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: IFC Sample Kit, Part Number 190418701
Part No. (Chemical Kit): 190418701
Part No.:
- Sucrose Sample Purchase SPEC: 190336500
- 99% D2O Sample: 190356900
- 0.2% v/v H2O in D2O Microflow sample: 190521700
- 50mM,1% H2O/D2O Sodium Acetate Solution: 190555700
- 10 mM 13C Enriched Sodium Acetate: 190605300

Validation date: 12/19/2013.

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

Material uses:
- Analytical chemistry.
- Sucrose Sample Purchase SPEC
- 99% D2O Sample
- 0.2% v/v H2O in D2O Microflow sample
- 50mM,1% H2O/D2O Sodium Acetate Solution
- 10 mM 13C Enriched Sodium Acetate

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: Sucrose Sample Purchase SPEC
- 99% D2O Sample

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this
Section 2. Hazards identification

Classification of the substance or mixture

Sucrose Sample Purchase SPEC
Comb. Dusts
H373

COMBUSTIBLE DUSTS
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (gastrointestinal tract) (oral) - Category 2

2.2 GHS label elements

Hazard pictograms : 

Signal word : Sucrose Sample Purchase SPEC Warning
99% D2O Sample
0.2% v/v H2O in D2O Microflow sample
No signal word.
No signal word.
50mM,1% H2O/D2O Sodium Acetate Solution
No signal word.
10 mM 13C Enriched Sodium Acetate
No signal word.

Hazard statements : Sucrose Sample Purchase SPEC
99% D2O Sample
No known significant effects or critical hazards.
0.2% v/v H2O in D2O Microflow sample
No known significant effects or critical hazards.
50mM,1% H2O/D2O Sodium Acetate Solution
No known significant effects or critical hazards.
10 mM 13C Enriched Sodium Acetate
No known significant effects or critical hazards.

Precautionary statements

Date of issue : 12/19/2013
# Section 2. Hazards identification

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Sucrose Sample Purchase SPEC P260 - Do not breathe dust or mist.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99% D2O Sample</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow sample</td>
</tr>
<tr>
<td></td>
<td>50mM,1% H2O/D2O Sodium Acetate</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium Acetate</td>
</tr>
<tr>
<td>Response</td>
<td>Sucrose Sample Purchase SPEC P314 - Get medical attention if you feel unwell.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow sample</td>
</tr>
<tr>
<td></td>
<td>50mM,1% H2O/D2O Sodium Acetate</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium Acetate</td>
</tr>
<tr>
<td>Storage</td>
<td>Sucrose Sample Purchase SPEC</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow sample</td>
</tr>
<tr>
<td></td>
<td>50mM,1% H2O/D2O Sodium Acetate</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium Acetate</td>
</tr>
<tr>
<td>Disposal</td>
<td>Sucrose Sample Purchase SPEC P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow sample</td>
</tr>
<tr>
<td></td>
<td>50mM,1% H2O/D2O Sodium Acetate</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium Acetate</td>
</tr>
</tbody>
</table>

## Supplemental label elements

<table>
<thead>
<tr>
<th></th>
<th>Keep container tightly closed. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Prevent dust accumulation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99% D2O Sample</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow sample</td>
</tr>
<tr>
<td></td>
<td>50mM,1% H2O/D2O Sodium Acetate</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium Acetate</td>
</tr>
</tbody>
</table>

## 2.3 Other hazards

### Hazards not otherwise classified

<table>
<thead>
<tr>
<th></th>
<th>Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99% D2O Sample</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow sample</td>
</tr>
<tr>
<td></td>
<td>50mM,1% H2O/D2O Sodium Acetate</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium Acetate</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>Sucrose</td>
<td>60 - 100</td>
<td>57-50-1</td>
</tr>
</tbody>
</table>

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.

Section 4. First aid measures

4.1 Description of necessary first aid measures

**Eye contact**

- Sucrose Sample Purchase SPEC
  - 99% D2O Sample
    - Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.
  - 0.2% v/v H2O in D2O Microflow sample
    - 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.
  - 50mM,1% H2O/D2O Sodium Acetate Solution
    - 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.
  - 10 mM 13C Enriched Sodium Acetate
    - 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.

**Inhalation**

- Sucrose Sample Purchase SPEC
  - 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 if irritation occurs.
# Section 4. First aid measures

<table>
<thead>
<tr>
<th>Substance</th>
<th>Skin contact</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>99% D2O Sample</strong></td>
<td><strong>Sucrose Sample Purchase SPEC</strong></td>
<td><strong>Sucrose Sample Purchase SPEC</strong></td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with 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.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>0.2% v/v H2O in D2O Microflow sample</strong></td>
<td><strong>Sucrose Sample Purchase SPEC</strong></td>
<td><strong>Sucrose Sample Purchase SPEC</strong></td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Wash out mouth with water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>50mM,1% H2O/D2O Sodium Acetate Solution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>10 mM 13C Enriched Sodium Acetate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>50mM,1% H2O/D2O Sodium Acetate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td><strong>10 mM 13C Enriched Sodium Acetate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

50mM, 1% H2O/D2O Sodium Acetate Solution
- 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.

10 mM 13C Enriched Sodium Acetate
- 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.

4.2 Most important symptoms/effects, acute and delayed

**Potential acute health effects**

**Eye contact**: Sucrose Sample Purchase SPEC
- Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
- No known significant effects or critical hazards.

99% D2O Sample
- No known significant effects or critical hazards.

0.2% v/v H2O in D2O Microflow sample
- No known significant effects or critical hazards.

50mM, 1% H2O/D2O Sodium Acetate Solution
- No known significant effects or critical hazards.

10 mM 13C Enriched Sodium Acetate
- No known significant effects or critical hazards.

**Inhalation**: Sucrose Sample Purchase SPEC
- Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
- No known significant effects or critical hazards.

99% D2O Sample
- No known significant effects or critical hazards.

0.2% v/v H2O in D2O Microflow sample
- No known significant effects or critical hazards.

50mM, 1% H2O/D2O Sodium Acetate Solution
- No known significant effects or critical hazards.

10 mM 13C Enriched Sodium Acetate
- No known significant effects or critical hazards.

**Skin contact**: Sucrose Sample Purchase SPEC
- No known significant effects or critical hazards.

99% D2O Sample
- No known significant effects or critical hazards.

0.2% v/v H2O in D2O Microflow sample
- No known significant effects or critical hazards.

50mM, 1% H2O/D2O Sodium Acetate Solution
- No known significant effects or critical hazards.

10 mM 13C Enriched Sodium Acetate
- No known significant effects or critical hazards.

**Ingestion**: Sucrose Sample Purchase SPEC
- No known significant effects or critical hazards.

99% D2O Sample
- No known significant effects or critical hazards.

0.2% v/v H2O in D2O Microflow sample
- No known significant effects or critical hazards.

50mM, 1% H2O/D2O Sodium Acetate Solution
- No known significant effects or critical hazards.

10 mM 13C Enriched Sodium Acetate
- No known significant effects or critical hazards.
Section 4. First aid measures

Over-exposure signs/symptoms

Eye contact: Sucrose Sample Purchase SPEC
- Adverse symptoms may include the following:
  - 99% D2O Sample: No specific data.
  - 0.2% v/v H2O in D2O Microflow sample: No specific data.
  - 50mM, 1% H2O/D2O Sodium Acetate Solution: No specific data.
  - 10 mM 13C Enriched Sodium Acetate: No specific data.

Inhalation: Sucrose Sample Purchase SPEC
- Adverse symptoms may include the following:
  - 99% D2O Sample: No specific data.
  - 0.2% v/v H2O in D2O Microflow sample: No specific data.
  - 50mM, 1% H2O/D2O Sodium Acetate Solution: No specific data.
  - 10 mM 13C Enriched Sodium Acetate: No specific data.

Skin contact: Sucrose Sample Purchase SPEC
- No specific data.

Ingestion: Sucrose Sample Purchase SPEC
- No specific data.

Sucrose Sample Purchase SPEC
- Adverse symptoms may include the following:
  - Eye contact: irritation, redness
  - Skin contact: No specific data.
  - Ingestion: No specific data.

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

Notes to physician: Sucrose Sample Purchase SPEC
- Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
  - 99% D2O Sample: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
  - 0.2% v/v H2O in D2O Microflow sample: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
  - 50mM, 1% H2O/D2O Sodium Acetate Solution: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
  - 10 mM 13C Enriched Sodium Acetate: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Section 4. First aid measures

**Specific treatments**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>No specific treatment.</td>
</tr>
</tbody>
</table>

**Protection of first-aiders**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>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.</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

**Suitable extinguishing media**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC 99% D2O Sample</td>
<td>Use dry chemical powder.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
</tbody>
</table>

**Unsuitable extinguishing media**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC 99% D2O Sample</td>
<td>Do not use water jet.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>None known.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>None known.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>None known.</td>
</tr>
</tbody>
</table>

5.2 Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Specific hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC 99% D2O Sample</td>
<td>Fine dust clouds may form explosive mixtures with air.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
</tbody>
</table>
Section 5. Fire-fighting measures

| Hazardous thermal decomposition products | Decomposition products may include the following materials: carbon dioxide carbon monoxide |

5.3 Advice for firefighters

| Special protective actions for fire-fighters | Sucrose Sample Purchase SPEC | 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. |
| 99% D2O Sample | 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. |
| 0.2% v/v H2O in D2O Microflow sample | 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. |
| 50mM,1% H2O/D2O Sodium Acetate Solution | 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. |
| 10 mM 13C Enriched Sodium Acetate | 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. |

Special protective equipment for fire-fighters

| : Sucrose Sample Purchase SPEC | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| 99% D2O Sample | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| 0.2% v/v H2O in D2O Microflow sample | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| 50mM,1% H2O/D2O Sodium Acetate Solution | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| 10 mM 13C Enriched Sodium Acetate | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

| For non-emergency personnel | 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
Section 6. Accidental release measures

For emergency responders: 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

Sucrose Sample Purchase SPEC
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).

99% D2O Sample
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).

0.2% v/v H2O in D2O Microflow sample
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).

50mM,1% H2O/D2O Sodium Acetate Solution
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).

10 mM 13C Enriched Sodium Acetate
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

Sucrose Sample Purchase SPEC
Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

99% D2O Sample
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.

0.2% v/v H2O in D2O Microflow sample
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.

50mM,1% H2O/D2O Sodium Acetate Solution
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.

10 mM 13C Enriched Sodium Acetate
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.
Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures: Sucrose Sample Purchase SPEC
Put on appropriate personal protective equipment (see Section 8). Do not breathe dust. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Sucrose Sample Purchase SPEC
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.

Sucrose Sample Purchase SPEC
Put on appropriate personal protective equipment (see Section 8). 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.

Sucrose Sample Purchase SPEC
Put on appropriate personal protective equipment (see Section 8).

Sucrose Sample Purchase SPEC
Put on appropriate personal protective equipment (see Section 8).

Sucrose Sample Purchase SPEC
Put on appropriate personal protective equipment (see Section 8).

Sucrose Sample Purchase SPEC
Put on appropriate personal protective equipment (see Section 8).

99% D2O Sample
Put on appropriate personal protective equipment (see Section 8).

0.2% v/v H2O in D2O Microflow sample
Put on appropriate personal protective equipment (see Section 8).

50mM,1% H2O/D2O Sodium Acetate Solution
Put on appropriate personal protective equipment (see Section 8).

10 mM 13C Enriched Sodium Acetate
Put on appropriate personal protective equipment (see Section 8).

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.

7.2 Conditions for safe storage, including any incompatibilities

99% D2O Sample
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.

0.2% v/v H2O in D2O Microflow sample
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.

50mM,1% H2O/D2O Sodium Acetate Solution
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.

10 mM 13C Enriched Sodium Acetate
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.
### Section 7. Handling and storage

<table>
<thead>
<tr>
<th>Substance</th>
<th>Storage and Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>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.</td>
</tr>
<tr>
<td>50mM, 1% H2O/D2O Sodium Acetate Solution</td>
<td>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.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>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.</td>
</tr>
</tbody>
</table>

### 7.3 Specific end use(s)

**Recommendations**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>Purchase SPEC</td>
<td></td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>50mM, 1% H2O/D2O Sodium Acetate Solution</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Industrial applications, Professional applications.</td>
</tr>
</tbody>
</table>

**Industrial sector specific solutions**

- Not applicable.

**Date of issue:** 12/19/2013
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

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>ACGIH TLV (United States, 3/2012). TWA: 10 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 1/2013). TWA: 5 mg/m³ 10 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 6/2010). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td>Sucreose</td>
<td>TWA: 15 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 10 hours. Form: Total dust</td>
</tr>
</tbody>
</table>

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: safety glasses with side-shields.

- **Skin 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.

- **Hand 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.

Date of issue: 12/19/2013
Section 8. Exposure controls/personal protection

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: Sucrose Sample Purchase SPEC
99% D2O Sample Solid. [Crystals. / Powder.]
0.2% v/v H2O in D2O Microflow sample Liquid.
50mM, 1% H2O/D2O Sodium Acetate Solution Liquid.
10 mM 13C Enriched Sodium Acetate Liquid.

Color: Sucrose Sample Purchase SPEC
99% D2O Sample White.
0.2% v/v H2O in D2O Microflow sample Colorless.
50mM, 1% H2O/D2O Sodium Acetate Solution Colorless.
10 mM 13C Enriched Sodium Acetate Colorless.

Odor: Sucrose Sample Purchase SPEC
99% D2O Sample Odorless.
0.2% v/v H2O in D2O Microflow sample Not available.
50mM, 1% H2O/D2O Sodium Acetate Solution Not available.
10 mM 13C Enriched Sodium Acetate Not available.

Odor threshold: Sucrose Sample Purchase SPEC
99% D2O Sample Not available.
0.2% v/v H2O in D2O Microflow sample Not available.
50mM, 1% H2O/D2O Sodium Acetate Solution Not available.
10 mM 13C Enriched Sodium Acetate Not available.

pH: Sucrose Sample Purchase SPEC
99% D2O Sample Not available.
0.2% v/v H2O in D2O Microflow sample 7
50mM, 1% H2O/D2O Sodium Acetate Solution 7
10 mM 13C Enriched Sodium Acetate 7

Date of issue: 12/19/2013
# Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Sample</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>185.5°C (365.9°F)</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td>3.81°C (38.9°F)</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td>3.81°C (38.9°F)</td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td>3.81°C (38.9°F)</td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td>3.81°C (38.9°F)</td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td></td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td></td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td></td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td></td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>Emits toxic fumes when heated to decomposition.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Sucrose Sample Purchase SPEC</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>0.2% v/v H2O in D2O Microflow</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>50mM, 1% H2O/D2O Sodium</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10 mM 13C Enriched Sodium</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>Acetate</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date of issue:** 12/19/2013
## Section 9. Physical and chemical properties

### Relative density

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Density</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>1.59</td>
<td>Not available</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>1.1044</td>
<td>(D&lt;sub&gt;2&lt;/sub&gt;O)</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>1.1044</td>
<td>(D&lt;sub&gt;2&lt;/sub&gt;O)</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>1.1044</td>
<td>[D&lt;sub&gt;2&lt;/sub&gt;O]</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>1.1044</td>
<td>[D&lt;sub&gt;2&lt;/sub&gt;O]</td>
</tr>
</tbody>
</table>

### Solubility

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Solubility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>Easily soluble in the following materials: cold water, hot water and methanol. Insoluble in the following materials: diethyl ether.</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
</tbody>
</table>

### Solubility in water

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Solubility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>-3.7</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Partition coefficient: n-octanol/water

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Partition Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>-3.7</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Auto-ignition temperature

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Auto-ignition Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>Not available.</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Decomposition temperature

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Decomposition Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>186°C (366.8°F)</td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td>Not available.</td>
</tr>
<tr>
<td>50mM,1% H2O/D2O Sodium Acetate Solution</td>
<td>Not available.</td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 9. Physical and chemical properties

**Viscosity**
- Sucrose Sample Purchase SPEC 99% D2O Sample: Not available.
- 0.2% v/v H2O in D2O Microflow sample: Not available.
- 50mM, 1% H2O/D2O Sodium Acetate Solution: Not available.
- 10 mM 13C Enriched Sodium Acetate: Not available.

Section 10. Stability and reactivity

**10.1 Reactivity**
- Sucrose Sample Purchase SPEC 99% D2O Sample: No specific test data related to reactivity available for this product or its ingredients.
- 0.2% v/v H2O in D2O Microflow sample: No specific test data related to reactivity available for this product or its ingredients.
- 50mM, 1% H2O/D2O Sodium Acetate Solution: No specific test data related to reactivity available for this product or its ingredients.
- 10 mM 13C Enriched Sodium Acetate: No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability**
- Sucrose Sample Purchase SPEC 99% D2O Sample: The product is stable.
- 0.2% v/v H2O in D2O Microflow sample: The product is stable.
- 50mM, 1% H2O/D2O Sodium Acetate Solution: The product is stable.
- 10 mM 13C Enriched Sodium Acetate: The product is stable.

**10.3 Possibility of hazardous reactions**
- Sucrose Sample Purchase SPEC 99% D2O Sample: Under normal conditions of storage and use, hazardous reactions will not occur.
- 0.2% v/v H2O in D2O Microflow sample: Under normal conditions of storage and use, hazardous reactions will not occur.
- 50mM, 1% H2O/D2O Sodium Acetate Solution: Under normal conditions of storage and use, hazardous reactions will not occur.
- 10 mM 13C Enriched Sodium Acetate: Under normal conditions of storage and use, hazardous reactions will not occur.

**10.4 Conditions to avoid**
- Sucrose Sample Purchase SPEC 99% D2O Sample: Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
- 0.2% v/v H2O in D2O Microflow sample: No specific data.
- 50mM, 1% H2O/D2O Sodium Acetate Solution: No specific data.
- 10 mM 13C Enriched Sodium Acetate: No specific data.
Section 10. Stability and reactivity

10.5 Incompatible materials: Sucrose Sample Purchase SPEC

<table>
<thead>
<tr>
<th>Material</th>
<th>Incompatible with</th>
</tr>
</thead>
<tbody>
<tr>
<td>99% D2O Sample</td>
<td>Oxidizing materials</td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td></td>
</tr>
<tr>
<td>50mM, 1% H2O/D2O Sodium Acetate Solution</td>
<td></td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td></td>
</tr>
</tbody>
</table>

10.6 Hazardous decomposition products: Sucrose Sample Purchase SPEC

<table>
<thead>
<tr>
<th>Material</th>
<th>Under normal conditions of storage and use, hazardous decomposition products should not be produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>99% D2O Sample</td>
<td></td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td></td>
</tr>
<tr>
<td>50mM, 1% H2O/D2O Sodium Acetate Solution</td>
<td></td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td></td>
</tr>
</tbody>
</table>

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC Sucrose</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>29700 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Irritation/Corrosion
Not available.

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)

Date of issue: 12/19/2013
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC</td>
<td>Category 2</td>
<td>Oral</td>
<td>gastrointestinal tract</td>
</tr>
<tr>
<td>Sucrose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99% D2O Sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2% v/v H2O in D2O Microflow sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50mM, 1% H2O/D2O Sodium Acetate Solution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 mM 13C Enriched Sodium Acetate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

**Potential acute health effects**

**Eye contact**

: Sucrose Sample Purchase SPEC

99% D2O Sample
0.2% v/v H2O in D2O Microflow sample
50mM, 1% H2O/D2O Sodium Acetate Solution
10 mM 13C Enriched Sodium Acetate

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

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.

**Inhalation**

: Sucrose Sample Purchase SPEC

99% D2O Sample
0.2% v/v H2O in D2O Microflow sample
50mM, 1% H2O/D2O Sodium Acetate Solution
10 mM 13C Enriched Sodium Acetate

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

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**

: Sucrose Sample Purchase SPEC

99% D2O Sample
0.2% v/v H2O in D2O Microflow sample
50mM, 1% H2O/D2O Sodium Acetate Solution
10 mM 13C Enriched Sodium Acetate

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**

: Sucrose Sample Purchase SPEC

99% D2O Sample
0.2% v/v H2O in D2O Microflow sample
50mM, 1% H2O/D2O Sodium Acetate Solution
10 mM 13C Enriched Sodium Acetate

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.

No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Date of issue**: 12/19/2013
Section 11. Toxicological information

**Eye contact**
- Sucrose Sample Purchase SPEC
- Adverse symptoms may include the following:
  - irritation
  - redness

- 99% D2O Sample
- No specific data.
- 0.2% v/v H2O in D2O Microflow sample
- No specific data.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
- No specific data.
- 10 mM 13C Enriched Sodium Acetate
- No specific data.

**Inhalation**
- Sucrose Sample Purchase SPEC
- Adverse symptoms may include the following:
  - respiratory tract irritation
  - coughing

- 99% D2O Sample
- No specific data.
- 0.2% v/v H2O in D2O Microflow sample
- No specific data.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
- No specific data.
- 10 mM 13C Enriched Sodium Acetate
- No specific data.

**Skin contact**
- Sucrose Sample Purchase SPEC
- No specific data.
- 99% D2O Sample
- No specific data.
- 0.2% v/v H2O in D2O Microflow sample
- No specific data.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
- No specific data.
- 10 mM 13C Enriched Sodium Acetate
- No specific data.

**Ingestion**
- Sucrose Sample Purchase SPEC
- No specific data.
- 99% D2O Sample
- No specific data.
- 0.2% v/v H2O in D2O Microflow sample
- No specific data.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
- No specific data.
- 10 mM 13C Enriched Sodium Acetate
- 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**
- Not available.
Section 11. Toxicological information

**General**
- Sucrose Sample Purchase SPEC
  - May cause damage to organs through prolonged or repeated exposure if swallowed. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
- 99% D2O Sample
  - No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample
  - No known significant effects or critical hazards.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
  - No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate
  - No known significant effects or critical hazards.

**Carcinogenicity**
- Sucrose Sample Purchase SPEC
  - No known significant effects or critical hazards.
- 99% D2O Sample
  - No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample
  - No known significant effects or critical hazards.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
  - No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate
  - No known significant effects or critical hazards.

**Mutagenicity**
- Sucrose Sample Purchase SPEC
  - No known significant effects or critical hazards.
- 99% D2O Sample
  - No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample
  - No known significant effects or critical hazards.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
  - No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate
  - No known significant effects or critical hazards.

**Teratogenicity**
- Sucrose Sample Purchase SPEC
  - No known significant effects or critical hazards.
- 99% D2O Sample
  - No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample
  - No known significant effects or critical hazards.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
  - No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate
  - No known significant effects or critical hazards.

**Developmental effects**
- Sucrose Sample Purchase SPEC
  - No known significant effects or critical hazards.
- 99% D2O Sample
  - No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample
  - No known significant effects or critical hazards.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
  - No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate
  - No known significant effects or critical hazards.

**Fertility effects**
- Sucrose Sample Purchase SPEC
  - No known significant effects or critical hazards.
- 99% D2O Sample
  - No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample
  - No known significant effects or critical hazards.
- 50mM, 1% H2O/D2O Sodium Acetate Solution
  - No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate
  - No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
Not available.

Date of issue: 12/19/2013
Section 11. Toxicological information

Other information:
- Sucrose Sample Purchase SPEC
- 99% D2O Sample
- 0.2% v/v H2O in D2O Microflow sample
- 50mM,1% H2O/D2O Sodium Acetate Solution
- 10 mM 13C Enriched Sodium Acetate

Not available.

Section 12. Ecological information

12.1 Toxicity
Not available.

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC Sucrose</td>
<td>-3.7</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>): Not available.

12.5 Other adverse effects

- Sucrose Sample Purchase SPEC 99% D2O Sample: No known significant effects or critical hazards.
- 0.2% v/v H2O in D2O Microflow sample: No known significant effects or critical hazards.
- 50mM,1% H2O/D2O Sodium Acetate Solution: No known significant effects or critical hazards.
- 10 mM 13C Enriched Sodium Acetate: 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.

Date of issue: 12/19/2013
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

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

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Delayed (chronic) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose Sample Purchase SPEC Sucrose</td>
<td>60 - 100</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

State regulations

Massachusetts : The following components are listed: SUCROSE DUST

Date of issue : 12/19/2013
### Section 15. Regulatory information

**New York**
- None of the components are listed.

**New Jersey**
- None of the components are listed.

**Pennsylvania**
- The following components are listed: \( \text{\textalpha-GLUCOPYRANOSIDE}, \text{\textbeta-FRUCTOFURANOSYL} \)

**California Prop. 65**
- No products were found.

**Canada inventory**
- All components are listed or exempted.

**International regulations**

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

### Section 16. Other information

**History**

- **Date of issue**: 12/19/2013.
- **Date of previous issue**: 12/16/2011.
- **Version**: 2

- Indicates information that has changed from previously issued version.

**Notice to reader**

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.