



2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H₂O/10% D₂O H₂O:D₂O=V/V

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 30/04/2015

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Supersedes: 30/04/2015

Version: 2.0

DLM-91

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

1.1. Product identifier

Product form : Mixtures
Product name : 2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H₂O/10% D₂O H₂O:D₂O=V/V
Product code : DLM-91

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

Not applicable

2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O

H2O:D2O=V/V DLM-91

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3.2. Mixtures

Name	Product identifier	%	Classification according to Directive 67/548/EEC
WATER UNLABELED	(CAS No) 7732-18-5 (EC No) 231-791-2	88.966	Not classified
DEUTERIUM OXIDE (D, 99.9%)	(CAS No) 7789-20-0 (EC No) 232-148-9	10.94	Not classified
SUCROSE UNLABELED	(CAS No) 57-50-1 (EC No) 200-334-9	0.068	Not classified
SODIUM AZIDE UNLABELED	(CAS No) 26628-22-8 (EC No) 247-852-1 (EC Index No) 011-004-00-7	0.013	T+; R26/27 T; R25 N; R51/53
(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE	(CAS No) 2039-96-5 (EC No) 218-031-5	0.011	Xi; R36/37/38

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
WATER UNLABELED	(CAS No) 7732-18-5 (EC No) 231-791-2	88.966	Not classified
DEUTERIUM OXIDE (D, 99.9%)	(CAS No) 7789-20-0 (EC No) 232-148-9	10.94	Not classified
SUCROSE UNLABELED	(CAS No) 57-50-1 (EC No) 200-334-9	0.068	Not classified
SODIUM AZIDE UNLABELED	(CAS No) 26628-22-8 (EC No) 247-852-1 (EC Index No) 011-004-00-7	0.013	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE	(CAS No) 2039-96-5 (EC No) 218-031-5	0.011	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Name	Product identifier	%	GHS-US classification
DEUTERIUM OXIDE (D, 99.9%)	(CAS No) 7789-20-0	10.94	Not classified
(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE	(CAS No) 2039-96-5	0.011	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

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

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. May cause moderate irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

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 : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

No additional information available

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H2O:D2O=V/V DLM-91

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5.3. Advice for firefighters

- Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Avoid breathing vapors, mist, gas. Avoid dust formation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Dam up the liquid spill. This material and its container must be disposed of in a safe way, and as per local legislation.
- Methods for cleaning up : Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

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 : Provide adequate ventilation to minimize dust and/or vapor concentrations.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in a well-ventilated place. Keep container tightly closed.
- Storage conditions : Store refrigerated (-5 C to 5 C). Protect from light.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

SODIUM AZIDE UNLABELED (26628-22-8)		
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	0.11 ppm Lung damage. Cardiac impairment. Not classifiable as a human carcinogen.
SUCROSE UNLABELED (57-50-1)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³

8.2. Exposure controls

- Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



- Materials for protective clothing : Wear suitable protective clothing and gloves.
- Hand protection : Wear suitable protective clothing and gloves.
- Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.
- Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.

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Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 18.02 g/mol
Color	: Colourless.
Odor	: No data available.
Odor threshold	: No data available
pH	: 6.0 - 8.0 at 25 °C (77 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 0 °C (32.0 °F)
Freezing point	: No data available
Boiling point	: 100 °C (212.0 °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 g/ml at 20 °C (68 °F)
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

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

WATER UNLABELED (7732-18-5)

LD50 oral rat	> 90000 mg/kg
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SODIUM AZIDE UNLABELED (26628-22-8)	
LD50 oral rat	27 mg/kg
LD50 dermal rabbit	20 mg/kg
LC50 inhalation rat (mg/l)	37 mg/m ³
ATE CLP (oral)	27.000 mg/kg body weight
ATE CLP (dermal)	20.000 mg/kg body weight
ATE CLP (gases)	10.000 ppmV/4h
ATE CLP (vapors)	0.037 mg/l/4h
ATE CLP (dust, mist)	0.037 mg/l/4h

SUCROSE UNLABELED (57-50-1)	
LD50 oral rat	29700 mg/kg Somnolence, Cyanosis, Diarrhea
ATE CLP (oral)	29700.000 mg/kg body weight

DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)	
LD50 oral rat	> 90000 mg/kg

Skin corrosion/irritation	: Not classified pH: 6.0 - 8.0 at 25 °C (77 °F)
Serious eye damage/irritation	: Not classified pH: 6.0 - 8.0 at 25 °C (77 °F)
Respiratory or skin sensitization	: 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
Potential Adverse human health effects and symptoms	: 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.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. May cause moderate irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

SODIUM AZIDE UNLABELED (26628-22-8)	
LC50 fish 1	5.46 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 other aquatic organisms 1	0.35 mg/l Pseudokirchneriella subcapitata - 96 h

12.2. Persistence and degradability

SODIUM AZIDE UNLABELED (26628-22-8)	
Persistence and degradability	Not available.

SUCROSE UNLABELED (57-50-1)	
Persistence and degradability	Not available.

(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE (2039-96-5)	
Persistence and degradability	Not available.

12.3. Bioaccumulative potential

SODIUM AZIDE UNLABELED (26628-22-8)	
Bioaccumulative potential	Not available.

SUCROSE UNLABELED (57-50-1)	
Bioaccumulative potential	Not available.

2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O

H2O:D2O=V/V

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(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE (2039-96-5)	
Bioaccumulative potential	Not available.

12.4. Mobility in soil

SODIUM AZIDE UNLABELED (26628-22-8)	
Ecology - soil	Not available.

SUCROSE UNLABELED (57-50-1)	
Ecology - soil	Not available.

(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE (2039-96-5)	
Ecology - soil	Not 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.
- Product/Packaging disposal recommendations: : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

- Other information : No supplementary information available.
- Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

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

- Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

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

2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O H2O:D2O=V/V	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O H2O:D2O=V/V

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2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O H2O:D2O=V/V	
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE (2039-96-5)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)	
SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

15.2. International regulations

CANADA

2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O H2O:D2O=V/V
Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

2 mM SUCROSE + 0.5 mM DSS + 2 mM NAN3 IN 90% H2O/10% D2O H2O:D2O=V/V()	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE (2039-96-5)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

(DSS) SODIUM 2,2-DIMETHYL- 2-SILAPENTANE-5-SULFONATE (2039-96-5)	
State or local regulations	
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List	

DEUTERIUM OXIDE (D, 99.9%) (7789-20-0)	
State or local regulations	
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List	

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.

Full text of R-, H- and EUH-phrases:

Acute Tox. 1 (Dermal)	Acute toxicity (dermal) Category 1
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H2O:D2O=V/V DLM-91

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Acute Tox. 1 (Inhalation)	Acute toxicity (inhalation) Category 1
Acute Tox. 2 (Oral)	Acute toxicity (oral) Category 2
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H300	Fatal if swallowed
H310	Fatal in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
R25	Toxic if swallowed
R26/27	Very toxic by inhalation and in contact with skin
R36/37/38	Irritating to eyes, respiratory system and skin
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
N	Dangerous for the environment
T	Toxic
T+	Very toxic
Xi	Irritant

NFPA health hazard

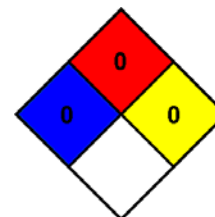
: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 0 - Materials that will not burn under typical dire 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.



HMIS III Rating

Health : 0 Minimal Hazard - No significant risk to health

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture 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