SAFETY DATA SHEET

AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008

Section 1. Identification

<table>
<thead>
<tr>
<th>False</th>
</tr>
</thead>
</table>

| Product identifier | AdvanceBio 2-AB glycan labeling kit (96 samples), Part Number 5190-8008 |
| Part no. (chemical kit) | 5190-8008 |
| Part no. | Reductant solution | Not available. |
| | 2-AB solution | Not available. |

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

Material uses

Reagents and Standards for Analytical Chemistry Laboratory Use

| Material uses | Reductant solution | 375 µL |
| 2-AB solution | 375 µL |

Supplier/Manufacturer

Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation)

CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

Reductant solution

H300 ACUTE TOXICITY (oral) - Category 2
H311 ACUTE TOXICITY (dermal) - Category 3
H330 ACUTE TOXICITY (inhalation) - Category 2
H314 SKIN CORROSION/IRRITATION - Category 1B
H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H401 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2
H411 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

2-AB solution

H314 SKIN CORROSION/IRRITATION - Category 1A
H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H317 SKIN SENSITISATION - Category 1
H402 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%

GHS label elements

Date of issue/Date of revision : 22/10/2018
Date of previous issue : 14/11/2016
Version : 3

1/17
Section 2. Hazard(s) identification

**Signal word**: Reductant solution - DANGER 2-AB solution - DANGER

**Hazard statements**

Reductant solution
- **H300 + H330** - Fatal if swallowed or if inhaled.
- **H311** - Toxic in contact with skin.
- **H314** - Causes severe skin burns and eye damage.
- **H411** - Toxic to aquatic life with long lasting effects.

2-AB solution
- **H314** - Causes severe skin burns and eye damage.
- **H317** - May cause an allergic skin reaction.
- **H412** - Harmful to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention**

Reductant solution
- **P280** - Wear protective gloves. Wear eye or face protection.
- **P284** - Wear respiratory protection.
- **P273** - Avoid release to the environment.
- **P260** - Do not breathe vapour.
- **P270** - Do not eat, drink or smoke when using this product.
- **P264** - Wash hands thoroughly after handling.

2-AB solution
- **P280** - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
- **P273** - Avoid release to the environment.
- **P261** - Avoid breathing vapour.
- **P264** - Wash hands thoroughly after handling.
- **P272** - Contaminated work clothing should not be allowed out of the workplace.

**Response**

Reductant solution
- **P391** - Collect spillage.
- **P304 + P340 + P310** - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
- **P301 + P310 + P330 + P331** - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting.
- **P303 + P361 + P353 + P363 + P310** - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.
- **P302 + P352 + P312** - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell.
- **P305 + P351 + P338 + P310** - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

2-AB solution
- **P304 + P340 + P310** - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
- **P301 + P310 + P330 + P331** - IF SWALLOWED:
Section 2. Hazard(s) identification

Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage:
Reductant solution
- P405 - Store locked up.

2-AB solution
- P405 - Store locked up.

Disposal:
Reductant solution
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

2-AB solution
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Additional warning phrases:
Reductant solution
- Not applicable.

2-AB solution
- Not applicable.

Other hazards which do not result in classification:
Reductant solution
- Causes digestive tract burns.

2-AB solution
- Causes digestive tract burns.

Section 3. Composition and ingredient information

Substance/mixture:
- Reductant solution
- 2-AB solution

Mixture

CAS number/other identifiers

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reductant solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>≥75 - ≤90</td>
<td>67-68-5</td>
</tr>
<tr>
<td>Sodium cyanotrihydroborate</td>
<td>≥10 - &lt;25</td>
<td>25895-60-7</td>
</tr>
<tr>
<td>2-AB solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>≥30 - ≤60</td>
<td>67-68-5</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>≥30 - ≤60</td>
<td>64-19-7</td>
</tr>
<tr>
<td>Anthranilamide</td>
<td>≥10 - &lt;20</td>
<td>88-68-6</td>
</tr>
</tbody>
</table>

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

## Description of necessary first aid measures

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td><strong>Reductant solution</strong>&lt;sup&gt;1&lt;/sup&gt; Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.</td>
</tr>
<tr>
<td><strong>2-AB solution</strong></td>
<td>Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td><strong>Reductant solution</strong>&lt;sup&gt;1&lt;/sup&gt; Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</td>
</tr>
<tr>
<td><strong>2-AB solution</strong></td>
<td>Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td><strong>Reductant solution</strong>&lt;sup&gt;1&lt;/sup&gt; Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
</tr>
<tr>
<td><strong>2-AB solution</strong></td>
<td>Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse before reuse.</td>
</tr>
</tbody>
</table>

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<sup>1</sup> In case of ingestion, get medical attention immediately. Call a poison center or physician. Wash mouth out with plenty of water. Avoid inducing vomiting. Do not give anything by mouth (including water) unless instructed by the physician. If a patient is unconscious, do not attempt to give anything by mouth. Provide artificial respiration if necessary. Do not feed an unconscious person. Wipe off any spilled solution and then wash clothing and shoes before reuse. Chemical burns must be treated promptly by a physician.
Section 4. First aid measures

Ingestion: Reductant solution

Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.

2-AB solution

Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Reductant solution

Causes serious eye damage.

2-AB solution

Causes serious eye damage.

Inhalation: Reductant solution

Fatal if inhaled.

2-AB solution

No known significant effects or critical hazards.

Skin contact: Reductant solution

Causes severe burns. Toxic in contact with skin.

2-AB solution

Causes severe burns. May cause an allergic skin reaction.

Ingestion: Reductant solution

Fatal if swallowed. Corrosive to the digestive tract. Causes burns.

2-AB solution

Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact: Reductant solution

Adverse symptoms may include the following: pain watering redness

2-AB solution

Adverse symptoms may include the following: pain watering redness
Section 4. First aid measures

**Inhalation**
- Reductant solution: No specific data.
- 2-AB solution: No specific data.

**Skin contact**
- Reductant solution: Adverse symptoms may include the following:
  - pain or irritation
  - redness
  - blistering may occur
- 2-AB solution: Adverse symptoms may include the following:
  - pain or irritation
  - redness
  - blistering may occur

**Ingestion**
- Reductant solution: Adverse symptoms may include the following:
  - stomach pains
- 2-AB solution: Adverse symptoms may include the following:
  - stomach pains

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

**Notes to physician**
- Reductant solution: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- 2-AB solution: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments**
- Reductant solution: No specific treatment.
- 2-AB solution: No specific treatment.

**Protection of first-aiders**
- Reductant solution: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- 2-AB solution: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

**Extinguishing media**

**Suitable extinguishing media**
- Reductant solution: Use an extinguishing agent suitable for the surrounding fire.
- 2-AB solution: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
- Reductant solution: None known.
- 2-AB solution: None known.
Section 5. Firefighting measures

Specific hazards arising from the chemical

Reductant solution: In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

2-AB solution: In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

Reductant solution: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- metal oxide/oxides

2-AB solution: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides

Special protective actions for fire-fighters

Reductant 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.

2-AB 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.

Special protective equipment for fire-fighters

Reductant solution: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

2-AB solution: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code

Reductant solution: 4W

2-AB solution: Not available.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Reductant solution: 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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate personal protective equipment.

2-AB solution: 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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate personal protective equipment.
Section 6. Accidental release measures

For emergency responders

Reductant solution
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".

2-AB solution
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".

Environmental precautions

Reductant solution
Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

2-AB solution
Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Methods for cleaning up

Reductant 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.

2-AB 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Reductant solution
Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

2-AB solution
Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made.
## Section 7. Handling and storage

### Advice on general occupational hygiene

<table>
<thead>
<tr>
<th>Advice on general occupational hygiene</th>
<th>Reductant solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

### Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Conditions for safe storage, including any incompatibilities</th>
<th>Reductant solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). 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. Store locked up. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</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. Store locked up. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</td>
</tr>
</tbody>
</table>

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reductant solution</strong></td>
<td>DFG MAC-values list (Germany, 7/2017). Absorbed through skin. PEAK: 320 mg/m³, 4 times per shift, 15 minutes. TWA: 160 mg/m³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours.</td>
</tr>
<tr>
<td><strong>2-AB solution</strong></td>
<td>DFG MAC-values list (Germany, 7/2017). Absorbed through skin.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimethyl sulfoxide</th>
<th>Dimethyl sulfoxide</th>
</tr>
</thead>
</table>
## Section 8. Exposure controls and personal protection

### acetic acid

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Concentration</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEAK:</td>
<td>320 mg/m³</td>
<td>8 hours</td>
</tr>
<tr>
<td>4 times per shift</td>
<td>15 minutes</td>
<td></td>
</tr>
<tr>
<td>TWA:</td>
<td>160 mg/m³</td>
<td></td>
</tr>
<tr>
<td>PEAK:</td>
<td>100 ppm</td>
<td>8 hours</td>
</tr>
<tr>
<td>4 times per shift</td>
<td>15 minutes</td>
<td></td>
</tr>
<tr>
<td>TWA:</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>STEL:</td>
<td>37 mg/m³</td>
<td>15 minutes</td>
</tr>
<tr>
<td>STEL:</td>
<td>15 ppm</td>
<td>15 minutes</td>
</tr>
<tr>
<td>TWA:</td>
<td>25 mg/m³</td>
<td>8 hours</td>
</tr>
<tr>
<td>TWA:</td>
<td>10 ppm</td>
<td>8 hours</td>
</tr>
</tbody>
</table>

### Appropriate engineering controls

Use only with adequate ventilation. 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. Contaminated work clothing should not be allowed out of the workplace. 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

#### 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.

#### 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

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Section 9. Physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Reductant solution</th>
<th>2-AB solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid.</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Odour</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>7.5</td>
<td>8.8</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
<td>Closed cup: &gt;93.3°C (&gt;199.9°F)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in the following materials: cold water and hot water.</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

**Reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Reductant solution</th>
<th>2-AB solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td></td>
</tr>
</tbody>
</table>

**Chemical stability**

<table>
<thead>
<tr>
<th>Property</th>
<th>Reductant solution</th>
<th>2-AB solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td></td>
</tr>
</tbody>
</table>

**Possibility of hazardous reactions**

<table>
<thead>
<tr>
<th>Property</th>
<th>Reductant solution</th>
<th>2-AB solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td></td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Conditions to avoid</th>
<th>Reductant solution</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-AB solution</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incompatible materials</th>
<th>Reductant solution</th>
<th>May react or be incompatible with oxidising materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-AB solution</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous decomposition products</th>
<th>Reductant solution</th>
<th>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-AB solution</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>

Section 11. Toxicological information

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>Reductant solution</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>40000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>14500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>2-AB solution</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>40000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>14500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>acetic acid</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>11000 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>1060 mg/kg</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>3310 mg/kg</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reductant solution</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>2-AB solution</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>acetic acid</td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>525 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary

Not available.

Carcinogenicity

Conclusion/Summary

Not available.
Section 11. Toxicological information

Reproductive toxicity
Conclusion/Summary : Not available.

Teratogenicity
Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-AB solution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>anthranilamide</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Potential acute health effects</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>: Reductant solution</td>
<td>Routes of entry anticipated: Oral, Dermal, Inhalation.</td>
<td></td>
</tr>
<tr>
<td>2-AB solution</td>
<td>Routes of entry anticipated: Oral, Dermal, Inhalation.</td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>: Reductant solution</td>
<td>Causes serious eye damage.</td>
<td></td>
</tr>
<tr>
<td>: 2-AB solution</td>
<td>Causes serious eye damage.</td>
<td></td>
</tr>
<tr>
<td>Skin contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>: Reductant solution</td>
<td>Fatal if inhaled.</td>
<td></td>
</tr>
<tr>
<td>: 2-AB solution</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
<tr>
<td>Ingestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>: Reductant solution</td>
<td>Fatal if swallowed. Corrosive to the digestive tract. Causes burns.</td>
<td></td>
</tr>
<tr>
<td>: 2-AB solution</td>
<td>Corrosive to the digestive tract. Causes burns.</td>
<td></td>
</tr>
</tbody>
</table>

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
: Reductant solution
Adverse symptoms may include the following:
pain
watering
redness
: 2-AB solution
Adverse symptoms may include the following:
pain
watering
redness

Inhalation
: Reductant solution
No specific data.
: 2-AB solution
No specific data.

Skin contact
: Reductant solution
Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
: 2-AB solution
Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion
: Reductant solution
Adverse symptoms may include the following:
stomach pains
: 2-AB solution
Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Section 11. Toxicological information

Potential immediate effects
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Potential delayed effects
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Long term exposure
- Reductant solution: Not available.
- 2-AB solution: Not available.

Potential immediate effects
- Reductant solution: Not available.
- 2-AB solution: Not available.

Potential delayed effects
- Reductant solution: Not available.
- 2-AB solution: Not available.

Carcinogenicity
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Mutagenicity
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Teratogenicity
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Developmental effects
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Fertility effects
- Reductant solution: No known significant effects or critical hazards.
- 2-AB solution: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reductant solution</strong></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>25 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>250 mg/kg</td>
</tr>
<tr>
<td>Inhalation (dusts and mists)</td>
<td>0.25 mg/l</td>
</tr>
<tr>
<td><strong>2-AB solution</strong></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>5000 mg/kg</td>
</tr>
</tbody>
</table>

Other information
- Reductant solution: Not available.
- 2-AB solution: Not available.

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Acute EC50 18299 μg/l Marine water</td>
<td>Algae - Nitzschia pungens</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 37.437 mg/l Marine water</td>
<td>Crustaceans - Artemia sp.</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 25000 ppm Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 34000000 μg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 3323 μg/l Marine water</td>
<td>Algae - Nitzschia pungens</td>
<td>96 hours</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>Acute EC50 18299 μg/l Marine water</td>
<td>Algae - Nitzschia pungens</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 37.437 mg/l Marine water</td>
<td>Crustaceans - Artemia sp.</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 25000 ppm Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 34000000 μg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 22/10/2018
Section 12. Ecological information

### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-AB solution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>acetic acid</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>-1.35</td>
<td>3.16</td>
<td>low</td>
</tr>
<tr>
<td>2-AB solution</td>
<td>-0.17</td>
<td>3.16</td>
<td>low</td>
</tr>
<tr>
<td>anthranilamide</td>
<td>0.35</td>
<td></td>
<td>low</td>
</tr>
</tbody>
</table>

### 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>Reductant solution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl sulfoxide</td>
<td>-1.35</td>
<td>3.16</td>
<td>low</td>
</tr>
<tr>
<td>2-AB solution</td>
<td>-0.17</td>
<td>3.16</td>
<td>low</td>
</tr>
<tr>
<td>acetic acid</td>
<td>0.35</td>
<td>3.16</td>
<td>low</td>
</tr>
</tbody>
</table>

### Mobility in soil

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

### Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

**Disposal methods:**

The generation of waste should be avoided or minimised 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

**ADG / IMDG / IATA:** Not regulated as Dangerous Goods according to the ADG Code.

**Additional information**

**Remarks:** De minimis quantities

**Special precautions for user:** **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code:** Not available.
Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

6

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.
Canada : At least one component is not listed in DSL but all such components are listed in NDSL.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : Japan inventory (ENCS): Not determined.

Japan inventory (ISHL): All components are listed or exempted.

Malaysia : Not determined.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
United States : All components are listed or exempted.
Viet Nam : Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 22/10/2018
Date of previous issue : 14/11/2016
Version : 3

Key to abbreviations : ADG = Australian Dangerous Goods
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
## Section 16. Any other relevant information

NOHSC = National Occupational Health and Safety Commission  
SUSMP = Standard Uniform Schedule of Medicine and Poisons  
UN = United Nations

### Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reductant solution</strong></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 2, H300</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Acute Tox. 3, H311</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Acute Tox. 2, H330</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Corr. 1B, H314</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Dam. 1, H318</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 2, H401</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 2, H411</td>
<td>Calculation method</td>
</tr>
<tr>
<td><strong>2-AB solution</strong></td>
<td></td>
</tr>
<tr>
<td>Skin Corr. 1A, H314</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Dam. 1, H318</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Sens. 1, H317</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 3, H402</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 3, H412</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

### References

- Not available.

> 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.