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Cambridge Isotope Laboratories, Inc.

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## CERTIFICATE OF ANALYSIS

**Product Name:** 0.1% ETHYLBENZENE  
(Isotopic Label & Enrichment Specification) IN CHLOROFORM-D

**Lot Number:** BP-674

**Catalog Number:** DLM-5008-0

### Product Information

Chemical Purity Specification:  $\geq 98\%$   
Labeled CAS Number: See MSDS  
Unlabeled CAS Number: See MSDS  
Molecular Weight: See MSDS  
Chemical Formula: See MSDS  
Storage: Store at room temperature away from light and moisture.  
Stability: Stable if stored under recommended conditions.

### Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible.

Approved by: *Jeffrey O'Neill*

Jeffrey O'Neill, Quality Assurance

### Quality Control Tests and Results

<sup>1</sup>H NMR for Chemical Purity

Pass

**CAMBRIDGE ISOTOPE LABORATORIES**  
 50 Frontage Road, Andover, Massachusetts 01810

## Material Safety Data Sheet

PLEASE NOTE: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally unavailable, but are assumed to be similar or identical to the corresponding unlabeled compound. While the information contained is believed to be accurate, it does not claim to be all inclusive, and should be used only as a guide. CIL, Inc., extends no warranties with respect hereto and disclaims all liabilities from reliance thereon. Judgments as to the suitability of the data presented with respect to the use of the product are the responsibility of the purchaser and intended user.

**Section 1.**

**Chemical Product and Company Identification**

CATALOG NO.

**0.1% Ethylbenzene  
 (in Chloroform-d)**

**DLM-5008**

**Manufacturer's Name**

Cambridge Isotope Laboratories, Inc.  
 50 Frontage Road  
 Andover, MA 01810  
 USA.

**Emergency Telephone No.**

USA: 1-800-424-9300  
 USA, for Information:  
 (800) 322-1174

**Emergency Telephone No.**

INT: 1-202-483-7616  
 International, for Information:  
 (978) 749-8000

Date Prepared: 09-Jan-03

Supersedes: All previous.

**Section 2. Hazard. Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Names)

**Chemical Names**

0.1% Ethylbenzene  
 Chloroform-d

**CAS Number**

100-41-4 (Unlabeled)  
 865-49-6

**RTECS No.:**

FS9100000

**OSHA PEL**

8H TWA 100ppm  
 Not established.

**ACGIH TLV**

TWA 100ppm STEL 125ppm  
 Not established.

**Section 3. Hazard Identification.**

**Appearance:**

Power

**Potential health effects:**

May cause nervous system disturbances. May cause heritable genetic damage.

**Routes of Entry:**

Inhalation, ingestion, skin absorption.

**Symptoms of exposure:**

Nausea, dizziness, headache.

**Target organs:**

Liver, kidneys, nerves, heart.

**Warnings:**

Toxic. Carcinogen. Mutagen. Irritant. Hygroscopic.(Chloroform) Flammable.(Ethylbenzene)

**Section 4. First Aid Measures.**

On contact, flush eyes or skin with lots of water for at least 15 min.

Breathing: If breathing is difficult, give oxygen.

Treat contaminated eyes by prolonged irrigation with lots of water.

Not breathing: If not breathing, give artificial respiration.

If inhaled, remove to fresh air.

Swallowed: Wash out mouth with water if person is conscious.

Call a physician.

**Section 5. Fire-Fighting Measures.**

**Extinguishing Media:**

Nonecombustible. Use extinguishing media appropriate to surrounding fire conditions.

**Methods and cautions:**

Wear self-contained breathing apparatus and protective clothing.

Prevent contact with skin and eyes.

Emits toxic fumes under fire conditions.

Flammable LEL:

Not available.

Flammable UEL:

Not available.

**Section 6. Accidental Release Measures.**

Evacuate area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Absorb on sand or vermiculite and place in closed containers for disposal.

Ventilate area and wash spill site after material pickup is complete.

**Hygiene warning:**

Wash thoroughly after handling.

**Respiratory protection:**

Wear NIOSH/MSHA approved respirator.

**0.1% Ethylbenzene**

DLM-5008

**Section 7. Handling and Storage.**

General warning: Toxic. Carcinogen. Mutagen. Irritant. Hygroscopic.(Chloroform) Flammable.(Ethylbenzene)  
Handling procedures: Avoid contact with eyes, skin, and clothing.  
Storage procedures: Store in a cool, dry place. Protect from light. Keep tightly closed.  
Hygiene instructions: Wash thoroughly after handling.  
Other: Use only in a chemical fume hood.

**Section 8. Exposure Controls and Personal Protection.**

General controls: Avoid all contact. Do not breathe vapor.  
Eye/face protection: Chemical safety goggles.  
Skin Protection: Wear suitable protective clothing.  
Respiratory protection: Wear NIOSH/MSHA approved respirator.

**Section 9. Physical/Chemical Characteristics.**

Molecular weight:	116.25 (Ethylbenzene)	Autoignition temperature:	Above 1000°C
Appearance:	Colorless liquid.	Flash point/Method:	None (Chloroform)
Odor:	Pleasant, sweet odor.	Melting point:	Not available.
Physical state:	Liquid.	Boiling point:	60.9°C (Chloroform)
pH:	Not available.	Freezing point:	Not available.
Vapor pressure:	Not available.		
Vapor density:	Not available.		
Solubility in water:	Not available.		
Specific gravity/density:	1.50 (Chloroform)		

**Section 10. Stability and Reactivity.**

Chemical Stability: Stable if stored under recommended conditions.  
Conditions to Avoid: Not available.  
Incompatibilities: Bases, aluminum. Sensitive to light. Protect from moisture.  
Hazardous Decomposition: Toxic fumes of carbon dioxide, carbon monoxide, hydrogen chloride gas, phosgene gas.  
Hazardous Polymerization: Will not occur.

**Section 11. Toxicological Information (see Section 3 on first page).**

Acute data: May be fatal if inhaled, swallowed, or absorbed through skin.  
Vapor or mist is irritating to the eyes, mucous membranes and upper respiratory tract.  
Causes skin irritation.

Chronic data: Carcinogen.  
May alter genetic material.  
Toxicological properties have not been fully investigated, to the best of our knowledge.

**Section 12. Ecological Information (Impact if released into environment).**

Not available.

**Section 13. Disposal Considerations.**

The material should be ignited in the presence of sodium carbonate and slaked lime (calcium hydroxide).  
The substance should be mixed with vermiculite and then with the dry caustics, wrapped in paper and burned in a chemical incinerator equipped with an afterburner and scrubber. Follow all Federal, State and Local environmental regulations.

**Section 14. Transport Information.**

UN#: UN1888; PKG GRP 111, HAZ. CLASS 6.1 (UPS; Keep away from food. FEDEX: TOXIC)

**Section 15. Regulatory Information.**

Chloroform (unlabeled): Sec. 302(EHS)T024PQ:10,000;Sec.304(EHS)RQ:--;CFR/CL A RQ 10;SARA Sec. 313; RCRA Code U044;

**Section 16. Other Information.**

Not available.