SAFETY DATA SHEET

20X Rapid Run™ Buffer

Section 1. Identification

GHS product identifier : 20X Rapid Run™ Buffer
Code : 77523
Other means of identification : Not available.
Supplier/Manufacturer : 3420 Central Expressway, Santa Clara  CA 95051
In case of emergency : Chemtrec: 1 800 424 9300
Outside USA & Canada: +1 703 527 3887

Section 2. Hazards identification

OSHA/HCS status : 20X Rapid Run™ Buffer
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
RapidRun Loading Dye, Ultrapure
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : 20X Rapid Run™ Buffer
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
RapidRun Loading Dye, Ultrapure

GHS label elements
Hazard pictograms :

Signal word : 20X Rapid Run™ Buffer
Warning
RapidRun Loading Dye, Ultrapure
Warning

Hazard statements : 20X Rapid Run™ Buffer
Causes serious eye irritation.
Causes skin irritation.
May cause respiratory irritation.
Causes eye irritation.
RapidRun Loading Dye, Ultrapure

Precautionary statements
General : 20X Rapid Run™ Buffer
Not applicable.
RapidRun Loading Dye, Ultrapure
Not applicable.
Prevention : 20X Rapid Run™ Buffer
Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.
RapidRun Loading Dye, Ultrapure
Wear eye or face protection. Wash hands thoroughly after handling.
Section 2. Hazards identification

Response: 20X Rapid Run™ Buffer
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: 20X Rapid Run™ Buffer
Store locked up.
RapidRun Loading Dye, Ultrapure
Not applicable.

Disposal: 20X Rapid Run™ Buffer
Dispose of contents and container in accordance with all local, regional, national and international regulations.
RapidRun Loading Dye, Ultrapure
Not applicable.

Supplemental label elements: 20X Rapid Run™ Buffer
None known.
RapidRun Loading Dye, Ultrapure
None known.

Hazard not otherwise classified: 20X Rapid Run™ Buffer
None known.
RapidRun Loading Dye, Ultrapure
None known.

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>20X Rapid Run™ Buffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trometamol</td>
<td>10 - 25</td>
<td>77-86-1</td>
</tr>
<tr>
<td>taurine</td>
<td>1 - 10</td>
<td>107-35-7</td>
</tr>
<tr>
<td>RapidRun Loading Dye, Ultrapure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td>25 - 50</td>
<td>56-81-5</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.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: 20X Rapid Run™ 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.
RapidRun Loading Dye, Ultrapure
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. If irritation persists, get medical attention.
Section 4. First aid measures

**Inhalation**

<table>
<thead>
<tr>
<th>Substance</th>
<th>First aid measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>20X Rapid Run™ Buffer</td>
<td>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 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.</td>
</tr>
<tr>
<td>RapidRun Loading Dye, Ultrapure</td>
<td>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 if adverse health effects persist or are severe. 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>
</tbody>
</table>

**Skin contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>First aid measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>20X Rapid Run™ Buffer</td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
</tr>
<tr>
<td>RapidRun Loading Dye, Ultrapure</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Ingestion**

<table>
<thead>
<tr>
<th>Substance</th>
<th>First aid measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>20X Rapid Run™ Buffer</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 if adverse health effects persist or are severe. 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>RapidRun Loading Dye, Ultrapure</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 if adverse health effects persist or are severe. 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>
</tbody>
</table>
Section 4. First aid measures

personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. 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 : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure Causes serious eye irritation. Causes eye irritation.

Inhalation : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. No known significant effects or critical hazards.

Skin contact : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure Causes skin irritation. No known significant effects or critical hazards.

Ingestion : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure Irritating to mouth, throat and stomach. May be irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure Adverse symptoms may include the following: pain or irritation watering redness

Inhalation : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure Adverse symptoms may include the following: respiratory tract irritation coughing

Skin contact : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure Adverse symptoms may include the following: irritation redness

Ingestion : 20X Rapid Run™ Buffer RapidRun Loading Dye, Ultrapure

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

Notes to physician : 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 : No specific treatment.
Section 4. First aid measures

Protection of first-aiders: 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: 20X Rapid Run™ Buffer
RapidRun Loading Dye, Ultrapure
Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: 20X Rapid Run™ Buffer
RapidRun Loading Dye, Ultrapure
None known.

Specific hazards arising from the chemical: 20X Rapid Run™ Buffer
RapidRun Loading Dye, Ultrapure
In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products: 20X Rapid Run™ Buffer
RapidRun Loading Dye, Ultrapure
Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides

Special protective actions for fire-fighters: 20X Rapid Run™ Buffer
RapidRun Loading Dye, Ultrapure
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: 20X Rapid Run™ Buffer
RapidRun Loading Dye, Ultrapure
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

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.

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".

Environmental precautions: 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).

Methods and materials for containment and cleaning up

Small spill: 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.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: 20X Rapid Run™ 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. 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.

RapidRun Loading Dye, Ultrapure. Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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.

Advice on general occupational hygiene: 20X Rapid Run™ 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.

RapidRun Loading Dye, Ultrapure. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and
Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities**

- **20X Rapid Run™ 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. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

- **RapidRun Loading Dye, Ultrapure**
  - 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.

Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RapidRun Loading Dye, Ultrapure, glycerol</td>
<td>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 15 mg/m³ 8 hours. Form: Total dust</td>
</tr>
</tbody>
</table>

**Appropriate engineering controls**

- Use only with adequate ventilation. 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**
Section 8. Exposure controls/personal protection

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

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

**Skin protection**

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

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

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

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

Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>20X Rapid Run™ Buffer Liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>20X Rapid Run™ Buffer Not available.</td>
</tr>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>20X Rapid Run™ Buffer Not available.</td>
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<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>20X Rapid Run™ Buffer Not available.</td>
</tr>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>20X Rapid Run™ Buffer Not available.</td>
</tr>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not available.</td>
</tr>
<tr>
<td>Flammable limits</td>
<td>20X Rapid Run™ Buffer Not available.</td>
</tr>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not available.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>20X Rapid Run™ Buffer Not applicable.</td>
</tr>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not applicable.</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>20X Rapid Run™ Buffer Not applicable.</td>
</tr>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure Not applicable.</td>
</tr>
</tbody>
</table>
Section 9. Physical and chemical properties

| Property                          | Buffer Type                      |layın
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Relative density</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Vapor density</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Volatility</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Viscosity</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Solubility</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Physical/chemical properties</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

| Property                           | Buffer Type                      |藜覌
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>20X Rapid Run™ Buffer</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Incompatible materials</th>
<th>20X Rapid Run™ Buffer</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous decomposition products</th>
<th>20X Rapid Run™ Buffer</th>
<th>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RapidRun Loading Dye, Ultrapure</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>20X Rapid Run™ Buffer</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>taurine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RapidRun Loading Dye,</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>21900 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Ultrapure glycerol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 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>20X Rapid Run™ Buffer</td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>25 Percent 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>trometamol</td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1 Percent</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Woman</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>RapidRun Loading Dye,</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Ultrapure glycerol</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)
## 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>20X Rapid Run™ Buffer</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>taurine</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 the likely routes of exposure
Not available.

### Potential acute health effects

- **Eye contact**: 
- **Inhalation**: 
- **Skin contact**: 
- **Ingestion**: 

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

- **Eye contact**: 
- **Inhalation**: 
- **Skin contact**: 
- **Ingestion**: 

## 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**: 
- **Potential delayed effects**: 

### Potential chronic health effects
Not available.

- **General**: 
- **Carcinogenicity**: 
- **Mutagenicity**: 
- **Teratogenicity**: 
- **Developmental effects**: 
- **Fertility effects**: 

### Numerical measures of toxicity

**Acute toxicity estimates**
Section 11. Toxicological information

Not available.

Interactive effects:

Other information:

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>RapidRun Loading Dye, Ultrapure glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (K_{OC})</th>
<th>20X Rapid Run™ Buffer</th>
<th>RapidRun Loading Dye, Ultrapure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

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.

Section 14. Transport information
Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>

UN proper shipping name
- Not regulated.

Transport hazard class(es)
- Not regulated.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not available.

Transport within user's premises
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.

Section 15. Regulatory information

U.S. Federal regulations
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
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
Immediate (acute) health hazard
Section 15. Regulatory information

<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>trometamol</td>
<td>1 - 10</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>taurine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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.

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 Inform Consent (PIC)
  Not listed.
- UNECE Aarhus Protocol on POPs and Heavy Metals
  Not listed.

Canada
- WHMIS (Canada): 20X Rapid Run™ Buffer, RapidRun Loading Dye, Ultrapure
  Class D-2B: Material causing other toxic effects (Toxic).
  Not controlled under WHMIS (Canada).

Canadian lists
- Canadian NPRI: None of the components are listed.
- CEPA Toxic substances: None of the components are listed.
- Canada inventory: All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)
Section 16. Other information

History
Date of issue/Date of revision : 05/27/2016.
Date of previous issue : No previous validation.
Version : 1
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
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.