

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

1.1. Product identifier

Product form	: Substance
Substance name	: deuterium oxide
EC no	: 232-148-9
CAS No.	: 7789-20-0
Product code	: D211, D212, D214, D215, D216, DLM-4, DLM-6, DLM-11, DLM-2259
Formula	: D2O
Synonyms	: deuterated water / dideuterium oxide / heavy water / heavy water-D2 / water*2-H2 / water-D2

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
Function or use category	: Chemical substance for research. NMR solvent.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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91194 Saint-Aubin CEDEX - France - FRANCE
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eurisotop@eurisotop.com - www.eurisotop.com

1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number
UNITED KINGDOM	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241

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 or 1999/45/EC

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
deuterium oxide (Main constituent)	(CAS No.) 7789-20-0 (EC no) 232-148-9	100	Not classified
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
deuterium oxide (Main constituent)	(CAS No.) 7789-20-0 (EC no) 232-148-9	100	Not classified

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

3.2. Mixtures

Not applicable

deuterium oxide

Safety Data Sheet

according to Regulation (EC) No. 453/2010

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Not applicable.
First-aid measures after skin contact	: Not applicable.
First-aid measures after eye contact	: Not applicable.
First-aid measures after ingestion	: Rinse mouth with water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Unlikely to cause harmful effects.
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4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: EXTINGUISHING MEDIA FOR SURROUNDING FIRES : All extinguishing media allowed.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD. Non combustible.
Explosion hazard	: DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.
Reactivity	: No data available.

5.3. Advice for firefighters

Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Protective clothing.
Emergency procedures	: Mark the danger area.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment	: Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. If possible, allow spill to evaporate under surveillance.
Methods for cleaning up	: Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Comply with the legal requirements. Thoroughly clean/dry the installation before use. Keep container tightly closed.
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7.2. Conditions for safe storage, including any incompatibilities

Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: water/moisture.
Storage area	: Store in a dry area. Store at ambient temperature. May be stored under nitrogen. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: Glass. MATERIAL TO AVOID: No data available.

7.3. Specific end use(s)

No additional information available

deuterium oxide

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according to Regulation (EC) No. 453/2010

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: No data available. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.
Hand protection	: Gloves.
Skin and body protection	: Protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 20.03 g/mol
Colour	: Colourless.
Odour	: Odourless.
Odour threshold	: No data available
pH	: No data available
Melting point	: 3.8 °C
Solidification point	: No data available
Boiling point	: 101 °C
Flash point	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Vapour pressure	: 27 hPa (20 °C)
Relative vapour density at 20 °C	: 0.69
Relative density	: 1.1
Density	: 1120 kg/m ³
Solubility	: Exothermically soluble in water. Water: 100 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Self ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

9.2. Other information

Minimum ignition energy	: Not applicable
VOC content	: Not applicable
Other properties	: Gas/vapour lighter than air at 20°C. Hygroscopic. Volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

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10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - air	: Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009).
Ecology - water	: Severe water pollutant (surface water). Literature reports not toxic to water organisms.

12.2. Persistence and degradability

deuterium oxide (7789-20-0)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

deuterium oxide (7789-20-0)	
Bioaccumulative potential	Bioaccumulation: not applicable.

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

Waste disposal recommendations	: Remove to an authorized waste treatment plant.
Additional information	: LWCA (the Netherlands): KGA category 06.

SECTION 14: Transport information

No dangerous good in sense of transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

VOC content	: Not applicable
EURAL code	: 06 13 99

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No additional information available

deuterium oxide

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according to Regulation (EC) No. 453/2010

SECTION 16: Other information

SDS EU (REACH Annex II)

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