



CERTIFICATE OF ANALYSIS

Product Name: DEUTERIUM OXIDE "100%"
(Isotopic Label & Enrichment Specification) (D, 99.96%)

Lot Number: 13G-450

Catalog Number: DLM-6-10X1

Product Information

Chemical Purity Specification: $\geq 99.5\%$
Labeled CAS Number: 7789-20-0
Unlabeled CAS Number: 7732-18-5
MW of fully enriched product: 20.03
Chemical Formula: D₂O
Storage: Store at room temperature.
Stability: Stable if stored under recommended conditions.

Certification

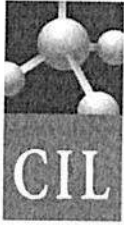
Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Approved by: Marina Kliensky

Marina Kliensky, Quality Assurance

Quality Control Tests and Results

1H NMR for Chemical Purity	Pass
1H NMR for Isotopic Enrichment	99.98%
Conductivity	0.8 μ S/cm
pH Analysis	5.2 (uncorrected)
Total Organic Carbon	0.2 ppm



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Andover, MA 01810

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Issue Date

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MATERIAL SAFETY DATA SHEET

1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Description DEUTERIUM OXIDE "100%" (D, 99.96%)

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
ANDOVER, MA 01810
USA

E-mail cilsales@isotope.com
Web Site www.isotope.com

Phone Numbers

Emergency Contact Chemtrec
Emergency Phone 1-800-424-9300 (24 hours)

Customer Service 1-800-322-1174 (8:30-5:30 EST)
Phone
Transportation 1-202-483-7616 (24 hours)

2 HAZARDS IDENTIFICATION

OSHA Hazards

No OSHA Hazards

HMIS Ratings

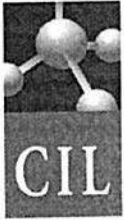
Physical 0
Flammability 0
Health 0

NFPA Codes

Fire 0
Health 0
Reactivity 0

Potential Health Effects

Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.
Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.



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3 COMPOSITION / INFORMATION ON INGREDIENTS

Composition / Information on Ingredients

Chemical Formula	D2O
Molecular Weight	20.03
CAS No.	7789-20-0
EC No.	231-791-2

4 FIRST AID MEASURES

First Aid Measures

Eyes	Flush eyes with water as a precaution.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Inhalation	If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin	Wash with soap and plenty of water. Consult a physician.
Additional Information	Move out of dangerous area. Consult a physician and show this safety data sheet.

5 FIRE FIGHTING MEASURE

Fire Fighting Measures

Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire Fighting Equipment	Wear self contained breathing apparatus for fire fighting if necessary.
Fire Fighting Procedures	The product itself does not burn.

6 ACCIDENTAL RELEASE MEASURES

Accidental Release Measures



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Personal Precautions	Avoid breathing vapors, mist, or gas.
Environmental Precautions	No special environmental precautions required.
Methods and materials for containment and cleanup	Keep in suitable, closed containers for disposal.

7 HANDLING AND STORAGE

Conditions for Safe Storage

Storage	Store at room temperature away from light and moisture.
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8 EXPOSURE CONTROL / PERSONAL PROTECTION

Personal Protection

Eyes - Face	Wear safety glasses with side shields (or goggles) and a face shield.
Skin	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory	When appropriate, use NIOSH/CEN approved respirator.
Protective Clothing	Wear suitable protective clothing and gloves.
Work Hygienic Practices	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties (Unlabeled Compound)

Form	Liquid
Color	Colourless
pH	6.0 - 8.0 at 25 °C (77 °F)
Melting Point	0.0 °C (32.0 °F)
Boiling Point	100.0 °C (212.0 °F)



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Flashpoint	Not applicable
Lower Explosion Limit	Not applicable
Upper Explosion Limit	Not applicable
Solubility in Water	Completely miscible
Auto Ignition Temperature	Not applicable

10 STABILITY AND REACTIVITY

Stability and Reactivity

Chemical Stability	Stable if stored under recommended conditions.
Possibility of Hazardous Reactions	Not available
Conditions to Avoid	Not available
Hazardous decomposition products	No data available
Materials to avoid	No data available

11 TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral Rat	> 90,000 mg/kg
Serious Damage/Eye Irritation	No data available
Skin Corrosion/Irritation	No data available
Inhalation	No data available
Respiratory or Skin Sensitization	Not available
Germ Cell Mutagenicity	Not available



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IARC	No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible, or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
NTP	No component of this product present at levels greater than or equal to 0.1% is identifiable as a known or anticipated carcinogen by NTP.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive Toxicity	Not available

Signs and Symptoms of Exposure

The chemical, physical, and toxicological properties have not been thoroughly investigated.

12 ECOLOGICAL INFORMATION

Toxicity

Persistence and Degradability	Not available
Bioaccumulative Potential	Not available
Mobility in Soil	Not available
PBT and vPvB Assessment	Not available
Other Adverse Effects	Not available

13 DISPOSAL CONSIDERATIONS

Disposal Considerations

Product Disposal Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.

14 TRANSPORT INFORMATION

Transportation Information-DOT/IATA/IMDG



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Special Shipping Notes Not dangerous goods.

15 REGULATORY INFORMATION

Regulatory Information

No OSHA Hazards

SARA

Sara 302 Component No chemicals in this material are subject to the reporting requirements.

Sara 313 Component No chemicals in this material are subject to the reporting requirements.

STATE REGULATIONS

Massachusetts Right to Know No

Pennsylvania Right to Know Yes

New Jersey Right to Know Yes

California Proposition 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Canada

DSL Status All components are on the Canadian DSL list.

16 OTHER INFORMATION

Additional MSDS Information 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 not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Approved On 09/05/12
Version Number 2