SAFETY DATA SHEET
xGen® 10x Wash 1 Buffer


1. Identification

Product identifier
Product name xGen® 10x Wash 1 Buffer

Recommended use of the chemical and restrictions on use
Application For research and development purposes only.

Uses advised against No specific uses advised against are identified.

Details of the supplier of the safety data sheet
Manufacturer Integrated DNA Technologies
1710 Commercial Park
Coralville Iowa, 52241
custcare@idtdna.com

Emergency telephone number
Emergency telephone ChemTrec 800-424-9300

2. Hazard(s) identification

Classification of the substance or mixture
Physical hazards Not Classified
Health hazards Eye Dam. 1 - H318
Environmental hazards Aquatic Acute 3 - H402

Label elements
Pictogram

Signal word Danger

Hazard statements H318 Causes serious eye damage.
H402 Harmful to aquatic life.

Precautionary statements P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/ doctor.
P501 Dispose of contents/ container in accordance with national regulations.

Contains Sodium dodecyl sulfate

Other hazards This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

1/9
xGen® 10x Wash 1 Buffer

Mixtures

<table>
<thead>
<tr>
<th>Sodium dodecyl sulfate</th>
<th>1-5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 151-21-3</td>
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</tr>
</tbody>
</table>

Classification

- Flam. Sol. 2 - H228
- Acute Tox. 4 - H302
- Acute Tox. 4 - H332
- Skin Irrit. 2 - H315
- Eye Dam. 1 - H318
- Aquatic Acute 2 - H401
- Aquatic Chronic 3 - H412

The full text for all hazard statements is displayed in Section 16.

Composition comments

The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information

Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Inhalation

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

Ingestion

Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel.

Skin Contact

Rinse with water.

Eye contact

Rinse immediately with plenty of water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

Protection of first aiders

First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

No specific symptoms known.

Ingestion

No specific symptoms known.

Skin contact

No specific symptoms known.

Eye contact

Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Indication of immediate medical attention and special treatment needed

Notes for the doctor

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards

Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products

Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.
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Advice for firefighters
Protective actions during firefighting
Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures
Personal precautions, protective equipment and emergency procedures
Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material.

Environmental precautions
Avoid discharge to the aquatic environment.

Methods and material for containment and cleaning up
Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Small Spillages: Collect spillage. Large Spillages: Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage
Precautions for safe handling
Usage precautions
Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities
Storage precautions
Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

Storage class
Chemical storage.

Specific end uses(s)
The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection
Trisodium citrate dihydrate (CAS: 6132-04-3)
Ingredient comments
No exposure limits known for ingredient(s).
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Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Hygiene measures

Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection

Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

Environmental exposure controls

Keep container tightly sealed when not in use. 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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance

Liquid.

Color

Clear.

Odor

Odorless.

Odor threshold

Not available.

pH

Not available.

Melting point

Not available.

Initial boiling point and range

Not available.

Flash point

68.3°C/154.94°F

Evaporation rate

Not available.

Evaporation factor

Not available.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Not available.

Other flammability

Not available.

Vapor pressure

Not available.

Vapor density

Not available.

Relative density

Not available.

Bulk density

Not available.

Solubility(ies)

Not available.
Partition coefficient
Not available.

Auto-ignition temperature
Not available.

Decomposition Temperature
Not available.

Viscosity
Not available.

Explosive properties
Not considered to be explosive.

Explosive under the influence of a flame
Not available.

Oxidizing properties
Not available.

Other information
None.

10. Stability and reactivity
Reactivity
See the other subsections of this section for further details.

Stability
Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

Possibility of hazardous reactions
No potentially hazardous reactions known.

Conditions to avoid
There are no known conditions that are likely to result in a hazardous situation.

Materials to avoid
No specific material or group of materials is likely to react with the product to produce a hazardous situation.

Hazardous decomposition products
Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information
Information on toxicological effects

Acute toxicity - oral
Notes (oral LD₅₀)
Based on available data the classification criteria are not met.

ATE oral (mg/kg)
16,666.67

Acute toxicity - dermal
Notes (dermal LD₅₀)
Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀)
Based on available data the classification criteria are not met.

ATE inhalation (dusts/mists mg/l)
50.0

Skin corrosion/irritation
Animal data
Based on available data the classification criteria are not met.

Serious eye damage/irritation
Serious eye damage/irritation
Eye Dam. 1 - H318 Causes serious eye damage.

Respiratory sensitization
Respiratory sensitization
Based on available data the classification criteria are not met.

Skin sensitization
Skin sensitization
Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro
Based on available data the classification criteria are not met.
Carcinogenicity
Based on available data the classification criteria are not met.

IARC carcinogenicity
None of the ingredients are listed or exempt.

Reproductive toxicity
Based on available data the classification criteria are not met.

Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Reproductive toxicity - development
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
Not classified as a specific target organ toxicant after a single exposure.

Target organs
Respiratory system, lungs

Specific target organ toxicity - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Based on available data the classification criteria are not met.

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
No specific symptoms known.

Ingestion
No specific symptoms known.

Skin Contact
No specific symptoms known.

Eye contact
Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Route of exposure
Ingestion Inhalation Skin and/or eye contact

Target Organs
No specific target organs known.

12. Ecological Information

Ecotoxicity
Not regarded as dangerous for the environment.

Toxicity
Based on available data the classification criteria are not met.

Persistence and degradability
The degradability of the product is not known.

Bioaccumulative potential
No data available on bioaccumulation.

Partition coefficient
Not available.

Mobility in soil
No data available.

Mobility
None known.

Other adverse effects

13. Disposal considerations

Waste treatment methods
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General information
The generation of waste should be minimized or avoided wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods
Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

## 14. Transport information

<table>
<thead>
<tr>
<th>General</th>
<th>The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN Number</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>UN No. (DOT)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Proper shipping name (DOT) Not applicable.</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>DOT transport labels No transport warning sign required.</td>
</tr>
<tr>
<td>Packing group</td>
<td>DOT packing group Not applicable.</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>DOT reportable quantity Not applicable.</td>
</tr>
<tr>
<td>DOT TIH Zone</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

## 15. Regulatory information

<table>
<thead>
<tr>
<th>US Federal Regulations</th>
<th>SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>SARA Extremely Hazardous Substances EPCRA Reportable Quantities</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>SARA 313 Emission Reporting</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>CAA Accidental Release Prevention</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>FDA - Essential Chemical</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>FDA - Precursor Chemical</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td>SARA (311/312) Hazard Categories</td>
</tr>
<tr>
<td>None of the ingredients are listed or exempt.</td>
<td></td>
</tr>
</tbody>
</table>
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OSHA  Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations
California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
None of the ingredients are listed or exempt.

Massachusetts "Right To Know" List
None of the ingredients are listed or exempt.

Rhode Island "Right To Know" List
None of the ingredients are listed or exempt.

Minnesota "Right To Know" List
None of the ingredients are listed or exempt.

New Jersey "Right To Know" List
The following ingredients are listed or exempt:
Trisodium citrate dihydrate
Sodium dodecyl sulfate

Pennsylvania "Right To Know" List
The following ingredients are listed or exempt:
Trisodium citrate dihydrate
Sodium dodecyl sulfate

Inventories
US - TSCA
The following ingredients are listed or exempt:
water
Sodium dodecyl sulfate

US - TSCA 12(b) Export Notification
None of the ingredients are listed or exempt.

16. Other information

Eye Dam. = Serious eye damage

Only trained personnel should use this material.

Contact legal for statement

Revision date 1/17/2018

Revision 4

SDS No. 4600
xGen® 10x Wash 1 Buffer

Hazard statements in full

H228 Flammable solid.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H401 Toxic to aquatic life.
H402 Harmful to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

The information in this safety data sheet is, to the best of our knowledge, correct as of the date it was issued. We do not guarantee that this safety data sheet includes all the information necessary for your intended use. You (the user) are responsible for determining whether this material or product is suitable for your particular purpose.