SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Deuterium oxide
Cat No. : 426930000; 426931000
Synonyms: Water, heavy; Water-d2
CAS-No: 7789-20-0
EC-No.: 232-148-9
Molecular Formula: D2 O

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

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

1.3. Details of the supplier of the safety data sheet

Company: Acros Organics BVBA
Janssen Pharmaceuticaalaven 3a
2440 Geel, Belgium
E-mail address: begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US: 001-800-424-9300 / Europe: 001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Based on available data, the classification criteria are not met

Health hazards
Based on available data, the classification criteria are not met

Environmental hazards
Based on available data, the classification criteria are not met

Classification according to EU Directives 67/548/EEC or 1999/45/EC
R-phrase(s): none

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

2.2. Label elements

ACR42693
Hazard Statements

Precautionary Statements

2.3. Other hazards

No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
<th>CLP Classification - Regulation (EC) No 1272/2008</th>
<th>DSD Classification - 67/548/EEC</th>
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</thead>
<tbody>
<tr>
<td>Water-d2</td>
<td>7789-20-0</td>
<td>EEC No. 232-148-9</td>
<td>&gt;95</td>
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<td>-</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Immediate medical attention is not required.
Skin Contact Immediate medical attention is not required.
Ingestion Immediate medical attention is not required.
Inhalation Immediate medical attention is not required.
Protection of First-aiders No special precautions required.

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

No information available

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

None known.
Hazardous Combustion Products None.
5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

None required. If spilled, take caution, as material can cause surfaces to become very slippery.

6.2. Environmental precautions

No special environmental precautions required. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

No special handling advice required.

7.2. Conditions for safe storage, including any incompatibilities

No special storage conditions required.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Derived No Effect Level (DNEL)

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Acute effects (local)</th>
<th>Acute effects (systemic)</th>
<th>Chronic effects (local)</th>
<th>Chronic effects (systemic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No information available.
Predicted No Effect Concentration (PNEC)  
No information available.

8.2. Exposure controls

Engineering Measures
None under normal use conditions.

Personal protective equipment

Eye Protection  Safety glasses with side-shields (European standard - EN 166)

Hand Protection  Protective gloves

Inspect gloves before use. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

Skin and body protection  Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection  No protective equipment is needed under normal use conditions.

Large scale/emergency use  Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type:  Particle filter.

Small scale/Laboratory use  Maintain adequate ventilation

Hygiene Measures  Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls  No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance  Colorless

Physical State  Liquid.

Odor  No information available

Odor Threshold  No data available

pH  7

Melting Point/Range  3.8°C / 38.8°F

Softening Point  No data available

Boiling Point/Range  101.4°C / 214.5°F

Flash Point  No information available.  Method - No information available.
Evaporation Rate: No data available
Flammability (solid, gas): Not applicable, Liquid
Explosion Limits: No data available.

Vapor Pressure: No data available
Vapor Density: No data available (Air = 1.0)
Specific Gravity / Density: 1.105
Bulk Density: Not applicable, Liquid
Water Solubility: miscible
Solubility in other solvents: No information available.

Partition Coefficient (n-octanol/water): No data available
Autoignition Temperature: No data available
Decomposition temperature: No data available
Viscosity: 1.25 mPa.s @ 20 °C
Explosive Properties: No information available.
Oxidizing Properties: No information available.

9.2. Other information
Molecular Formula: D2 O
Molecular Weight: 20.02

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
None known, based on information available.

10.2. Chemical stability
Stable under normal conditions. Hygroscopic.

10.3. Possibility of hazardous reactions
Hazardous Polymerization: No information available
Hazardous Reactions: No information available.

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
None known.

10.6. Hazardous decomposition products
None.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Product Information: No acute toxicity information is available for this product

(a) acute toxicity;
   Oral: No data available
   Dermal: No data available
   Inhalation: No data available

(b) skin corrosion/irritation;
   No data available
(c) serious eye damage/irritation; No data available
(d) respiratory or skin sensitization; No data available
  Respiratory  No data available
  Skin       No data available
(e) germ cell mutagenicity; No data available
(f) carcinogenicity; No data available
  There are no known carcinogenic chemicals in this product
(g) reproductive toxicity; No data available
(h) STOT-single exposure; No data available
(i) STOT-repeated exposure; No data available
  Target Organs  None known.
(j) aspiration hazard; No data available

Symptoms / effects, both acute and delayed No information available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

12.2. Persistence and degradability No information available

12.3. Bioaccumulative potential No information available.

12.4. Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment No data available for assessment

12.6. Other adverse effects
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from Residues / Unused Products Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated Packaging Empty remaining contents.

European Waste Catalogue (EWC) According to the European Waste Catalogue, Waste Codes are not product specific, but application specific
Other Information  Waste codes should be assigned by the user based on the application for which the product was used

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO  Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

ADR  Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

IATA  Not regulated

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group

14.5. Environmental hazards  No hazards identified

14.6. Special precautions for user  No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code  Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories  X = listed

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
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<tbody>
<tr>
<td>Water-d2</td>
<td>232-148-9</td>
<td>-</td>
<td></td>
<td>X</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

National Regulations

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
Not applicable

Legend
Deuterium oxide

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Existing and Evaluated Chemical Substances

WEL - Workplace Exposure Limit
ACGIH - American Conference of Industrial Hygiene
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

Key literature references and sources for data
Suppliers safety data sheet,
Chemadvisor - LOLI,
Merck index,
RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Creation Date 21-Apr-2009
Revision Date 11-Dec-2013
Revision Summary
Reason for revision Update to Format.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet