SAFETY DATA SHEET

PrepEase® DNA Clean-Up Kit

Section 1. Identification

GHS product identifier : PrepEase® DNA Clean-Up Kit
Code : 78758
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

N2P Binding Buffer
Warning
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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

NT3 Wash Buffer
Warning
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

N2P Binding Buffer
FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

NE Elution Buffer
No classified.

NT3 Wash Buffer
No classified.

GHS label elements

Hazard pictograms :

Signal word

N2P Binding Buffer
Warning
NE Elution Buffer
No signal word.
NT3 Wash Buffer
No signal word.

Hazard statements

N2P Binding Buffer
Flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.
May cause drowsiness and dizziness.

NE Elution Buffer
No known significant effects or critical hazards.

NT3 Wash Buffer
No known significant effects or critical hazards.

Precautionary statements
Section 2. Hazards identification

General

Prevention:

N2P Binding Buffer
Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

NE Elution Buffer
Not applicable.

NT3 Wash Buffer
Not applicable.

Response:

N2P Binding 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 SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. 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.

NE Elution Buffer
Not applicable.

NT3 Wash Buffer
Not applicable.

Storage:

N2P Binding Buffer
Store locked up. Store in a well-ventilated place. Keep cool.

NE Elution Buffer
Not applicable.

NT3 Wash Buffer
Not applicable.

Disposal:

N2P Binding Buffer
Dispose of contents and container in accordance with all local, regional, national and international regulations.

NE Elution Buffer
Not applicable.

NT3 Wash Buffer
Not applicable.

Supplemental label elements:

N2P Binding Buffer
None known.

NE Elution Buffer
None known.

NT3 Wash Buffer
None known.

Hazard not otherwise classified:

N2P Binding Buffer
None known.

NE Elution Buffer
None known.

NT3 Wash Buffer
None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2P Binding Buffer guanidinium chloride; guanadine hydrochloride Isopropyl alcohol</td>
<td>36 - 50</td>
<td>50-01-1</td>
</tr>
<tr>
<td></td>
<td>20 - 50</td>
<td>67-63-0</td>
</tr>
</tbody>
</table>

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

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
Section 3. Composition/information on ingredients

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

Section 4. First aid measures

Description of necessary first aid measures

**Eye contact**
- **N2P Binding 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.
- **NE Elution Buffer**: 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.
- **NT3 Wash Buffer**: 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**
- **N2P Binding 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 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.
- **NE Elution Buffer**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- **NT3 Wash Buffer**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact**
- **N2P Binding Buffer**: 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.
- **NE Elution Buffer**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **NT3 Wash Buffer**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion**
- **N2P Binding 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...
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 necessary, call a poison center or 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.

NE Elution Buffer
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.

NT3 Wash Buffer
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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact
N2P Binding Buffer: Causes serious eye irritation.
NE Elution Buffer: No known significant effects or critical hazards.
NT3 Wash Buffer: No known significant effects or critical hazards.

Inhalation
N2P Binding Buffer: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
NE Elution Buffer: No known significant effects or critical hazards.
NT3 Wash Buffer: No known significant effects or critical hazards.

Skin contact
N2P Binding Buffer: Causes skin irritation.
NE Elution Buffer: No known significant effects or critical hazards.
NT3 Wash Buffer: No known significant effects or critical hazards.

Ingestion
N2P Binding Buffer: Harmful if swallowed. Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.
NE Elution Buffer: No known significant effects or critical hazards.
NT3 Wash Buffer: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact
N2P Binding Buffer: Adverse symptoms may include the following: pain or irritation, watering, redness
NE Elution Buffer: No specific data.
NT3 Wash Buffer: No specific data.

Inhalation
N2P Binding Buffer: Adverse symptoms may include the following: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness
NE Elution Buffer: No specific data.
NT3 Wash Buffer: No specific data.
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.

**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.

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

**Skin contact**: N2P Binding Buffer
- Adverse symptoms may include the following: irritation, redness
- NE Elution Buffer: No specific data.
- NT3 Wash Buffer: No specific data.

**Ingestion**: N2P Binding Buffer
- No specific data.
- NE Elution Buffer: No specific data.
- NT3 Wash Buffer: No specific data.

Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**: N2P Binding Buffer
- Use dry chemical, CO₂, water spray (fog) or foam.
- NE Elution Buffer
- Use an extinguishing agent suitable for the surrounding fire.
- NT3 Wash Buffer
- Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: N2P Binding Buffer
- Do not use water jet.
- NE Elution Buffer
- None known.
- NT3 Wash Buffer
- None known.

**Specific hazards arising from the chemical**: N2P Binding Buffer
- Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- NE Elution Buffer
- In a fire or if heated, a pressure increase will occur and the container may burst.
- NT3 Wash Buffer
- In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**: N2P Binding Buffer
- Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, halogenated compounds.
- NE Elution Buffer: No specific data.
- NT3 Wash Buffer: No specific data.
Section 5. Fire-fighting measures

Special protective actions for fire-fighters : N2P Binding 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

NE Elution 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.

NT3 Wash 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 : N2P Binding Buffer
- Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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

NT3 Wash 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

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:
- **N2P Binding 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. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene:
- **N2P Binding 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.

Conditions for safe storage, including any incompatibilities:
- **N2P Binding Buffer**: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

- **NE Elution Buffer**: Put on appropriate personal protective equipment (see Section 8).

- **NT3 Wash Buffer**: Put on appropriate personal protective equipment (see Section 8).

- **NE Elution 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.

- **NT3 Wash 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.

- **NE Elution 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
Section 7. Handling and storage

- 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.

NT3 Wash 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.

Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2P Binding Buffer</td>
<td>ACGIH TLV (United States, 3/2015).</td>
</tr>
<tr>
<td></td>
<td>TWA: 200 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 400 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>TWA: 400 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 980 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 500 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>STEL: 1225 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>NIOSH REL (United States, 10/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 400 ppm 10 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 980 mg/m³ 10 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 500 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>STEL: 1225 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 400 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 980 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Control parameters

Occupational exposure 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:

- 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.

Hygiene measures:

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.
Section 8. Exposure controls/personal protection

**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.

**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

**Physical state**
- N2P Binding Buffer: Liquid.
- NE Elution Buffer: Liquid.
- NT3 Wash Buffer: Liquid.

**Color**
- N2P Binding Buffer: Colorless.
- NE Elution Buffer: Colorless.
- NT3 Wash Buffer: Colorless.

**Odor**
- N2P Binding Buffer: Alcohol-like.
- NE Elution Buffer: Odorless.
- NT3 Wash Buffer: Odorless.

**Flash point**
- N2P Binding Buffer: Open cup: 23°C (73.4°F)
- NE Elution Buffer: Not available.
- NT3 Wash Buffer: Not available.

**Auto-ignition temperature**
- N2P Binding Buffer: Not available.
- NE Elution Buffer: Not available.
- NT3 Wash Buffer: Not available.

**Flammable limits**
- N2P Binding Buffer: Not available.
- NE Elution Buffer: Not available.
- NT3 Wash Buffer: Not available.

**Molecular weight**
- N2P Binding Buffer: Not applicable.
- NE Elution Buffer: Not applicable.
- NT3 Wash Buffer: Not applicable.

**Molecular formula**
- N2P Binding Buffer: Not applicable.
- NE Elution Buffer: Not applicable.
- NT3 Wash Buffer: Not applicable.

**pH**
- N2P Binding Buffer: 7 to 8
- NE Elution Buffer: 8 to 9
- NT3 Wash Buffer: 7 to 8

**Boiling/condensation point**
- N2P Binding Buffer: Not available.
- NE Elution Buffer: Not available.
- NT3 Wash Buffer: Not available.
### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Buffer</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Melting/freezing point</td>
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</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
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</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>N2P Binding Buffer</td>
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</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>Not available.</td>
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<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>Not available.</td>
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<td>Vapor pressure</td>
<td>N2P Binding Buffer</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>NT3 Wash Buffer</td>
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<tr>
<td>Vapor density</td>
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</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Volatility</td>
<td>N2P Binding Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>N2P Binding Buffer</td>
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</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N2P Binding Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>Not available.</td>
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<tr>
<td></td>
<td>NT3 Wash Buffer</td>
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<tr>
<td>Solubility</td>
<td>N2P Binding Buffer</td>
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</tr>
<tr>
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<td>NE Elution Buffer</td>
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</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>Not available.</td>
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<td>Physical/chemical properties</td>
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<td>comments</td>
<td>NE Elution Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
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</tbody>
</table>

### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Buffer</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>N2P Binding Buffer</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>N2P Binding Buffer</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>N2P Binding Buffer</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td></td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>N2P Binding Buffer</td>
<td>Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. No specific data.</td>
</tr>
<tr>
<td></td>
<td>NE Elution Buffer</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>NT3 Wash Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

Incompatible materials: N2P Binding Buffer Reactive or incompatible with the following materials: oxidizing materials
NE Elution Buffer No specific data.
NT3 Wash Buffer No specific data.

Hazardous decomposition products: N2P Binding Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
NE Elution Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
NT3 Wash Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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>N2P Binding Buffer</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>475 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>guanidinium chloride;</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>12800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>guanadine hydrochloride</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>81400 Micrograms 24 hours 500 milligrams</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</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>N2P Binding Buffer</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>81400 Micrograms 24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>guanidinium chloride;</td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>guanadine hydrochloride</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization
Not available.

Mutagenicinity
Not available.

Carcinogenicity
Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2P Binding Buffer</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Reproductive toxicity
Not available.

Teratogenicity
Section 11. Toxicological information

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>N2P Binding Buffer</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td></td>
<td></td>
<td></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**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N2P Binding Buffer</td>
<td>1025.4 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
</tbody>
</table>

**Interactive effects**

**Other information**

**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>N2P Binding Buffer</td>
<td>Acute LC50 1400000 µg/l Marine water</td>
<td>Crustaceans - Crangon crangon</td>
<td>48 hours</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>Acute LC50 42000 mg/l Fresh water</td>
<td>Fish - Rasbora heteromorpha</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

Not available.

**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>N2P Binding Buffer</td>
<td>-1.7</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>guanidinium chloride;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>guanadine hydrochloride</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>0.05</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (K&lt;sub&gt;oc&lt;/sub&gt;)</th>
<th>N2P Binding Buffer</th>
<th>NE Elution Buffer</th>
<th>NT3 Wash Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</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

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1993</td>
<td>UN1993</td>
<td>UN1993</td>
<td>UN1993</td>
<td>UN1993</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Flammable Liquid, n.o.s. (Isopropanol solution)</td>
<td>Flammable Liquid, n.o.s. (Isopropanol solution)</td>
<td>Flammable Liquid, n.o.s. (Isopropanol solution)</td>
<td>Flammable Liquid, n.o.s. (Isopropanol solution)</td>
<td>Flammable Liquid, n.o.s. (Isopropanol solution)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Special provisions 640 (E)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tunnel code (D/E)</td>
<td></td>
</tr>
</tbody>
</table>

### 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 73/78 and the IBC Code:** Not available.

## 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
## Section 15. Regulatory information

### DEA List I Chemicals
**Precursor Chemicals**
- Not listed

### DEA List II Chemicals
**Essential Chemicals**
- Not listed

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

**SARA 304 RQ**
- Not applicable.

### SARA 311/312
**Classification**
- Immediate (acute) health hazard

**Composition/information on ingredients**

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
</table>

### SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>N2P Binding Buffer Isopropyl alcohol</td>
<td>67-63-0</td>
</tr>
<tr>
<td>Supplier notification</td>
<td>N2P Binding Buffer Isopropyl alcohol</td>
<td>67-63-0</td>
</tr>
</tbody>
</table>

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

### State regulations

- **Massachusetts**
  - The following components are listed: ISOPROPYL ALCOHOL

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

- **New Jersey**
  - The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL

- **Pennsylvania**
  - The following components are listed: 2-PROPANOL

### 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
Section 15. Regulatory information

**WHMIS (Canada)**
- N2P Binding Buffer: Class B-2: Flammable liquid
- Class D-1B: Material causing immediate and serious toxic effects (Toxic).
- Class D-2B: Material causing other toxic effects (Toxic).
- NE Elution Buffer
- NT3 Wash Buffer

**Canadian lists**
- **Canadian NPRI**: The following components are listed: Isopropyl alcohol
- **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.)**
- **Health**: 2
- **Flammability**: 3
- **Physical hazards**: 0

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

**National Fire Protection Association (U.S.A.)**
- **Health**: 2
- **Flammability**: 3
- **Instability/Reactivity**: 0
- **Special**: 0

**History**
- **Date of issue/Date of revision**: 12/22/2015.
- **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
- **MARPOL 73/78** = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- **UN** = United Nations

*Indicates information that has changed from previously issued version.

**Notice to reader**
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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.