Section 1. Identification

1.1 Product identifier
Product name: StrataPrep DNA Gel Extraction Kit, Part Number 400766
Part no. (chemical kit): 400766
Part no.: DNA Extraction Buffer 400766-13
Wash Buffer (2X) 400761-16
Validation date: 12/24/2019

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses: Analytical reagent.
DNA Extraction Buffer: 20 ml
Wash Buffer (2X): 25 ml

1.3 Details of the supplier of the safety data sheet
Supplier/Manufacturer: Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number
In case of emergency: CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture
OSHA/HCS status: DNA Extraction Buffer
Wash Buffer (2X)

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 SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

DNA Extraction Buffer
H302 ACUTE TOXICITY (oral) - Category 4
H332 ACUTE TOXICITY (inhalation) - Category 4
H412 AQUATIC HAZARD (LONG-TERM) - Category 3

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

Wash Buffer (2X)
Percentage of the mixture consisting of ingredient (s) of unknown acute inhalation toxicity: 1 - 10%

DNA Extraction Buffer
Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 1.6%
Section 2. Hazards identification

2.2 GHS label elements

Hazard pictograms: DNA Extraction Buffer

Signal word: DNA Extraction Buffer
Warning
Wash Buffer (2X)
No signal word.

Hazard statements: DNA Extraction Buffer
H302 + H332 - Harmful if swallowed or if inhaled.
H412 - Harmful to aquatic life with long lasting effects.

Wash Buffer (2X)
No known significant effects or critical hazards.

Precautionary statements

Prevention: DNA Extraction Buffer
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapor.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.

Wash Buffer (2X)
Not applicable.

Response: DNA Extraction Buffer
P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
Rinse mouth.

Wash Buffer (2X)
Not applicable.

Storage: DNA Extraction Buffer
Not applicable.
Wash Buffer (2X)
Not applicable.

Disposal: DNA Extraction Buffer
P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Wash Buffer (2X)
Not applicable.

Supplemental label elements: DNA Extraction Buffer
None known.
Wash Buffer (2X)
None known.

2.3 Other hazards

Hazard statements not otherwise classified: DNA Extraction Buffer
None known.
Wash Buffer (2X)
None known.

Section 3. Composition/information on ingredients

Substance/mixture: DNA Extraction Buffer
Mixture
Wash Buffer (2X)
Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA Extraction Buffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guanidinium thiocyanate</td>
<td>≥25 - ≤50</td>
<td>593-84-0</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>≤3</td>
<td>1185-53-1</td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>≤3</td>
<td>7647-14-5</td>
</tr>
</tbody>
</table>

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

Date of issue: 12/24/2019
Section 3. Composition/information on ingredients

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

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact

DNA Extraction Buffer

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 if irritation occurs.

Wash Buffer (2X)

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

DNA Extraction Buffer

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. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. 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.

Wash Buffer (2X)

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

DNA Extraction Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Wash Buffer (2X)

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion

DNA Extraction Buffer

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. If necessary, call a poison center or physician. Never
Section 4. First aid measures

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.

Wash Buffer (2X) 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

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Harmful if inhaled.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Harmful if swallowed.</td>
<td></td>
</tr>
</tbody>
</table>

Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>

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

Notes to physician

<table>
<thead>
<tr>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td></td>
</tr>
</tbody>
</table>

Specific treatments

<table>
<thead>
<tr>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific treatment.</td>
<td></td>
</tr>
</tbody>
</table>

Protection of first-aiders

<table>
<thead>
<tr>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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. No action shall be taken involving any personal risk or without suitable training.</td>
<td></td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)
Section 5. Fire-fighting measures

5.1 Extinguishing media

<table>
<thead>
<tr>
<th align="left">Suitable extinguishing media</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">Unsuitable extinguishing media</td>
<td>DNA Extraction Buffer</td>
<td>Wash Buffer (2X)</td>
</tr>
</tbody>
</table>

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical: DNA Extraction Buffer

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: DNA Extraction Buffer

Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- halogenated compounds

In a fire or if heated, a pressure increase will occur and the container may burst.

5.3 Advice for firefighters

Special protective actions for fire-fighters: DNA Extraction Buffer

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: DNA Extraction Buffer

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
## Section 6. Accidental release measures

### 6.2 Environmental precautions

<table>
<thead>
<tr>
<th>For non-emergency personnel</th>
<th>DNA Extraction Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td></td>
</tr>
<tr>
<td>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.</td>
<td></td>
</tr>
<tr>
<td>DNA Extraction Buffer</td>
<td></td>
</tr>
<tr>
<td>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). Water polluting material. May be harmful to the environment if released in large quantities.</td>
<td></td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td></td>
</tr>
</tbody>
</table>

### 6.3 Methods and materials for containment and cleaning up

<table>
<thead>
<tr>
<th>Methods for cleaning up</th>
<th>DNA Extraction Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>DNA Extraction Buffer</td>
<td></td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

7.1 Precautions for safe handling

**Protective measures**

- **DNA Extraction Buffer**
  - Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. 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. Empty containers retain product residue and can be hazardous. Do not reuse container.

- **Wash Buffer (2X)**
  - Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene**

- **DNA Extraction Buffer**
  - 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.

- **Wash Buffer (2X)**
  - 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

- **DNA Extraction Buffer**
  - 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. See Section 10 for incompatible materials before handling or use.

- **Wash Buffer (2X)**
  - 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. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

**Recommendations**

- **DNA Extraction Buffer**
  - Industrial applications, Professional applications.

- **Wash Buffer (2X)**
  - Industrial applications, Professional applications.
Section 7. Handling and storage

<table>
<thead>
<tr>
<th>Industrial sector specific solutions</th>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA Extraction Buffer</td>
<td>Guanidinium thiocyanate</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>None.</td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td>Sodium chloride</td>
</tr>
<tr>
<td></td>
<td>None.</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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

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

Respiratory protection: 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.

Date of issue: 12/24/2019
Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>DNA Extraction Buffer</th>
<th>Liquid.</th>
<th>Wash Buffer (2X)</th>
<th>Liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>7.5</td>
</tr>
<tr>
<td>Melting point</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>0°C (32°F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>100°C (212°F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>DNA Extraction Buffer</td>
<td>Not applicable.</td>
<td>Wash Buffer (2X)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>DNA Extraction Buffer</td>
<td>Soluble in the following materials: cold water and hot water.</td>
<td>Wash Buffer (2X)</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>DNA Extraction Buffer</td>
<td>Not available.</td>
<td>Wash Buffer (2X)</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

10.1 Reactivity

<table>
<thead>
<tr>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</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>
</tr>
</tbody>
</table>

10.2 Chemical stability

<table>
<thead>
<tr>
<th>DNA Extraction Buffer</th>
<th>Wash Buffer (2X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

10.3 Possibility of hazardous reactions
- DNA Extraction Buffer
- DNA Extraction Buffer
Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
- DNA Extraction Buffer
- DNA Extraction Buffer
No specific data.

10.5 Incompatible materials
- DNA Extraction Buffer
- DNA Extraction Buffer
May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products
- DNA Extraction Buffer
- DNA Extraction Buffer
Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<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>Wash Buffer (2X)</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3000 mg/kg</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>Wash Buffer (2X)</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization
Not available.

Mutagenicity
Conclusion/Summary: Not available.

Carcinogenicity
Conclusion/Summary: Not available.

Reproductive toxicity
Conclusion/Summary: Not available.

Teratogenicity
Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)
Section 11. Toxicological information

### Information on the likely routes of exposure

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA Extraction Buffer</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Potential acute health effects

- **Eye contact**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - Routes of entry anticipated: Oral, Dermal, Inhalation.

- **Inhalation**: DNA Extraction Buffer
  - Harmful if inhaled.

- **Skin contact**: DNA Extraction Buffer
  - No known significant effects or critical hazards.

- **Ingestion**: DNA Extraction Buffer
  - Harmful if swallowed.
  - No known significant effects or critical hazards.

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

- **Eye contact**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No specific data.

- **Inhalation**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No specific data.

- **Skin contact**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No specific data.

- **Ingestion**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No specific data.

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

#### Short term exposure

- **Potential immediate effects**: Not available.

- **Potential delayed effects**: Not available.

#### Long term exposure

- **Potential immediate effects**: Not available.

- **Potential delayed effects**: Not available.

### Potential chronic health effects

- **General**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No known significant effects or critical hazards.

- **Carcinogenicity**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No known significant effects or critical hazards.

- **Mutagenicity**: DNA Extraction Buffer
  - Wash Buffer (2X)
  - No known significant effects or critical hazards.
Section 11. Toxicological information

Teratogenicity: DNA Extraction Buffer
No known significant effects or critical hazards.

Developmental effects: DNA Extraction Buffer
No known significant effects or critical hazards.

Fertility effects: DNA Extraction Buffer
No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapors) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA Extraction Buffer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNA Extraction Buffer</td>
<td>1057.1</td>
<td>2325.6</td>
<td>N/A</td>
<td>N/A</td>
<td>3.2</td>
</tr>
<tr>
<td>Guanidinium thiocyanate</td>
<td>500</td>
<td>1100</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td>258620.7</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>3000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Section 12. Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash Buffer (2X)</td>
<td>Acute EC50 4.74 g/L Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 519.6 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosus</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute IC50 6.87 g/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Fish - Morone saxatilis - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic LC10 781 mg/l Fresh water</td>
<td>Crustaceans - Hyalella azteca -</td>
<td>3 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Juvenile (Fledgling, Hatchling,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weanling)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 6 g/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.314 g/L Fresh water</td>
<td>Daphnia - Daphnia pulex</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 mg/l Fresh water</td>
<td>Fish - Gambusia holbrooki - Adult</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Soil/water partition coefficient (K<sub>OC</sub>): Not available.

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

Date of issue: 12/24/2019
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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

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

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

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Edetic acid
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

Date of issue : 12/24/2019
Section 15. Regulatory information

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ : Not applicable.
SARA 311/312
Classification : DNA Extraction Buffer
                Wash Buffer (2X)

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA Extraction Buffer</td>
<td>≥25 - ≤50</td>
<td>ACUTE TOXICITY (oral) - Category 4</td>
</tr>
<tr>
<td>Guanidinium thiocyanate</td>
<td></td>
<td>ACUTE TOXICITY (dermal) - Category 4</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)</td>
<td>≤3</td>
<td>ACUTE TOXICITY (inhalation) - Category 4</td>
</tr>
<tr>
<td>propane-1,3-diol hydrochloride</td>
<td></td>
<td>SKIN IRRITATION - Category 2</td>
</tr>
<tr>
<td>Wash Buffer (2X)</td>
<td>≤3</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td></td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
</tr>
</tbody>
</table>

State regulations
Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.
California Prop. 65
This product does not require a Safe Harbor warning under California Prop. 65.

International regulations
Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol
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 : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : Japan inventory (ENCS): All components are listed or exempted.
         Japan inventory (ISHL): All components are listed or exempted.

Date of issue : 12/24/2019
Section 15. Regulatory information

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

Section 16. Other information

History
Date of issue: 12/24/2019
Date of previous issue: 12/29/2017
Version: 3

Key to abbreviations:
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
N/A = Not available
UN = United Nations

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA Extraction Buffer</td>
<td></td>
</tr>
<tr>
<td>ACUTE TOXICITY (oral) - Category 4</td>
<td>Calculation method</td>
</tr>
<tr>
<td>ACUTE TOXICITY (inhalation) - Category 4</td>
<td>Calculation method</td>
</tr>
<tr>
<td>AQUATIC HAZARD (LONG-TERM) - Category 3</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Indicates information that has changed from previously issued version.

Notice to reader

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