SAFETY DATA SHEET

Deuterium oxide (D_2O)
Elemental Nova LLC — D2O-998-10X1ML
Revision 3 — 1 October 2026
Prepared to OSHA Hazard Communication Standard, 29 CFR 1910.1200 (GHS). Elemental Nova LLC is the responsible party for this packed product. Lot assay is stated only on the certificate of analysis.

SECTION 1 — Identification

Product name: Deuterium oxide
Trade name / pack: Deuterium 10 × 1 mL
Product number: D2O-998-10X1ML
CAS number: 7789-20-0
EC number: 232-148-9
RTECS: ZC0230000
Formula: D_2O
Packaging: 10 × 1 mL, borosilicate glass, heat-sealed ampoules 1.2 Identified uses: Laboratory / research chemical (including NMR). Manufacture of substances in a research setting.
Uses advised against: Administration to humans or animals. Food, drug, cosmetic, or household use. Sale or shipment outside the United States.1.3 Supplier (responsible party)
Elemental Nova LLC
6404 FM 1715
Lampasas, TX 76550
USA
Phone: 254-206-6708
Email: sales@elementalnovallc.com 1.4 Emergency telephone
254-206-6708 (Elemental Nova LLC)
For medical advice: Poison Control 1-800-222-1222

SECTION 2 — Hazard identification

2.1 Classification (GHS / OSHA HCS): Not classified as a hazardous substance.
Pictogram: None
Signal word: None
Hazard statements: None required
Precautionary statements (good practice): Use only for research. Avoid moisture uptake (hygroscopic). Do not freeze. See Sections 7 and 8.
2.3 Other hazards: None identified beyond ordinary laboratory handling of a water-like liquid. Product is hygroscopic; opened containers can lose deuterium enrichment if exposed to moist air.

SECTION 3 — Composition / information on ingredients

Substance (not a mixture). No additives. Repack only.
Chemical name: Deuterium oxide
Synonyms: D_2O, heavy water, water-d_2, deuterium-enriched water
Formula: D_2O
Molecular weight: 20.03 g/mol

CAS / EC: See Section 1
Typical enrichment: ≥99.8 atom % D
Lot assay: Reported on the certificate of analysis for that batch only
Other components: None added
OSHA: Not hazardous according to OSHA criteria (source classification)

SECTION 4 — First-aid measures

Inhalation: Move to fresh air. If not breathing, give artificial respiration.
Skin contact: Wash with soap and water.
Eye contact: Flush with water as a precaution.
Ingestion: Do not give anything by mouth to an unconscious person. If conscious, rinse mouth with water. Drink extra water.
4.2 Most important symptoms: See Section 11. No specific symptoms identified on the source SDS.
4.3 Immediate medical attention: If the person is not breathing or is unconscious, follow 4.1 and obtain medical help. Poison Control: 1-800-222-1222.

SECTION 5 — Firefighting measures

5.1 Extinguishing media: Water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. Suitable for the surrounding fire.
5.2 Special hazards: None known from the substance.
5.3 Advice for firefighters: Self-contained breathing apparatus if the fire environment requires it.
5.4 Further information: None.

SECTION 6 — Accidental release measures

6.1 Personal precautions: Avoid breathing mist or vapor. Use Section 8 PPE.
6.2 Environmental precautions: Do not discharge to drains.
6.3 Containment and clean-up: Contain with a physical barrier or inert absorbent. Collect liquid into a suitable container. Rinse the area with water.
6.4 References: Disposal — Section 13.

SECTION 7 — Handling and storage

7.1 Safe handling: Research use only. Use eye protection, gloves, and protective clothing as in Section 8. Open ampoules in a manner that limits moisture contact if isotopic enrichment must be preserved.
7.2 Storage: Store at +4 °C to +40 °C. Freezing point about +3.8 °C. If frozen, thaw at room temperature and check the container for leaks. Keep tightly closed. Hygroscopic. After opening, reseal; inert gas may be used if enrichment must be held. Do not freeze during storage or transport.
7.3 Specific end use: See Section 1.2. Pack is 10 × 1 mL heat-sealed borosilicate ampoules.

SECTION 8 — Exposure controls / personal protection

8.1 Occupational exposure limits: Not established / not available for deuterium oxide.
8.2 Engineering controls: Ordinary laboratory ventilation and hygiene.
Eye / face: Safety glasses with side shields or face shield.
Skin: Protective clothing.
Hands: Gloves (e.g. neoprene); wash hands after handling.

Respiratory: Not usually needed unless significant mist or vapor is generated.
Environmental: Do not contaminate surface or groundwater.

SECTION 9 — Physical and chemical properties

Physical state: Liquid
Color: Colorless
Odor: Odorless
Odor threshold: No data
pH: ~7
Melting / freezing point: 3.8 °C
Boiling point: 101–102 °C
Flash point: Not determined
Evaporation rate: No data
Flammability: Not relevant
Explosive limits: No data
Vapor pressure: No data
Density: 1.104 g/cm³ at 25 °C
Vapor density: No data
Bulk density: Not applicable
Water solubility: Miscible in any proportion
Partition coefficient: No data
Autoignition: No data
Decomposition temperature: No data
Viscosity: Not determined
Explosive properties: Not classified as explosive
Oxidizing properties: None

SECTION 10 — Stability and reactivity

10.1 Reactivity: Not reactive under normal ambient temperatures.
10.2 Chemical stability: Stable under expected storage and handling temperature and pressure.
10.3 Hazardous reactions: None known.
10.4 Conditions to avoid: Freezing. Prolonged open-air moisture contact if enrichment must be preserved.
10.5 Incompatible materials: No additional information on the source SDS.
10.6 Hazardous decomposition products: None known for this material.

SECTION 11 — Toxicological information

Source classification: not classified for the endpoints below.
Acute toxicity: Not classified as acutely toxic
Skin corrosion / irritation: Not classified as an irritant
Serious eye damage / irritation: Not classified
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT — single exposure: Not classified

STOT — repeated exposure: Not classified
Aspiration hazard: Not classified
Additional: No data on the source SDS. Not for human or animal administration.

SECTION 12 — Ecological information

12.1 Toxicity: No data
12.2 Persistence / degradability: No data
12.3 Bioaccumulation: No data
12.4 Mobility in soil: No data
12.5 PBT / vPvB: No data; chemical safety assessment not required on source SDS
12.6 Other adverse effects: None known. Do not release to drains or surface water.

SECTION 13 — Disposal considerations

Unused product and residues: Offer to a licensed disposal company. Follow local, state, and federal rules.
Empty ampoules: Treat as laboratory glass / chemical waste per the receiving institution's EHS program.
Do not pour to sanitary drains unless that institution's EHS authorizes it.

SECTION 14 — Transport information

DOT (U.S.): Not dangerous goods
IMDG: Not dangerous goods
UN number: Not applicable
Proper shipping name: Not applicable
Hazard class: Not dangerous goods
Packing group: Not applicable
Special handling: Do not freeze (freezing point +3.8 °C). United States shipment only.

SECTION 15 — Regulatory information

TSCA: Deuterium oxide is listed on the TSCA inventory (source SDS).
OSHA HCS: Not classified as hazardous.
California Proposition 65: Source SDS states the material does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.
REACH / EINECS / WHMIS / CNSC: Source manufacturer statements. Elemental Nova LLC supplies this pack for research use in the United States only and does not represent Canadian nuclear-export or EU-registration status for this listing.
Intended commerce: Research purchasers in the United States.

SECTION 16 — Other information

HMIS (source): Health 0 · Flammability 0 · Physical 0
NFPA (source): Health 0 · Fire 0 · Reactivity 0

Document basis: Elemental Nova LLC pack D2O-998-10X1ML. This listing is specified as ≥99.8 atom % D, with the measured assay on the lot COA.

Updated: 1 October 2026 · Revision 3 Disclaimer: The information is believed accurate based on the source SDS and the product description supplied by Elemental Nova LLC. It is provided without warranty. Users must confirm suitability for their purpose and comply with their institution’s EHS rules. Elemental Nova LLC is not liable for incidental or consequential damages from use of this information or the product. Elemental Nova LLC · 6404 FM 1715, Lampasas, TX 76550 · 254-206-6708 · sales@elementalnovallc.com