extinguishing Media:	Carbon dioxide, regular dry chemical, regular foam, water.
Large Fires:	Use regular foam or flood with fire water spray.
Fire Fighting:	Move container from fire area if it can be done without risk.

Do not get water inside container. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material.

Large fires: flood with fine water spray. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Flash Point: <5 F (<-15°C) (PMCC)

Flammability Class (OSHA): N/A

SECTION 6. ACCIDENTAL RELEASE MEASURES

Occupational Release:

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leaks if possible without personal risk. Reduce vapors with water spray. Do not get water inside container.

Small spills: absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Notify local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at 800-424-8802 (USA) or 202-426-2675 (USA).

SECTION 7. HANDLING STORAGE

Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. See

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original container for storage recommendations. Keep separated from incompatible substances.

SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure limits

Tetrahydrofuran:

200 ppm (590 mg/m³) OSHA TWA

250 ppm (737 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

200 ppm ACGIH TWA

250 ACGIH STEL

200 ppm (590 mg/m³) NIOSH recommended TWA 10 hours

250 ppm (735 mg/m³) NIOSH recommended STEL

150 mg/m³ (50 ml/m³) DFG MAK (peak limitation category – I)

100 ppm (300 mg/m³) UK OES TWA (skin)

200 ppm (599 mg/m³) UK OES STEL (skin)

Ventilation: Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

Eye Protection: Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Clothing: Wear appropriate chemical resistant clothing.

Gloves: Wear appropriate chemical resistant gloves.

Respirator: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full face piece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full face piece and is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations of Immediately Dangerous to Life of Health-

Any supplied-air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full face piece.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Description:

Liquid Color: Colorless

Odor: None

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Boiling Point: N/A
Freezing Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Specific Gravity: N/A
Water Solubility: N/A
PH: N/A
Volatility: N/A
Odor Threshold: N/A
Evaporation Rate: N/A
Coefficient of Water/Oil Distribution: N/A
Density 0.99g/ml@20°C

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressure. May form explosive peroxides. Avoid prolonged storage or contact with air, light or storage and use above room temp. Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Keep out of water supplied and sewers.

Incompatibilities: Acids, bases, halogens, metals, oxidizing materials, combustible materials, metal oxides, metal salts.

Hazardous Decomposition:
Thermal decomposition products: oxides of carbon.

Polymerization: Polymerizes with evolution of heat. Avoid contact with heat, acids, or amines. Will not polymerize.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity Data for Tetrahydrofuran:
21000 ppm inhalation-human TCl₀; 1650 mg/kg oral-rat LD₅₀; 21000 ppm/3 hours inhalation-rat LC₅₀; 24000 mg/m³/2 hours inhalation-mouse LCl₀; 2300 mg/kg oral-guinea pig LD₅₀;

Local Effects: irritant: inhalation, eye.
Acute Toxicity Level: Moderately
Toxic: ingestion
Slightly Toxic: inhalation
Target Organs: Central Nervous system
Medical Conditions Aggravated

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By Exposure: eye disorders, kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies.

Mutagenic Data: mutation in microorganisma – Escherichia coli 1 umol/L (-S9)

Reproductive Effects Data: 5000 ppm inhalation-rat TClO/6 hours 6-19 days pregnant female continuous; 1800 ppm inhalation-mouse TClO/6 hours 6-17 days pregnant female continuous.

Additional Data: Alcohol may enhance the toxic effects.

Toxicity Data for 1-Methylimidazole:

400-640 mg/kg skin-rabbit LD50 (BASF); 1400 mg/kg oral-mouse LD50.

Local Effects: corrosive: inhalation, skin, eye, ingestion.

Acute Toxicity Level: Toxic: Dermal absorption

Moderately Toxic: ingestion

SECTION 12. ECOLOGICAL INFORMATION

N/A

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT (49CFR)

UN Number – UN2924, Class 3, (8) Packing Group II

Proper Shipping Name: Flammable Liquid, Corrosive N.O.S. (Tetrahydrofuran, 1-Methylimidazole Solution)

Reportable Quantity (RQ) 1000 lbs

Marine Pollutant: No

Poison Inhalation Hazard (PIH): No

AIR TRANSPORT (ICAO/IATA)

UN Number – UN2924, Class 3, (8) Packing Group II

Proper Shipping Name: Flammable Liquid, Corrosive N.O.S. (Tetrahydrofuran, 1-Methylimidazole Solution)

MARINE TRANSPORT (IMDG/IMO)

UN Number – UN2924, Class 3, (8) Packing Group II,

Proper Shipping Name: Flammable Liquid, Corrosive N.O.S. (Tetrahydrofuran, 1-Methylimidazole Solution)

Marine Pollutant: No

EMS-No: F-E, S-C

SECTION 15 REGULATORY INFORMATION

U.S. Regulations: TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

Tetrahydrofuran

CERCLA SECTION 103 Hazardous Substances (40CFR 302.4): Y Acetic Anhydride: 5000 LBS RQ

Tetrahydrofuran: 1000 LBS RQ

SARA SECTION 302 (40 CFR 355.30): Not Regulated. SARA SECTION 304 (40 CFR 355.40): Not Regulated. SARA SECTION 313 (40 CFR 372.65): Not Regulated.

SARA TITLE III SECTION 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21): Acute: Yes Chronic: Yes Fire: Yes Reactive: Yes

Sudden Release: No

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

SECTION 16. OTHER INFORMATION

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-----