

# SAFETY DATA SHEET



StrataPrep Plasmid Miniprep Kit, Part Number 400763

## Section 1. Identification

### 1.1 Product identifier

**Product name** : StrataPrep Plasmid Miniprep Kit, Part Number 400763  
**Part No. (Chemical Kit)** : 400763  
**Part No.** : Solution 1 400763-13  
                   Solution 2 400763-14  
                   Solution 3 400763-15  
                   Wash Buffer 400763-16  
                   Nuclease Removal Buffer 400763-17

**Validation date** : 5/22/2017

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

**Material uses** : Analytical reagent.  
                   Solution 1 30 ml  
                   Solution 2 30 ml  
                   Solution 3 40 ml  
                   Wash Buffer 125 ml  
                   Nuclease Removal Buffer 200 ml

### 1.3 Details of the supplier of the safety data sheet

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
                                   5301 Stevens Creek Blvd  
                                   Santa Clara, CA 95051, USA  
                                   800-227-9770

### 1.4 Emergency telephone number

**In case of emergency** : CHEMTREC®: 1-800-424-9300

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

<b>OSHA/HCS status</b>	: Solution 1	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	Solution 2	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	Solution 3	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	Wash Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	Nuclease Removal Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

## Section 2. Hazards identification

### Solution 2

H314 SKIN CORROSION - Category 1  
 H318 SERIOUS EYE DAMAGE - Category 1

### Solution 3

H302 ACUTE TOXICITY (oral) - Category 4  
 H312 ACUTE TOXICITY (dermal) - Category 4  
 H332 ACUTE TOXICITY (inhalation) - Category 4  
 H315 SKIN IRRITATION - Category 2  
 H319 EYE IRRITATION - Category 2A

### Nuclease Removal Buffer

H225 FLAMMABLE LIQUIDS - Category 2  
 H302 ACUTE TOXICITY (oral) - Category 4  
 H319 EYE IRRITATION - Category 2A  
 H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
 H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) - Category 2

### Ingredients of unknown toxicity

: Solution 2	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
Solution 3	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
Wash Buffer	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
Nuclease Removal Buffer	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%

### 2.2 GHS label elements

#### Hazard pictograms

: Solution 2	
Solution 3	
Nuclease Removal Buffer	

#### Signal word

: Solution 1	No signal word.
Solution 2	Danger
Solution 3	Warning
Wash Buffer	No signal word.
Nuclease Removal Buffer	Danger

## Section 2. Hazards identification

<b>Hazard statements</b>	: Solution 1 Solution 2 Solution 3	No known significant effects or critical hazards. H314 - Causes severe skin burns and eye damage. H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled. H319 - Causes serious eye irritation. H315 - Causes skin irritation.
	Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. H225 - Highly flammable liquid and vapor. H302 - Harmful if swallowed. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs through prolonged or repeated exposure. (kidneys)
 <b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: Solution 1 Solution 2	Not applicable. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P264 - Wash hands thoroughly after handling.
	Solution 3	P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
	Wash Buffer Nuclease Removal Buffer	Not applicable. P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
<b>Response</b>	: Solution 1 Solution 2	Not applicable. P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 + P363 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.

## Section 2. Hazards identification

Solution 3	<p>P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.</p> <p>P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.</p> <p>P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.</p> <p>P302 + P352 + P312 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse.</p> <p>P332 + P313 - If skin irritation occurs: Get medical attention.</p> <p>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337 + P313 - If eye irritation persists: Get medical attention.</p>
Wash Buffer Nuclease Removal Buffer	<p>Not applicable.</p> <p>P314 - Get medical attention if you feel unwell.</p> <p>P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.</p> <p>P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.</p> <p>P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337 + P313 - If eye irritation persists: Get medical attention.</p>
<b>Storage</b>	<p>: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer</p> <p>Not applicable. P405 - Store locked up. Not applicable. Not applicable. P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.</p>
<b>Disposal</b>	<p>: Solution 1 Solution 2</p> <p>Solution 3</p> <p>Wash Buffer</p> <p>Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable.</p>

## Section 2. Hazards identification

	Nuclease Removal Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: Solution 1	None known.
	Solution 2	None known.
	Solution 3	Do not taste or swallow. Wash thoroughly after handling.
	Wash Buffer	None known.
	Nuclease Removal Buffer	Do not taste or swallow. Wash thoroughly after handling.

### 2.3 Other hazards

<b>Hazards not otherwise classified</b>	: Solution 1	None known.
	Solution 2	None known.
	Solution 3	Causes severe digestive tract burns.
	Wash Buffer	None known.
	Nuclease Removal Buffer	Causes severe digestive tract burns.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Solution 1	Mixture
	Solution 2	Mixture
	Solution 3	Mixture
	Wash Buffer	Mixture
	Nuclease Removal Buffer	Mixture

Ingredient name	%	CAS number
<b>Solution 2</b>		
Sodium dodecyl sulphate	≤3	151-21-3
Sodium hydroxide	≤1	1310-73-2
<b>Solution 3</b>		
Guanidinium thiocyanate	≥25 - ≤50	593-84-0
Acetic acid	≥10 - ≤21	64-19-7
potassium acetate	≤10	127-08-2
<b>Wash Buffer</b>		
Sodium chloride	≤3	7647-14-5
<b>Nuclease Removal Buffer</b>		
Propan-2-ol	≥50 - ≤75	67-63-0
Guanidinium thiocyanate	≥10 - ≤25	593-84-0
Acetic acid	<10	64-19-7
potassium acetate	≤5	127-08-2

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

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	: Solution 1	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.
	Solution 2	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
	Solution 3	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.
	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.
	Nuclease Removal 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.
<b>Inhalation</b>	: Solution 1	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Solution 2	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	Solution 3	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

## Section 4. First aid measures

Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Wash Buffer

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

Nuclease Removal 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.

### Skin contact

: Solution 1

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

Solution 2

Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Solution 3

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Wash Buffer

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

Nuclease Removal Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.



## Section 4. First aid measures

### Ingestion

: Solution 1

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.

Solution 2

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Solution 3

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Wash Buffer

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.

Nuclease Removal Buffer

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person.





## Section 4. First aid measures

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.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. Causes serious eye damage. Causes serious eye irritation. No known significant effects or critical hazards. Causes serious eye irritation.
<b>Inhalation</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. Harmful if inhaled. No known significant effects or critical hazards. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
<b>Skin contact</b>	:  Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. Causes severe burns. Harmful in contact with skin. Causes skin irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	:  Solution 1 Solution 2 Solution 3  Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed. No known significant effects or critical hazards. Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed. Can cause central nervous system (CNS) depression.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	: Solution 1 Solution 2  Solution 3  Wash Buffer Nuclease Removal Buffer	No specific data. Adverse symptoms may include the following: pain watering redness Adverse symptoms may include the following: pain or irritation watering redness No specific data. Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache

## Section 4. First aid measures

		drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	: Solution 1 Solution 2	No specific data. Adverse symptoms may include the following: pain or irritation redness blistering may occur
	Solution 3	Adverse symptoms may include the following: irritation redness
	Wash Buffer Nuclease Removal Buffer	No specific data. No specific data.
<b>Ingestion</b>	: Solution 1 Solution 2	No specific data. Adverse symptoms may include the following: stomach pains
	Solution 3	Adverse symptoms may include the following: stomach pains
	Wash Buffer Nuclease Removal Buffer	No specific data. Adverse symptoms may include the following: stomach pains

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

<b>Notes to physician</b>	: Solution 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Solution 2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Solution 3	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Wash Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Nuclease Removal Buffer	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.
<b>Specific treatments</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: Solution 1	No action shall be taken involving any personal risk or without suitable training.
	Solution 2	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
	Solution 3	No action shall be taken involving any personal risk or without suitable training. If it is suspected that

## Section 4. First aid measures

Wash Buffer

Nuclease Removal Buffer

fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

No action shall be taken involving any personal risk or without suitable training.

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

### 5.1 Extinguishing media

#### Suitable extinguishing media

: Solution 1

Solution 2

Solution 3

Wash Buffer

Nuclease Removal Buffer

Use an extinguishing agent suitable for the surrounding fire.

Use an extinguishing agent suitable for the surrounding fire.

Use an extinguishing agent suitable for the surrounding fire.

Use an extinguishing agent suitable for the surrounding fire.

Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

#### Unsuitable extinguishing media

: Solution 1

Solution 2

Solution 3

Wash Buffer

Nuclease Removal Buffer

None known.

None known.

None known.

None known.

Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

#### Specific hazards arising from the chemical

: Solution 1

Solution 2

Solution 3

Wash Buffer

Nuclease Removal Buffer

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

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

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

Highly 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.

#### Hazardous thermal decomposition products

: Solution 1

Solution 2

Solution 3

No specific data.

Decomposition products may include the following materials:

carbon dioxide

carbon monoxide

sulfur oxides

metal oxide/oxides

Decomposition products may include the following

## Section 5. Fire-fighting measures

materials:  
 carbon dioxide  
 carbon monoxide  
 nitrogen oxides  
 sulfur oxides  
 metal oxide/oxides

Decomposition products may include the following materials:  
 halogenated compounds  
 metal oxide/oxides

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

Wash Buffer

Nuclease Removal Buffer

### 5.3 Advice for firefighters

#### Special protective actions for fire-fighters

: Solution 1

Solution 2

Solution 3

Wash Buffer

Nuclease Removal 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.

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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.

#### Special protective equipment for fire-fighters

: Solution 1

Solution 2

Solution 3

Wash Buffer

Nuclease Removal Buffer

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

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Fire-fighters should wear appropriate protective

## Section 5. Fire-fighting measures

equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### **For non-emergency personnel**

: Solution 1

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

Solution 2

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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Solution 3

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.

Wash Buffer

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

Nuclease Removal Buffer

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

#### **For emergency responders**

: Solution 1

If specialized 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".

Solution 2

If specialized 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".

Solution 3

If specialized 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".

## Section 6. Accidental release measures

Wash Buffer	If specialized 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".
Nuclease Removal Buffer	If specialized 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".

### 6.2 Environmental precautions

: Solution 1	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).
Solution 2	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).
Solution 3	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).
Wash Buffer	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).
Nuclease Removal Buffer	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).

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

<b>Methods for cleaning up</b> : Solution 1	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.
Solution 2	Stop leak if without risk. Move containers from spill area. 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. Dispose of via a licensed waste disposal contractor.
Solution 3	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.
Wash Buffer	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.

## Section 6. Accidental release measures

Nuclease Removal Buffer

disposal container. Dispose of via a licensed waste disposal contractor.

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

#### Protective measures

: Solution 1

Put on appropriate personal protective equipment (see Section 8).

Solution 2

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Solution 3

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.

Wash Buffer

Put on appropriate personal protective equipment (see Section 8).

Nuclease Removal Buffer

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



## Section 7. Handling and storage

<b>Advice on general occupational hygiene</b>	: Solution 1	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. 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. 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. 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. 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.
	Solution 2	
	Solution 3	
	Wash Buffer	
	Nuclease Removal Buffer	
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	: Solution 1	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. 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. Separate from acids. 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. Store in accordance with local regulations. Store in original container protected from direct sunlight in a
	Solution 2	
	Solution 3	

## Section 7. Handling and storage

Wash Buffer

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.

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.

Nuclease Removal 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.

### 7.3 Specific end use(s)

#### Recommendations

: Solution 1	Industrial applications, Professional applications.
Solution 2	Industrial applications, Professional applications.
Solution 3	Industrial applications, Professional applications.
Wash Buffer	Industrial applications, Professional applications.
Nuclease Removal Buffer	Industrial applications, Professional applications.

#### Industrial sector specific solutions

: Solution 1	Not applicable.
Solution 2	Not applicable.
Solution 3	Not applicable.
Wash Buffer	Not applicable.
Nuclease Removal Buffer	Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>Solution 2</b> Sodium dodecyl sulphate Sodium hydroxide	None. <b>ACGIH TLV (United States, 3/2016).</b> C: 2 mg/m <sup>3</sup> <b>OSHA PEL 1989 (United States, 3/1989).</b> CEIL: 2 mg/m <sup>3</sup> <b>NIOSH REL (United States, 10/2013).</b> CEIL: 2 mg/m <sup>3</sup>

## Section 8. Exposure controls/personal protection

### Solution 3

Guanidinium thiocyanate  
Acetic acid

**OSHA PEL (United States, 6/2016).**  
TWA: 2 mg/m<sup>3</sup> 8 hours.

None.

**ACGIH TLV (United States, 3/2016).**

TWA: 10 ppm 8 hours.  
TWA: 25 mg/m<sup>3</sup> 8 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 37 mg/m<sup>3</sup> 15 minutes.

**OSHA PEL 1989 (United States, 3/1989).**

TWA: 10 ppm 8 hours.  
TWA: 25 mg/m<sup>3</sup> 8 hours.

**NIOSH REL (United States, 10/2013).**

TWA: 10 ppm 10 hours.  
TWA: 25 mg/m<sup>3</sup> 10 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 37 mg/m<sup>3</sup> 15 minutes.

**OSHA PEL (United States, 6/2016).**

TWA: 10 ppm 8 hours.  
TWA: 25 mg/m<sup>3</sup> 8 hours.

potassium acetate

None.

### Wash Buffer

Sodium chloride

None.

### Nuclease Removal Buffer

Propan-2-ol

**ACGIH TLV (United States, 3/2016).**

TWA: 200 ppm 8 hours.  
STEL: 400 ppm 15 minutes.

**OSHA PEL 1989 (United States, 3/1989).**

TWA: 400 ppm 8 hours.  
TWA: 980 mg/m<sup>3</sup> 8 hours.  
STEL: 500 ppm 15 minutes.  
STEL: 1225 mg/m<sup>3</sup> 15 minutes.

**NIOSH REL (United States, 10/2013).**

TWA: 400 ppm 10 hours.  
TWA: 980 mg/m<sup>3</sup> 10 hours.  
STEL: 500 ppm 15 minutes.  
STEL: 1225 mg/m<sup>3</sup> 15 minutes.

**OSHA PEL (United States, 6/2016).**

TWA: 400 ppm 8 hours.  
TWA: 980 mg/m<sup>3</sup> 8 hours.

Guanidinium thiocyanate  
Acetic acid

None.

**ACGIH TLV (United States, 3/2016).**

TWA: 10 ppm 8 hours.  
TWA: 25 mg/m<sup>3</sup> 8 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 37 mg/m<sup>3</sup> 15 minutes.

**OSHA PEL 1989 (United States, 3/1989).**

TWA: 10 ppm 8 hours.  
TWA: 25 mg/m<sup>3</sup> 8 hours.

**NIOSH REL (United States, 10/2013).**

TWA: 10 ppm 10 hours.  
TWA: 25 mg/m<sup>3</sup> 10 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 37 mg/m<sup>3</sup> 15 minutes.

## Section 8. Exposure controls/personal protection

potassium acetate

### OSHA PEL (United States, 6/2016).

TWA: 10 ppm 8 hours.

TWA: 25 mg/m<sup>3</sup> 8 hours.

None.

### 8.2 Exposure controls

#### 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

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

#### Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

### 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

#### Other skin protection

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

#### Respiratory protection

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

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: Solution 1	Liquid.
	Solution 2	Liquid.
	Solution 3	Liquid.
	Wash Buffer	Liquid.
	Nuclease Removal Buffer	Liquid.
<b>Color</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Odor</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Odor threshold</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>pH</b>	: Solution 1	7.5
	Solution 2	>12
	Solution 3	4.4
	Wash Buffer	7.5
	Nuclease Removal Buffer	4.4
<b>Melting point</b>	: Solution 1	0°C (32°F)
	Solution 2	0°C (32°F)
	Solution 3	Not available.
	Wash Buffer	0°C (32°F)
	Nuclease Removal Buffer	Not available.
<b>Boiling point</b>	: Solution 1	100°C (212°F)
	Solution 2	100°C (212°F)
	Solution 3	Not available.
	Wash Buffer	100°C (212°F)
	Nuclease Removal Buffer	Not available.
<b>Flash point</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Closed cup: 12 to 23°C (53.6 to 73.4°F)
<b>Evaporation rate</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Flammability (solid, gas)</b>	: Solution 1	Not applicable.
	Solution 2	Not applicable.
	Solution 3	Not applicable.
	Wash Buffer	Not applicable.
	Nuclease Removal Buffer	Not applicable.

## Section 9. Physical and chemical properties

<b>Lower and upper explosive (flammable) limits</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Vapor pressure</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Vapor density</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Relative density</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Solubility</b>	: Solution 1	Easily soluble in the following materials: cold water and hot water.
	Solution 2	Easily soluble in the following materials: cold water and hot water.
	Solution 3	Soluble in the following materials: cold water and hot water.
	Wash Buffer	Easily soluble in the following materials: cold water and hot water.
	Nuclease Removal Buffer	Easily soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Auto-ignition temperature</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Decomposition temperature</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.
<b>Viscosity</b>	: Solution 1	Not available.
	Solution 2	Not available.
	Solution 3	Not available.
	Wash Buffer	Not available.
	Nuclease Removal Buffer	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. 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.
<b>10.4 Conditions to avoid</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No specific data. No specific data. No specific data. No specific data. 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.
<b>10.5 Incompatible materials</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	May react or be incompatible with oxidizing materials. Reactive or incompatible with the following materials: acids May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. Reactive or incompatible with the following materials: oxidizing materials



## Section 10. Stability and reactivity

<b>10.6 Hazardous decomposition products</b>	: Solution 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Solution 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Solution 3	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Wash Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Nuclease Removal Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>Solution 2</b> Sodium dodecyl sulphate	LD50 Dermal LD50 Oral	Rabbit Rat	580 mg/kg 1288 mg/kg	- -
<b>Solution 3</b> Acetic acid	LC50 Inhalation Vapor LD50 Dermal	Rat Rabbit	11000 mg/m <sup>3</sup> 1060 mg/kg	4 hours -
potassium acetate	LD50 Oral	Rat	3310 mg/kg	-
<b>Wash Buffer</b> Sodium chloride	LD50 Oral	Rat	3250 mg/kg	-
<b>Nuclease Removal Buffer</b> Propan-2-ol	LD50 Dermal LD50 Oral	Rabbit Rat	12800 mg/kg 5000 mg/kg	- -
Acetic acid	LC50 Inhalation Vapor LD50 Dermal	Rat Rabbit	11000 mg/m <sup>3</sup> 1060 mg/kg	4 hours -
potassium acetate	LD50 Oral	Rat	3310 mg/kg	-
	LD50 Oral	Rat	3250 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>Solution 2</b> Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 25	-

## Section 11. Toxicological information

Sodium hydroxide	Eyes - Severe irritant	Rabbit	-	milligrams 24 hours 50	-
	Eyes - Severe irritant	Rabbit	-	Micrograms 1 Percent	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes 1 milligrams	-
<b>Solution 3</b> Acetic acid	Skin - Severe irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Severe irritant	Rabbit	-	525 milligrams	-
<b>Wash Buffer</b> Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Nuclease Removal Buffer</b> Propan-2-ol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
Acetic acid	Skin - Severe irritant	Rabbit	-	525 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
<b>Nuclease Removal Buffer</b> Propan-2-ol	-	3	-

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

## Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
<b>Solution 2</b> Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation
<b>Nuclease Removal Buffer</b> Propan-2-ol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
<b>Nuclease Removal Buffer</b> Propan-2-ol	Category 2	Not determined	kidneys

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Solution 1</li> <li>Solution 2</li> <li>Solution 3</li> <li>Wash Buffer</li> <li>Nuclease Removal Buffer</li> </ul>	<p>Not available.</p> <p>Routes of entry anticipated: Oral, Dermal, Inhalation.</p> <p>Routes of entry anticipated: Oral, Dermal, Inhalation.</p> <p>Not available.</p> <p>Routes of entry anticipated: Oral, Dermal, Inhalation.</p>
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### Potential acute health effects

<p><b>Eye contact</b></p> <ul style="list-style-type: none"> <li>: Solution 1</li> <li>Solution 2</li> <li>Solution 3</li> <li>Wash Buffer</li> <li>Nuclease Removal Buffer</li> </ul>	<p>No known significant effects or critical hazards. Causes serious eye damage.</p> <p>Causes serious eye irritation.</p> <p>No known significant effects or critical hazards. Causes serious eye irritation.</p>
<p><b>Inhalation</b></p> <ul style="list-style-type: none"> <li>: Solution 1</li> <li>Solution 2</li> <li>Solution 3</li> <li>Wash Buffer</li> <li>Nuclease Removal Buffer</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards. Harmful if inhaled.</p> <p>No known significant effects or critical hazards. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.</p>
<p><b>Skin contact</b></p> <ul style="list-style-type: none"> <li>: <input checked="" type="checkbox"/> Solution 1</li> <li>Solution 2</li> <li>Solution 3</li> <li>Wash Buffer</li> <li>Nuclease Removal Buffer</li> </ul>	<p>No known significant effects or critical hazards. Causes severe burns.</p> <p>Harmful in contact with skin. Causes skin irritation.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>
<p><b>Ingestion</b></p> <ul style="list-style-type: none"> <li>: <input checked="" type="checkbox"/> Solution 1</li> <li>Solution 2</li> <li>Solution 3</li> <li>Wash Buffer</li> <li>Nuclease Removal Buffer</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards. Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.</p> <p>No known significant effects or critical hazards. Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed. Can cause central nervous system (CNS) depression.</p>

## Section 11. Toxicological information

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

<b>Eye contact</b>	: Solution 1	No specific data.
	Solution 2	Adverse symptoms may include the following: pain watering redness
	Solution 3	Adverse symptoms may include the following: pain or irritation watering redness
	Wash Buffer Nuclease Removal Buffer	No specific data. Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Solution 1	No specific data.
	Solution 2	No specific data.
	Solution 3	No specific data.
	Wash Buffer	No specific data.
	Nuclease Removal Buffer	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	: Solution 1	No specific data.
	Solution 2	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	Solution 3	Adverse symptoms may include the following: irritation redness
	Wash Buffer Nuclease Removal Buffer	No specific data. No specific data.
<b>Ingestion</b>	: Solution 1	No specific data.
	Solution 2	Adverse symptoms may include the following: stomach pains
	Solution 3	Adverse symptoms may include the following: stomach pains
	Wash Buffer Nuclease Removal Buffer	No specific data. Adverse symptoms may include the following: stomach pains

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

## Section 11. Toxicological information

<b>General</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May cause damage to organs through prolonged or repeated exposure.
<b>Carcinogenicity</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Developmental effects</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Fertility effects</b>	: Solution 1 Solution 2 Solution 3 Wash Buffer Nuclease Removal Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
<b>Solution 2</b>	
Oral	128800 mg/kg
Dermal	58000 mg/kg
<b>Solution 3</b>	
Oral	995.1 mg/kg
Dermal	1857 mg/kg
Inhalation (vapors)	95.65 mg/l
Inhalation (dusts and mists)	3.171 mg/l
<b>Wash Buffer</b>	
Oral	258620.7 mg/kg
<b>Nuclease Removal Buffer</b>	
Oral	1662.9 mg/kg
Dermal	3720.4 mg/kg
Inhalation (vapors)	191.3 mg/l
Inhalation (dusts and mists)	6.356 mg/l

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>Solution 2</b>			
Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water Acute LC50 900 µg/l Marine water	Algae - Skeletonema costatum Crustaceans - Artemia salina - Adult	96 hours 48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours
	Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days
	Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Sodium hydroxide	Chronic NOEC >1357 µg/l Fresh water Acute EC50 40.38 mg/l Fresh water	Fish - Pimephales promelas Crustaceans - Ceriodaphnia dubia - Neonate	42 days 48 hours
	Acute LC50 125 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
<b>Solution 3</b>			
Acetic acid	Acute EC50 73400 µg/l Fresh water Acute EC50 65000 µg/l Fresh water	Algae - Navicula seminulum Daphnia - Daphnia magna - Neonate	96 hours 48 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
potassium acetate	Acute LC50 75000 µg/l Fresh water Acute EC50 1.05 g/L Fresh water	Fish - Lepomis macrochirus Daphnia - Daphnia similis - Neonate	96 hours 48 hours
	Acute LC50 313 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 298 mg/l Fresh water	Fish - Pimephales promelas	96 hours
<b>Wash Buffer</b>			
Sodium chloride	Acute EC50 2430000 µg/l Fresh water Acute EC50 28.85 mg/dm3 Fresh water	Algae - Navicula seminulum Algae - Pseudokirchneriella subcapitata	96 hours 72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
<b>Nuclease Removal Buffer</b>			
Propan-2-ol	Acute EC50 929 mg/l Fresh water Acute LC50 1400000 to 1950000 µg/l Marine water	Daphnia - Daphnia magna Crustaceans - Crangon crangon	48 hours 48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
Acetic acid	Acute EC50 73400 µg/l Fresh water Acute EC50 65000 µg/l Fresh water	Algae - Navicula seminulum Daphnia - Daphnia magna - Neonate	96 hours 48 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
potassium acetate	Acute LC50 75000 µg/l Fresh water Acute EC50 1.05 g/L Fresh water	Fish - Lepomis macrochirus Daphnia - Daphnia similis -	96 hours 48 hours

## Section 12. Ecological information

	Acute LC50 313 mg/l Fresh water	Neonate Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 298 mg/l Fresh water	Fish - Pimephales promelas	96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>Solution 2</b> Sodium dodecyl sulphate Sodium hydroxide	- -	- -	Readily Readily
<b>Solution 3</b> Acetic acid	-	-	Readily
<b>Nuclease Removal Buffer</b> Acetic acid	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Solution 2</b> Sodium dodecyl sulphate	-2.03	-	low
<b>Solution 3</b> Acetic acid potassium acetate	-0.17 -3.72	3.16 3.162	low low
<b>Nuclease Removal Buffer</b> Propan-2-ol Acetic acid potassium acetate	0.05 -0.17 -3.72	- 3.16 3.162	low low low

### 12.4 Mobility in soil

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

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

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact



## Section 13. Disposal considerations



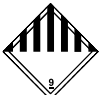


with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3316	UN3316	UN3316	UN3316	UN3316
UN proper shipping name	<input checked="" type="checkbox"/> Chemical kits	<input checked="" type="checkbox"/> CHEMICAL KIT	EQUIPO QUIMICO	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9 	9 	9 	9 
Packing group	II	II	II	II	II
Environmental hazards	<input checked="" type="checkbox"/> No.	<input checked="" type="checkbox"/> No.	<input checked="" type="checkbox"/> No.	No.	No.

### Additional information

**DOT Classification** : Limited quantity  
Yes.

**Packaging instruction**  
**Passenger aircraft**  
Quantity limitation: 10 kg

**Cargo aircraft**  
Quantity limitation: 10 kg

**Special provisions**  
15

**TDG Classification** :  Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).

**Passenger Carrying Road or Rail Index**  
10

**Special provisions**  
65, 141

**Mexico Classification** : Special provisions  
251, 340

## Section 14. Transport information

- IMDG** : **Emergency schedules (EmS)**  
F-A, \_S-P\_  
  
**Special provisions**  
251, 340
- IATA** : **Passenger and Cargo Aircraft** Quantity limitation: 10 kg  
Packaging instructions: 960  
**Cargo Aircraft Only** Quantity limitation: 10 kg  
Packaging instructions: 960  
**Limited Quantities - Passenger Aircraft** Quantity limitation: 1 kg  
Packaging instructions: Y960  
  
**Special provisions**  
A44, A163

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

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

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

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

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** :  **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

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
<b>Solution 3</b> Hydrochloric acid	≤0.1	Yes.	500	-	5000	-
<b>Nuclease Removal Buffer</b> Hydrochloric acid	≤0.1	Yes.	500	-	5000	-

**SARA 304 RQ** :  38888888888890 lbs / 63055555555556 kg

## Section 15. Regulatory information

### SARA 311/312

Classification :

### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<b>Solution 2</b>						
Sodium dodecyl sulphate	≤3	Yes.	No.	No.	Yes.	No.
Sodium hydroxide	≤1	No.	No.	No.	Yes.	No.
<b>Solution 3</b>						
Guanidinium thiocyanate	≥25 - ≤50	No.	No.	No.	Yes.	No.
Acetic acid	≥10 - ≤21	Yes.	No.	No.	Yes.	No.
potassium acetate	≤10	Yes.	No.	No.	Yes.	No.
<b>Wash Buffer</b>						
Sodium chloride	≤3	No.	No.	No.	Yes.	No.
<b>Nuclease Removal Buffer</b>						
Propan-2-ol	≥50 - ≤75	Yes.	No.	No.	Yes.	Yes.
Guanidinium thiocyanate	≥10 - ≤25	No.	No.	No.	Yes.	No.
Acetic acid	<10	Yes.	No.	No.	Yes.	No.
potassium acetate	≤5	Yes.	No.	No.	Yes.	No.

### State regulations

#### Massachusetts

: The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL; ACETIC ACID; ACETIC ACID GLACIAL

#### New York

: The following components are listed: Acetic acid

#### New Jersey

: The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL; ACETIC ACID; ETHANOIC ACID

#### Pennsylvania

: The following components are listed: ISOPROPYL ALCOHOL MANUFACTURE (STRONG-ACID PROCESS); ACETIC ACID; ACETIC ACID, WATER SOLUTIONS

#### California Prop. 65

Not available.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

#### Australia

: Not determined.

#### Canada

: All components are listed or exempted.

## Section 15. Regulatory information

<b>China</b>	: All components are listed or exempted.
<b>Europe</b>	: All components are listed or exempted.
<b>Japan</b>	: <input checked="" type="checkbox"/> <b>Japan inventory (ENCS)</b> : All components are listed or exempted. <b>Japan inventory (ISHL)</b> : Not determined.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: <input checked="" type="checkbox"/> Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

## Section 16. Other information

### History

<b>Date of issue</b>	: 05/22/2017
<b>Date of previous issue</b>	: 09/08/2015.
<b>Version</b>	: 5

Indicates information that has changed from previously issued version.

### Notice to reader

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