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**Cambridge Isotope Laboratories, Inc.**50 Frontage Road, Andover, MA 01810-5413 USA
800.322.1174 (N.AMERICA) 978.749.8000 (INTERNATIONAL)
www.isotope.com**CERTIFICATE OF ANALYSIS****Product Name:** 80% ETHYLENE GLYCOL +
(Isotopic Label & Enrichment Specification) 20% DMSO-D6**Lot Number:** BP-561**Catalog Number:** DLM-5006-0**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

1H NMR for Chemical Purity

Pass

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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.

80% Ethylene Glycol + 20% DMSO-d6

DLM-5006

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: 26-Aug-03

Supersedes: All previous.

Section 2. Hazard. Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Names)

Chemical Names	CAS Number
Ethylene Glycol	107-21-1 (Unlabeled)
Dimethyl Sulfoxide-d6 (DMSO)	2206-27-1

RTECS No.:

OSHA PEL
 Not established.
 Not established.

KW2975000 (Ethylene Glycol)

ACGIH TLV
 Not a human carcinogen.
 Not established.

Section 3. Hazard Identification.

Appearance:

Viscous colorless liquid.

Potential health effects:

Possible risk of harm to the unborn child. Possible risk of impaired fertility.

Routes of Entry:

Inhalation, ingestion, skin absorption.

Symptoms of exposure:

Exposure can cause nausea, headache and vomiting. Ingested: mimics alcohol inebriation.

Target organs:

Central nervous system, kidneys, eyes, cardiovascular system, and liver.

Warnings:

Toxic. Harmful. (Ethylene Glycol) Sensitizer. Irritant. Hygroscopic. (DMSO)

Section 4. First Aid Measures.

On contact, flush eyes with lots of water for at least 15 minutes.

Breathing: If breathing is difficult, give oxygen.

On contact, wash skin with soap and 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:

Water spray, carbon dioxide, dry chemical powder or appropriate foam.

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: 3.2% (Ethylene Glycol) Flammable UEL: 15.3% (Ethylene Glycol)

Section 6. Accidental Release Measures.

Wear respirator, chemical safety goggles, 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 appropriate NIOSH/MSHA approved respirator.

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Section 7. Handling and Storage.

General warning: Chemical safety goggles.
 Avoid contact with eyes, skin and clothing.
 Handling procedures: Store in a cool, dry place and keep container tightly closed.
 Storage procedures: Wash thoroughly after handling.
 Hygiene instructions: Mechanical exhaust required.
 Other:

Section 8. Exposure Controls and Personal Protection.

General controls: Avoid prolonged or repeated exposure. Do not breathe vapor.
 Chemical safety goggles.
 Eye/face protection: Wear suitable protective clothing.
 Skin Protection: Wear appropriate NIOSH/MSHA approved respirator.
 Respiratory protection:

Section 9. Physical/Chemical Characteristics.

Molecular weight:	62.07 (Ethylene Glycol)	Autoignition temperature:	752°F 399°C (Ethylene Glycol)
Appearance:	Viscous colorless liquid.	Flash point/Method:	>110°C (230°F) (Ethylene Glycol)
Odor:	Not available.	Melting point:	-13°C (Ethylene Glycol)
Physical state:	Liquid.	Boiling point:	196°C to 198°C (Ethylene Glycol)
pH:	Not available.	Freezing point:	Not available.
Vapor pressure:	0.08MM 20°C (Ethylene Glycol)		
Vapor density:	2.1 (Air=1) (Ethylene Glycol)		
Solubility in water:	Miscible. (Ethylene Glycol)		
Specific gravity/density:	1.113 (Ethylene Glycol)		

Section 10. Stability and Reactivity.

Chemical Stability: Stable if stored under recommended conditions.
 Conditions to Avoid: Not available.
 Incompatibilities: Heat, strong acids, strong oxidizing agents, strong bases. Protect from moisture.
 Hazardous Decomposition: Toxic fumes of carbon dioxide and carbon monoxide.
 Hazardous Polymerization: Will not occur.

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

Acute data: Harmful if swallowed. May be harmful if inhaled and/or absorbed through the skin.
 Vapor or mist is irritating to the eyes, mucous membranes and upper respiratory tract.
 Causes skin irritation. May cause nervous system disturbances.

Chronic data: Possible risk of congenital malformation in the fetus. (Ethylene Glycol)
 Overexposure to Ethylene Glycol may cause reproductive disorder(s) based on tests with laboratory animals.

Section 12. Ecological Information (impact if released into environment).
EPA TSCA Chemical inventory, June 1990.**Section 13. Disposal Considerations.**

Dissolve or mix the material with a combustible solvent.
 Burn in a chemical incinerator equipped with an afterburner and scrubber.
 Observe all Federal, State and Local environmental regulations.

Section 14. Transport Information.

Follow all Federal, State and Local transportation guidelines.

Section 15. Regulatory Information.

This product is subject to SARA Section 313 reporting requirements. (Ethylene Glycol)

Section 16. Other Information.

Not available.