

SAFETY DATA SHEET



NMR Sample Kit - UHF and Cold Probe - 5mm, Part Number 94906572

Section 1. Identification

This product is considered an article. This Material Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

1.1 Product identifier

Product name : NMR Sample Kit - UHF and Cold Probe - 5mm, Part Number 94906572
Part No. (Chemical Kit) : 94906572
Part No. : 4Hz 0.1% H2O/D2O 190185509
 Temp Grad 190185511
 Sucrose NMR Tested 190185512
 ID 2 96812097
Validation date : 11/10/2014.

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

Material uses : Analytical chemistry.
 4x860µL
 4Hz 0.1% H2O/D2O 860 µl
 Temp Grad 860 µl
 Sucrose NMR Tested 860 µl
 ID 2 860 µl

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
 Logistics Center - Americas
 500 Ships Landing Way
 New Castle, Delaware 19720
 800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

2.1 Classification of the substance or mixture

OSHA/HCS status : 4Hz 0.1% H2O/D2O

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Temp Grad

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this

Section 2. Hazards identification

Sucrose NMR Tested

product.
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

ID 2

Classification of the substance or mixture

ID 2
H227 FLAMMABLE LIQUIDS - Category 4
H320 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

2.2 GHS label elements

Hazard pictograms



Signal word

: 4Hz 0.1% H2O/D2O
Temp Grad
Sucrose NMR Tested
ID 2

No signal word.
No signal word.
No signal word.
Warning

Hazard statements

: 4Hz 0.1% H2O/D2O
Temp Grad
Sucrose NMR Tested
ID 2

No known significant effects or critical hazards.
No known significant effects or critical hazards.
No known significant effects or critical hazards.
H227 - Combustible liquid.
H320 - Causes eye irritation.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

: 4Hz 0.1% H2O/D2O
Temp Grad
Sucrose NMR Tested
ID 2

Not applicable.
Not applicable.
Not applicable.
P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from flames and hot surfaces. -
No smoking.
P260 - Do not breathe vapor.
P264 - Wash hands thoroughly after handling.

Response

: 4Hz 0.1% H2O/D2O
Temp Grad
Sucrose NMR Tested
ID 2

Not applicable.
Not applicable.
Not applicable.
P314 - Get medical attention if you feel unwell.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Section 2. Hazards identification

Storage	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not applicable. Not applicable. Not applicable. P403 - Store in a well-ventilated place. P235 - Keep cool.
Disposal	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
2.3 Other hazards		
Hazards not otherwise classified	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	None known. None known. None known. None known.

Section 3. Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product's directions for use it may present potential health and safety hazards.

Substance/mixture	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Mixture (encapsulated in article) Mixture (encapsulated in article) Mixture (encapsulated in article) Mixture (encapsulated in article)
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Ingredient name	%	CAS number
ID 2 di[(² H ₃)Methyl] sulphoxide	60 - 100	2206-27-1
Benzamide (¹⁵ N)	1 - 5	31656-62-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	: 4Hz 0.1% H ₂ O/D ₂ O	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Temp Grad	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Sucrose NMR Tested	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	ID 2	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.

Section 4. First aid measures

		Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.
Inhalation	: 4Hz 0.1% H ₂ O/D ₂ O	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Temp Grad	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Sucrose NMR Tested	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	ID 2	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: 4Hz 0.1% H ₂ O/D ₂ O	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Temp Grad	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Sucrose NMR Tested	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	ID 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: 4Hz 0.1% H ₂ O/D ₂ O	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Temp Grad	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Sucrose NMR Tested	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting

Section 4. First aid measures

ID 2

unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation.
Inhalation	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May be irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
Inhalation	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. No specific data.
Skin contact	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. No specific data.

Section 4. First aid measures

Ingestion	: 4Hz 0.1% H ₂ O/D ₂ O	No specific data.
	Temp Grad	No specific data.
	Sucrose NMR Tested	No specific data.
	ID 2	No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: 4Hz 0.1% H ₂ O/D ₂ O	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Temp Grad	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Sucrose NMR Tested	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	ID 2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: 4Hz 0.1% H ₂ O/D ₂ O	No specific treatment.
	Temp Grad	No specific treatment.
	Sucrose NMR Tested	No specific treatment.
	ID 2	No specific treatment.
Protection of first-aiders	: 4Hz 0.1% H ₂ O/D ₂ O	No action shall be taken involving any personal risk or without suitable training.
	Temp Grad	No action shall be taken involving any personal risk or without suitable training.
	Sucrose NMR Tested	No action shall be taken involving any personal risk or without suitable training.
	ID 2	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: 4Hz 0.1% H ₂ O/D ₂ O	Use an extinguishing agent suitable for the surrounding fire.
	Temp Grad	Use an extinguishing agent suitable for the surrounding fire.
	Sucrose NMR Tested	Use an extinguishing agent suitable for the surrounding fire.
	ID 2	Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: 4Hz 0.1% H ₂ O/D ₂ O	None known.
	Temp Grad	None known.
	Sucrose NMR Tested	None known.
	ID 2	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Section 5. Fire-fighting measures

<p>Specific hazards arising from the chemical</p>	<p>: 4Hz 0.1% H2O/D2O</p> <p>Temp Grad</p> <p>Sucrose NMR Tested</p> <p>ID 2</p>	<p>In a fire or if heated, a pressure increase will occur and the container may burst.</p> <p>In a fire or if heated, a pressure increase will occur and the container may burst.</p> <p>In a fire or if heated, a pressure increase will occur and the container may burst.</p> <p>Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.</p>
<p>Hazardous thermal decomposition products</p>	<p>: 4Hz 0.1% H2O/D2O</p> <p>Temp Grad</p> <p>Sucrose NMR Tested</p> <p>ID 2</p>	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>Decomposition products may include the following materials:</p> <p>carbon dioxide</p> <p>carbon monoxide</p> <p>sulfur oxides</p>
<p>5.3 Advice for firefighters</p>		
<p>Special protective actions for fire-fighters</p>	<p>: 4Hz 0.1% H2O/D2O</p> <p>Temp Grad</p> <p>Sucrose NMR Tested</p> <p>ID 2</p>	<p>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</p> <p>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</p> <p>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</p> <p>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.</p>
<p>Special protective equipment for fire-fighters</p>	<p>: 4Hz 0.1% H2O/D2O</p> <p>Temp Grad</p> <p>Sucrose NMR Tested</p> <p>ID 2</p>	<p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p>

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: 4Hz 0.1% H ₂ O/D ₂ O	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	Temp Grad	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	Sucrose NMR Tested	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	ID 2	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: 4Hz 0.1% H ₂ O/D ₂ O	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Temp Grad	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Sucrose NMR Tested	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	ID 2	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	: 4Hz 0.1% H ₂ O/D ₂ O	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	Temp Grad	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	Sucrose NMR Tested	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 6. Accidental release measures

ID 2

Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

4Hz 0.1% H₂O/D₂O

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Temp Grad

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Sucrose NMR Tested

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

ID 2

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures

: 4Hz 0.1% H₂O/D₂O

Put on appropriate personal protective equipment (see Section 8).

Temp Grad

Put on appropriate personal protective equipment (see Section 8).

Sucrose NMR Tested

Put on appropriate personal protective equipment (see Section 8).

ID 2

Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist.

Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation.

Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated.

Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

: 4Hz 0.1% H₂O/D₂O

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Temp Grad

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Sucrose NMR Tested

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

ID 2

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations

: 4Hz 0.1% H₂O/D₂O
Temp Grad
Sucrose NMR Tested
ID 2

Industrial applications, Professional applications.
Industrial applications, Professional applications.
Industrial applications, Professional applications.
Industrial applications, Professional applications.

Industrial sector specific solutions

: Not applicable.

Section 8. Exposure controls/personal protection

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ID 2 di[(² H ₃)Methyl] sulphoxide	AIHA WEEL (United States, 10/2011). TWA: 250 ppm 8 hours.

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Liquid. Liquid. Liquid. [Clear.] Liquid. [Clear.]
Color	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Colorless. Colorless. Not available. Colorless.
Odor	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. Ripe olive.
Odor threshold	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. Not available.
pH	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	7 Not available. Not available. Not available.
Melting point	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	3.81°C (38.9°F) 3.81°C (38.9°F) 0°C (32°F) 18 to 18.54°C (64.4 to 65.4°F)
Boiling point	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	101.42°C (214.6°F) 101.42°C (214.6°F) 100°C (212°F) 189°C (372.2°F)
Flash point	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. Closed cup: 88°C (190.4°F)
Evaporation rate	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. Not available.
Flammability (solid, gas)	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not applicable. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. Lower: 3%
Vapor pressure	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. 0.061 kPa (0.46 mm Hg) [room temperature]
Vapor density	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Not available. Not available. Not available. 1.04 [Air = 1]

Section 9. Physical and chemical properties

Relative density	: 4Hz 0.1% H ₂ O/D ₂ O	1.1
	Temp Grad	1.1
	Sucrose NMR Tested	Not available.
	ID 2	1.18
Solubility	: 4Hz 0.1% H ₂ O/D ₂ O	Easily soluble in the following materials: cold water and hot water.
	Temp Grad	Easily soluble in the following materials: cold water and hot water.
	Sucrose NMR Tested	Easily soluble in the following materials: cold water and hot water.
	ID 2	Soluble in the following materials: cold water and hot water.
Solubility in water	: Not available.	
Partition coefficient: n-octanol/water	: 4Hz 0.1% H ₂ O/D ₂ O	Not available.
	Temp Grad	Not available.
	Sucrose NMR Tested	Not available.
	ID 2	Not available.
Auto-ignition temperature	: 4Hz 0.1% H ₂ O/D ₂ O	Not available.
	Temp Grad	Not available.
	Sucrose NMR Tested	Not available.
	ID 2	215°C (419°F)
Decomposition temperature	: 4Hz 0.1% H ₂ O/D ₂ O	Not available.
	Temp Grad	Not available.
	Sucrose NMR Tested	Not available.
	ID 2	Not available.
Viscosity	: 4Hz 0.1% H ₂ O/D ₂ O	Not available.
	Temp Grad	Not available.
	Sucrose NMR Tested	Not available.
	ID 2	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: 4Hz 0.1% H ₂ O/D ₂ O	No specific test data related to reactivity available for this product or its ingredients.
	Temp Grad	No specific test data related to reactivity available for this product or its ingredients.
	Sucrose NMR Tested	No specific test data related to reactivity available for this product or its ingredients.
	ID 2	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: 4Hz 0.1% H ₂ O/D ₂ O	The product is stable.
	Temp Grad	The product is stable.
	Sucrose NMR Tested	The product is stable.
	ID 2	The product is stable.
10.3 Possibility of hazardous reactions	: 4Hz 0.1% H ₂ O/D ₂ O	Under normal conditions of storage and use, hazardous reactions will not occur.
	Temp Grad	Under normal conditions of storage and use, hazardous reactions will not occur.
	Sucrose NMR Tested	Under normal conditions of storage and use, hazardous reactions will not occur.
	ID 2	Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

10.4 Conditions to avoid	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
10.5 Incompatible materials	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. Reactive or incompatible with the following materials: oxidizing materials
10.6 Hazardous decomposition products	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ID 2 di[(² H ₃)Methyl] sulphoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ID 2 di[(² H ₃)Methyl] sulphoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Section 11. Toxicological information

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ID 2 di[(² H ₃)Methyl] sulphoxide	Category 2	Oral	kidneys and liver

Aspiration hazard

Not available.

Information on the likely routes of exposure : 4Hz 0.1% H₂O/D₂O Temp Grad Not available.
 Sucrose NMR Tested Not available.
 ID 2 Not available.

Potential acute health effects

Eye contact : 4Hz 0.1% H₂O/D₂O No known significant effects or critical hazards.
 Temp Grad No known significant effects or critical hazards.
 Sucrose NMR Tested No known significant effects or critical hazards.
 ID 2 Causes eye irritation.

Inhalation : 4Hz 0.1% H₂O/D₂O No known significant effects or critical hazards.
 Temp Grad No known significant effects or critical hazards.
 Sucrose NMR Tested No known significant effects or critical hazards.
 ID 2 No known significant effects or critical hazards.

Skin contact : 4Hz 0.1% H₂O/D₂O No known significant effects or critical hazards.
 Temp Grad No known significant effects or critical hazards.
 Sucrose NMR Tested No known significant effects or critical hazards.
 ID 2 No known significant effects or critical hazards.

Ingestion : 4Hz 0.1% H₂O/D₂O No known significant effects or critical hazards.
 Temp Grad No known significant effects or critical hazards.
 Sucrose NMR Tested No known significant effects or critical hazards.
 ID 2 May be irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : 4Hz 0.1% H₂O/D₂O No specific data.
 Temp Grad No specific data.
 Sucrose NMR Tested No specific data.
 ID 2 Adverse symptoms may include the following:
 irritation
 watering
 redness

Inhalation : 4Hz 0.1% H₂O/D₂O No specific data.
 Temp Grad No specific data.
 Sucrose NMR Tested No specific data.
 ID 2 No specific data.

Section 11. Toxicological information

Skin contact	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. No specific data.
Ingestion	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No specific data. No specific data. No specific data. No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: 4Hz 0.1% H ₂ O/D ₂ O Temp Grad Sucrose NMR Tested ID 2	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
ID 2 Oral	25000 mg/kg

Section 11. Toxicological information

Other information	: 4Hz 0.1% H ₂ O/D ₂ O	Not available.
	Temp Grad	Not available.
	Sucrose NMR Tested	Not available.
	ID 2	Not available.

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
ID 2 di[(² H ₃)Methyl] sulphoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Benzamide (¹⁵ N)	Acute LC50 34000000 µg/l Fresh water Acute LC50 661000 µg/l Fresh water	Fish - Pimephales promelas Fish - Pimephales promelas	96 hours 96 hours

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
ID 2 di[(² H ₃)Methyl] sulphoxide	-1.35	3.16	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : 4Hz 0.1% H₂O/D₂O Not available.
Temp Grad Not available.
Sucrose NMR Tested Not available.
ID 2 Not available.

Section 13. Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

This Material Safety Data Sheet is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : TSCA 8(a) PAIR: Acetonitrile
 United States inventory (TSCA 8b): Not determined.
 Clean Water Act (CWA) 307: Chromium(III) 4-oxopent-2-ene-2-olate; Acetonitrile

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Sucrose NMR Tested Sodium azide	< 0.1	Yes.	500	-	1000	-

SARA 304 RQ : 200000000 lbs / 90800000 kg

SARA 311/312

Classification : Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
ID 2 di[(² H ₃)Methyl] sulphoxide Benzamide (¹⁵ N)	60 - 100 1 - 5	Yes. No.	No. No.	No. No.	Yes. Yes.	Yes. No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	ID 2 Benzamide (¹⁵ N)	31656-62-9	1 - 5
Supplier notification	ID 2 Benzamide (¹⁵ N)	31656-62-9	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : None of the components are listed.
New York : None of the components are listed.
New Jersey : The following components are listed: DIMETHYL SULFOXIDE; METHANE, SULFINYLBIIS-
Pennsylvania : The following components are listed: di[(²H₃)Methyl] sulphoxide
California Prop. 65

No products were found.

Canada inventory : Not determined.

International regulations

- International lists** : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule I Chemicals

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals

Section 16. Other information

History

Date of issue : 11/10/2014.

Date of previous issue : 11/12/2012.

Version : 2

✔ Indicates information that has changed from previously issued version.

Notice to reader

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