SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form : Substance
Substance name : DEUTERIUM OXIDE (D, 99.9%)
EC-No. : 232-148-9 (Unlabeled)
CAS-No. : 7789-20-0
Product code : DLM-4
Formula : D2O
Other means of identification : Also applicable to:
DLM-4-65          (D, 60-70%)
DLM-4-70          (D, 70%)
DLM-4-70A CST    (D, 70%)
DLM-4-70-L        (D, 70%)
DLM-4-70-OW       (D, 70%)
DLM-4-80          (D, 80%)
DLM-4-85          (D, 85%)
DLM-4-90          (D, 90%)
DLM-4-95          (D, 95%)
DLM-4-99          (D, 99%)
DLM-4-99.8        (D, 99.8%)
DLM-4-99.8-LE     (D, 99.8% LOW ENDOTOXIN)
DLM-4-99.8-OX     (D, 99.8%)
DLM-4-S           (D, 99.9% SERUM)
DLM-4-DR          (D, 99.9%)
DLM-4-DR-99       (D, 99%)
DLM-4-DR-99.8     (D, 99.8%)

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses
Main use category : Professional use
Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA
USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number
Emergency numbers:
Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Not classified

GHS-US classification
Not classified
Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements
Labeling according to Regulation (EC) No. 1272/2008 [CLP]
No labeling applicable

GHS-US labeling
No labeling applicable

2.3. Other hazards
No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Directive 67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEUTERIUM OXIDE (D, 99.9%)</td>
<td>(CAS-No.) 7789-20-0 (EC-No.) 232-148-9 (Unlabeled)</td>
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<td>Not classified</td>
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<td>100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of R- and H-phrases: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: First aid measures are not required for this material.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects: Will not present a hazard under anticipated conditions of normal use if inhaled, swallowed, or in contact with skin.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
No additional information available

5.2. Special hazards arising from the substance or mixture
Fire hazard: Not flammable.
Reactivity: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters
No additional information available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Protective equipment: Use appropriate personal protection equipment (PPE).

04/12/2019 EN (English US)
6.1.2. For emergency responders
Protective equipment : Use personal protective equipment as required.

6.2. Environmental precautions
No additional information available

6.3. Methods and material for containment and cleaning up
Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
No additional information available

7.2. Conditions for safe storage, including any incompatibilities
Technical measures : Keep container tightly closed in a dry and well-ventilated place.
Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls : Contains no substances with occupational exposure limits.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state : Liquid
Appearance : Clear
Molecular mass : 20.03 g/mol (Labeled)
Color : Colorless
Odor : No data available
Odor threshold : No data available
pH : 6 - 8 at 25 °C (77 °F)
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : 4 °C (39.2 °F)
Freezing point : 4 °C (39.2 °F)
Boiling point : 101.4 °C (213.8 °F)
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : No data available
Specific gravity / density : 1.11 g/m³ at 20 °C (68 °F) (Labeled)
Solubility : Water: Completely miscible
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : No data available

9.2. Other information
No additional information available
SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions
None under normal use.

10.4. Conditions to avoid
None.

10.5. Incompatible materials
None.

10.6. Hazardous decomposition products
Does not decompose under normal conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified
Skin corrosion/irritation: No skin irritation
  pH: 6 - 8 at 25 °C (77 °F)
Serious eye damage/irritation: No eye irritation
  pH: 6 - 8 at 25 °C (77 °F)
Respiratory or skin sensitization: Not a sensitizer.
Germ cell mutagenicity: No mutagenic effects.
Carcinogenicity: Not classified
Reproductive toxicity: No toxicity to reproduction.
Specific target organ toxicity – single exposure: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Specific target organ toxicity – repeated exposure: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration hazard: No aspiration toxicity classification.
Potential Adverse human health effects and symptoms: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Regional legislation (waste): Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
**SECTION 14: Transport information**

<table>
<thead>
<tr>
<th>14.1. UN number</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3. Additional information</th>
<th>Other information : No supplementary information available.</th>
</tr>
</thead>
</table>

**Overland transport**
No additional information available

**Transport by sea**
No additional information available

**Air transport**
No additional information available

**14.4. Environmental hazards**
Other information : No supplementary information available.

**14.5. Special precautions for user**
Not applicable

**14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**SECTION 15: Regulatory information**

**15.1. US Federal regulations**

<table>
<thead>
<tr>
<th>DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 302 Threshold Planning Quantity (TPQ)</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting</td>
</tr>
</tbody>
</table>

**15.2. International regulations**

**CANADA**

<table>
<thead>
<tr>
<th>DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
</tbody>
</table>

**15.2.1. National regulations**
No additional information available

**15.3. US State regulations**

<table>
<thead>
<tr>
<th>DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
</tr>
</tbody>
</table>
| State or local regulations | U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List |
DEUTERIUM OXIDE (D, 99.9%) DLM-4
Safety Data Sheet

SECTION 16: Other information

Other 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.

NFPA health hazard: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity: 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating
Health: 0 Minimal Hazard - No significant risk to health
Flammability: 0 Minimal Hazard
Physical: 0 Minimal Hazard

CIL Substance SDS
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.