Conforms to HPR 2015

SAFETY DATA SHEET

Agilent Technologies

StrataPrep Plasmid Miniprep Kit, Part Number 400763

Section 1. Identification

Product identifier : 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

Material uses : Analytical reagent.

Solution 1	5 x 6 ml
Solution 2	5 x 6 ml
Solution 3	9 x 5 ml
Wash Buffer	25 x 5 ml
Nuclease Removal Buffer	5 x 40 ml

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

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

Solution 2

H314	SKIN CORROSION - Category 1
H318	SERIOUS EYE DAMAGE - Category 1
	Health Hazards Not Otherwise Classified - Category 1

Solution 3

H302	ACUTE TOXICITY (oral) - Category 4
H312	ACUTE TOXICITY (dermal) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4
H314	SKIN CORROSION - Category 1C
H318	SERIOUS EYE DAMAGE - Category 1
	Health Hazards Not Otherwise Classified - Category 1
H412	AQUATIC HAZARD (LONG-TERM) - Category 3

Nuclease Removal Buffer

H225	FLAMMABLE LIQUIDS - Category 2
H302	ACUTE TOXICITY (oral) - Category 4
H314	SKIN CORROSION - Category 1C
H318	SERIOUS EYE DAMAGE - Category 1
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
	Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Section 2. Hazard identification

Hazard pictograms :

Solution 2

Solution 3

Nuclease Removal Buffer

Signal word :

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

Hazard statements :

Solution 1	No known significant effects or critical hazards.
Solution 2	H314 - Causes severe skin burns and eye damage. Causes respiratory tract burns. Causes digestive tract burns.
Solution 3	H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects. Causes respiratory tract burns. Causes digestive tract burns.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	H225 - Highly flammable liquid and vapor. H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H336 - May cause drowsiness or dizziness. Causes respiratory tract burns. Causes digestive tract burns.

Precautionary statements

Prevention :

Solution 1	Not applicable.
Solution 2	P280 - Wear protective gloves, protective clothing and eye or face protection.
Solution 3	P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling.
Wash Buffer	Not applicable.
Nuclease Removal Buffer	P280 - Wear protective gloves, protective clothing and eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling.

Section 2. Hazard identification

Response	:	Solution 1	Not applicable.
		Solution 2	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. P363 - Wash contaminated clothing before reuse. 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 doctor.
		Solution 3	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. P363 - Wash contaminated clothing before reuse. P302 + P312 - IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. 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 doctor.
		Wash Buffer	Not applicable.
		Nuclease Removal Buffer	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. P363 - Wash contaminated clothing before reuse. 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 doctor.
Storage	:	Solution 1	Not applicable.
		Solution 2	Not applicable.
		Solution 3	Not applicable.
		Wash Buffer	Not applicable.
		Nuclease Removal Buffer	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Section 2. Hazard identification

Disposal :

Solution 1	Not applicable.
Solution 2	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Solution 3	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Wash Buffer	Not applicable.
Nuclease Removal Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements :

Solution 1	None known.
Solution 2	Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.
Solution 3	Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.
Wash Buffer	None known.
Nuclease Removal Buffer	Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.
Solution 3	Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%

Other hazards which do not result in classification :

Solution 1	None known.
Solution 2	None known.
Solution 3	None known.
Wash Buffer	None known.
Nuclease Removal Buffer	None known.

Section 3. Composition/information on ingredients

Substance/mixture :

Solution 1	Mixture
Solution 2	Mixture
Solution 3	Mixture
Wash Buffer	Mixture
Nuclease Removal Buffer	Mixture

Ingredient name	% (w/w)	CAS number
Solution 2		
Sodium dodecyl sulphate	0.1 - 1	151-21-3
Sodium hydroxide	0.1 - 1	1310-73-2
Solution 3		
Guanidinium thiocyanate	30 - 60	593-84-0
Acetic acid	7 - 13	64-19-7
Wash Buffer		
Sodium chloride	0.5 - 1.5	7647-14-5
Nuclease Removal Buffer		
Propan-2-ol	30 - 60	67-63-0
Guanidinium thiocyanate	10 - 30	593-84-0
Acetic acid	3 - 7	64-19-7

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

Section 3. Composition/information on ingredients

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact :

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	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.
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	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.

Inhalation :

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	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

Section 4. First-aid measures

			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. 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	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. 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. Wash skin thoroughly with soap and water or use recognized skin cleanser. 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	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a 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	Get medical attention immediately. Call a poison center or physician. Wash skin thoroughly with soap and water or use recognized skin cleanser. 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.

Section 4. First-aid measures

Ingestion	:	Solution 1	Wash out mouth with water. 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. 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	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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.
		Wash Buffer	Wash out mouth with water. 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	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First-aid measures

Eye contact :

Solution 1	No known significant effects or critical hazards.
Solution 2	Causes serious eye damage.
Solution 3	Causes serious eye damage.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	Causes serious eye damage.

Inhalation :

Solution 1	No known significant effects or critical hazards.
Solution 2	Corrosive to the respiratory system.
Solution 3	Harmful if inhaled. Corrosive to the respiratory system.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. Corrosive to the respiratory system.

Skin contact :

Solution 1	No known significant effects or critical hazards.
Solution 2	Causes severe burns. Defatting to the skin.
Solution 3	Causes severe burns. Harmful in contact with skin.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	Causes severe burns. Defatting to the skin.

Ingestion :

Solution 1	No known significant effects or critical hazards.
Solution 2	May cause burns to mouth, throat and stomach. Corrosive to the digestive tract. Causes burns.
Solution 3	May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact :

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 watering redness
Wash Buffer	No specific data.
Nuclease Removal Buffer	Adverse symptoms may include the following: pain watering redness

Inhalation :

Solution 1	No specific data.
Solution 2	Adverse symptoms may include the following: respiratory tract irritation coughing
Solution 3	Adverse symptoms may include the following: respiratory tract irritation coughing
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

Section 4. First-aid measures

unconsciousness

Skin contact :

Solution 1	No specific data.
Solution 2	Adverse symptoms may include the following: pain or irritation redness dryness cracking blistering may occur
Solution 3	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Wash Buffer	No specific data.
Nuclease Removal Buffer	Adverse symptoms may include the following: pain or irritation redness dryness cracking blistering may occur

Ingestion :

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	No specific data.
Nuclease Removal Buffer	Adverse symptoms may include the following: stomach pains

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

Notes to physician :

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.

Specific treatments :

Solution 1	No specific treatment.
Solution 2	No specific treatment.
Solution 3	No specific treatment.
Wash Buffer	No specific treatment.
Nuclease Removal Buffer	No specific treatment.

Protection of first-aiders :

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

Section 4. First-aid measures

	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 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.
Wash Buffer	No action shall be taken involving any personal risk or without suitable training.
Nuclease Removal Buffer	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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media :	Solution 1	Use an extinguishing agent suitable for the surrounding fire.
	Solution 2	Use an extinguishing agent suitable for the surrounding fire.
	Solution 3	Use an extinguishing agent suitable for the surrounding fire.
	Wash Buffer	Use an extinguishing agent suitable for the surrounding fire.
	Nuclease Removal Buffer	Use dry chemical, CO_2, water spray (fog) or foam.
Unsuitable extinguishing media :	Solution 1	None known.
	Solution 2	None known.
	Solution 3	None known.
	Wash Buffer	None known.
	Nuclease Removal Buffer	Do not use water jet.
Specific hazards arising from the chemical :	Solution 1	In a fire or if heated, a pressure increase will occur and the container may burst.
	Solution 2	In a fire or if heated, a pressure increase will occur and the container may burst.
	Solution 3	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Nuclease Removal Buffer	Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products	:	Solution 1	No specific data.
		Solution 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides metal oxide/oxides
		Solution 3	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
		Wash Buffer	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides
		Nuclease Removal Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
Special protective actions for fire-fighters	:	Solution 1	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.
		Solution 2	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.
		Solution 3	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.
		Wash Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
		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. 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	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		Solution 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		Solution 3	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive

Section 5. Fire-fighting measures

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

Section 6. Accidental release measures

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. Do not breathe 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. Do not breathe 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

Section 6. Accidental release measures

		spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	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".
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). Water polluting material. May be harmful to the environment if released in large quantities.
	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).

Methods and materials for containment and cleaning up

Methods for cleaning up :	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

Section 6. Accidental release measures

	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.
Nuclease Removal Buffer	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

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. 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. 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 get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Wash Buffer	Put on appropriate personal protective equipment (see Section 8).
Nuclease Removal Buffer	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. 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

Advice on general occupational hygiene	:	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.
		Solution 2	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 3	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		Wash Buffer	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.
		Nuclease Removal Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	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. See Section 10 for incompatible materials before handling or use.
		Solution 2	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. See Section 10 for incompatible materials before handling or use.
		Solution 3	Store in accordance with local regulations. Store in

Section 7. Handling and storage

	original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Wash Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Solution 2 Sodium hydroxide	**CA Alberta Provincial (Canada, 6/2018).** C: 2 mg/m³ **CA British Columbia Provincial (Canada, 1/2021).** C: 2 mg/m³ **CA Ontario Provincial (Canada, 6/2019).** Ceiling Limit: 2 mg/m³ **CA Quebec Provincial (Canada, 7/2019).** STEV: 2 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** CEIL: 2 mg/m³
Solution 3 Acetic acid	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 10 ppm 8 hours.

Section 8. Exposure controls/personal protection

	8 hrs OEL: 25 mg/m³ 8 hours. 15 min OEL: 37 mg/m³ 15 minutes. 15 min OEL: 15 ppm 15 minutes. **CA British Columbia Provincial (Canada, 1/2021).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 10 ppm 8 hours. TWAEV: 25 mg/m³ 8 hours. STEV: 15 ppm 15 minutes. STEV: 37 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 15 ppm 15 minutes. TWA: 10 ppm 8 hours.
Nuclease Removal Buffer	
Propan-2-ol	**CA Alberta Provincial (Canada, 6/2018).** 15 min OEL: 984 mg/m³ 15 minutes. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 400 ppm 15 minutes. 8 hrs OEL: 492 mg/m³ 8 hours. **CA British Columbia Provincial (Canada, 1/2021).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 400 ppm 8 hours. TWAEV: 983 mg/m³ 8 hours. STEV: 500 ppm 15 minutes. STEV: 1230 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.
Acetic acid	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 10 ppm 8 hours. 8 hrs OEL: 25 mg/m³ 8 hours. 15 min OEL: 37 mg/m³ 15 minutes. 15 min OEL: 15 ppm 15 minutes. **CA British Columbia Provincial (Canada, 1/2021).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **CA Ontario Provincial (Canada, 6/2019).** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 10 ppm 8 hours. TWAEV: 25 mg/m³ 8 hours. STEV: 15 ppm 15 minutes.

Section 8. Exposure controls/personal protection

	STEV: 37 mg/m³ 15 minutes. **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 15 ppm 15 minutes. TWA: 10 ppm 8 hours.

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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state :

Solution 1	Liquid.
Solution 2	Liquid.
Solution 3	Liquid.
Wash Buffer	Liquid.
Nuclease Removal Buffer	Liquid.

Color :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

Odor :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

Odor threshold :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

pH :

Solution 1	7.5
Solution 2	>12
Solution 3	4.4
Wash Buffer	7.5
Nuclease Removal Buffer	4.4

Melting point/freezing point :

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.

Boiling point, initial boiling point, and boiling range :

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.

Flash point :

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)

	Closed cup			Open cup		
Ingredient name	**°C**	**°F**	**Method**	**°C**	**°F**	**Method**
Solution 1						
Edetic acid	>100	>212	DIN 51758			
Solution 3						
Acetic acid	39	102.2				
Wash Buffer						

Section 9. Physical and chemical properties and safety characteristics

	Edetic acid	>100	>212	DIN 51758			

Evaporation rate :
Solution 1 — Not available.
Solution 2 — Not available.
Solution 3 — Not available.
Wash Buffer — Not available.
Nuclease Removal Buffer — Not available.

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

Lower and upper explosion limit/flammability limit :
Solution 1 — Not available.
Solution 2 — Not available.
Solution 3 — Not available.
Wash Buffer — Not available.
Nuclease Removal Buffer — Not available.

Vapor pressure :
Solution 1 — Not available.
Solution 2 — Not available.
Solution 3 — Not available.
Wash Buffer — Not available.
Nuclease Removal Buffer — Not available.

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Solution 1						
Water	23.8	3.2				
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	0	0		0.000007501	0.000001	
Solution 2						
Water	23.8	3.2				
Sodium dodecyl sulphate	≤0.0013501	≤0.00018				
Solution 3						
Water	23.8	3.2				
Acetic acid	15.59	2.1				
Wash Buffer						
Water	23.8	3.2				
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	0	0		0.000007501	0.000001	
Nuclease Removal Buffer						
Propan-2-ol	33	4.4		177	23.6	
Water	23.8	3.2				

Section 9. Physical and chemical properties and safety characteristics

Relative vapor density :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

Relative density :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

Solubility :

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.

Partition coefficient: n-octanol/water :

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

Auto-ignition temperature :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

Ingredient name	°C	°F	Method
Solution 1			
Edetic acid	>400	>752	VDI 2263
Solution 2			
Sodium dodecyl sulphate	310.5	590.9	VDI 2263
Solution 3			
potassium acetate	>410	>770	EU A.16
Acetic acid	463	865.4	
Wash Buffer			
Edetic acid	>400	>752	VDI 2263
Nuclease Removal Buffer			
potassium acetate	>410	>770	EU A.16
Propan-2-ol	456	852.8	

Section 9. Physical and chemical properties and safety characteristics

Decomposition temperature	:	Solution 1	Not available.
		Solution 2	Not available.
		Solution 3	Not available.
		Wash Buffer	Not available.
		Nuclease Removal Buffer	Not available.
Viscosity	:	Solution 1	Not available.
		Solution 2	Not available.
		Solution 3	Not available.
		Wash Buffer	Not available.
		Nuclease Removal Buffer	Not available.
Particle characteristics			
Median particle size	:	Solution 1	Not applicable.
		Solution 2	Not applicable.
		Solution 3	Not applicable.
		Wash Buffer	Not applicable.
		Nuclease Removal Buffer	Not applicable.

Section 10. Stability and reactivity

Reactivity	:	Solution 1	No specific test data related to reactivity available for this product or its ingredients.
		Solution 2	No specific test data related to reactivity available for this product or its ingredients.
		Solution 3	No specific test data related to reactivity available for this product or its ingredients.
		Wash Buffer	No specific test data related to reactivity available for this product or its ingredients.
		Nuclease Removal Buffer	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	Solution 1	The product is stable.
		Solution 2	The product is stable.
		Solution 3	The product is stable.
		Wash Buffer	The product is stable.
		Nuclease Removal Buffer	The product is stable.
Possibility of hazardous reactions	:	Solution 1	Under normal conditions of storage and use, hazardous reactions will not occur.
		Solution 2	Under normal conditions of storage and use, hazardous reactions will not occur.
		Solution 3	Under normal conditions of storage and use, hazardous reactions will not occur.
		Wash Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
		Nuclease Removal Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Solution 1	No specific data.
		Solution 2	No specific data.
		Solution 3	No specific data.
		Wash Buffer	No specific data.
		Nuclease Removal Buffer	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.

Section 10. Stability and reactivity

Incompatible materials :

Solution 1	May react or be incompatible with oxidizing materials.
Solution 2	Reactive or incompatible with the following materials: acids
Solution 3	May react or be incompatible with oxidizing materials.
Wash Buffer	May react or be incompatible with oxidizing materials.
Nuclease Removal Buffer	Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition products :

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

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Solution 2				
Sodium dodecyl sulphate	LD50 Oral	Rat	1288 mg/kg	-
Solution 3				
Acetic acid	LC50 Inhalation Vapor	Rat	11000 mg/m³	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-
Wash Buffer				
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
Nuclease Removal Buffer				
Propan-2-ol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Acetic acid	LC50 Inhalation Vapor	Rat	11000 mg/m³	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Solution 2					
Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 ug	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 mg	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 mg	-

Section 11. Toxicological information

	Skin - Mild irritant	Rabbit	-	24 hours 50 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 25 mg	-
Sodium hydroxide	Eyes - Severe irritant	Rabbit	-	24 hours 50 ug	-
	Eyes - Severe irritant	Rabbit	-	1 %	-
	Eyes - Severe irritant	Rabbit	-	0.5 minutes 1 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 mg	-
Solution 3					
Acetic acid	Skin - Severe irritant	Rabbit	-	525 mg	-
Wash Buffer					
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Nuclease Removal Buffer					
Propan-2-ol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
Acetic acid	Skin - Severe irritant	Rabbit	-	525 mg	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	IARC	NTP	ACGIH
Nuclease Removal Buffer			
Propan-2-ol	3	-	A4

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Solution 2			
Sodium dodecyl sulphate	Category 3	-	Respiratory tract irritation
Sodium hydroxide	Category 3	-	Respiratory tract irritation
Nuclease Removal Buffer			
Propan-2-ol	Category 3	-	Narcotic effects

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	:	Solution 1	Not available.
		Solution 2	Routes of entry anticipated: Oral, Dermal, Inhalation.
		Solution 3	Routes of entry anticipated: Oral, Dermal, Inhalation.
		Wash Buffer	Not available.
		Nuclease Removal Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact	:	Solution 1	No known significant effects or critical hazards.
		Solution 2	Causes serious eye damage.
		Solution 3	Causes serious eye damage.
		Wash Buffer	No known significant effects or critical hazards.
		Nuclease Removal Buffer	Causes serious eye damage.
Inhalation	:	Solution 1	No known significant effects or critical hazards.
		Solution 2	Corrosive to the respiratory system.
		Solution 3	Harmful if inhaled. Corrosive to the respiratory system.
		Wash Buffer	No known significant effects or critical hazards.
		Nuclease Removal Buffer	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. Corrosive to the respiratory system.
Skin contact	:	Solution 1	No known significant effects or critical hazards.
		Solution 2	Causes severe burns. Defatting to the skin.
		Solution 3	Causes severe burns. Harmful in contact with skin.
		Wash Buffer	No known significant effects or critical hazards.
		Nuclease Removal Buffer	Causes severe burns. Defatting to the skin.
Ingestion	:	Solution 1	No known significant effects or critical hazards.
		Solution 2	May cause burns to mouth, throat and stomach. Corrosive to the digestive tract. Causes burns.
		Solution 3	May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
		Wash Buffer	No known significant effects or critical hazards.
		Nuclease Removal Buffer	May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	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 watering redness
		Wash Buffer	No specific data.
		Nuclease Removal Buffer	Adverse symptoms may include the following: pain watering redness

Section 11. Toxicological information

Inhalation :

Solution 1	No specific data.
Solution 2	Adverse symptoms may include the following: respiratory tract irritation coughing
Solution 3	Adverse symptoms may include the following: respiratory tract irritation coughing
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

Skin contact :

Solution 1	No specific data.
Solution 2	Adverse symptoms may include the following: pain or irritation redness dryness cracking blistering may occur
Solution 3	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Wash Buffer	No specific data.
Nuclease Removal Buffer	Adverse symptoms may include the following: pain or irritation redness dryness cracking blistering may occur

Ingestion :

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	No specific data.
Nuclease Removal Buffer	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

General :

Solution 1	No known significant effects or critical hazards.
Solution 2	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Solution 3	No known significant effects or critical hazards.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity :

Solution 1	No known significant effects or critical hazards.
Solution 2	No known significant effects or critical hazards.
Solution 3	No known significant effects or critical hazards.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	No known significant effects or critical hazards.

Mutagenicity :

Solution 1	No known significant effects or critical hazards.
Solution 2	No known significant effects or critical hazards.
Solution 3	No known significant effects or critical hazards.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	No known significant effects or critical hazards.

Reproductive toxicity :

Solution 1	No known significant effects or critical hazards.
Solution 2	No known significant effects or critical hazards.
Solution 3	No known significant effects or critical hazards.
Wash Buffer	No known significant effects or critical hazards.
Nuclease Removal Buffer	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Solution 2					
Solution 2	128800	N/A	N/A	N/A	150
Sodium dodecyl sulphate	1288	N/A	N/A	N/A	1.5
Solution 3					
Solution 3	995.1	1857	N/A	95.7	3.2
Guanidinium thiocyanate	500	1100	N/A	N/A	1.5
Acetic acid	3310	1060	N/A	11	N/A
Wash Buffer					
Wash Buffer	258620.7	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
Nuclease Removal Buffer					
Nuclease Removal Buffer	1662.9	3720.4	N/A	191.3	6.4
Propan-2-ol	5000	12800	N/A	72.2	N/A
Guanidinium thiocyanate	500	1100	N/A	N/A	1.5
Acetic acid	3310	1060	N/A	11	N/A

Other information :

Solution 1	Not available.
Solution 2	Not available.
Solution 3	Not available.
Wash Buffer	Not available.
Nuclease Removal Buffer	Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Solution 2			
Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	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
	Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days
Sodium hydroxide	Acute LC50 125 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
Solution 3			
Acetic acid	Acute EC50 73400 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 75000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Wash Buffer			
Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 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 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
Nuclease Removal Buffer			
Propan-2-ol	Acute EC50 7550 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
Acetic acid	Acute EC50 73400 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 75000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
Solution 2 Sodium dodecyl sulphate	OECD 301B Ready Biodegradability - CO_2 Evolution Test	95 % - Readily - 28 days	20 mg/l	Activated sludge

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Solution 2			
Sodium dodecyl sulphate	-	-	Readily
Sodium hydroxide	-	-	Readily
Solution 3			
Guanidinium thiocyanate	-	-	Inherent
Acetic acid	-	-	Readily
Nuclease Removal Buffer			
Propan-2-ol	-	-	Readily
Guanidinium thiocyanate	-	-	Inherent
Acetic acid	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Solution 2			
Sodium dodecyl sulphate	-2.03	-	low
Solution 3			
Acetic acid	-0.17	3.16	low
Nuclease Removal Buffer			
Propan-2-ol	0.05	-	low
Acetic acid	-0.17	3.16	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. 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 with soil,

Section 13. Disposal considerations

waterways, drains and sewers.

Section 14. Transport information

	TDG Classification	IMDG	IATA
UN number	UN3316	UN3316	UN3316
UN proper shipping name	CHEMICAL KIT	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9 	9 
Packing group	II	II	II
Environmental hazards	No.	No.	No.

Proof of classification statement : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).

Additional information

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

IMDG : **Emergency schedules** F-A, _S-P_
Special provisions 251, 340

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 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 IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: isopropyl alcohol

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Section 15. Regulatory information

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.
China	:	All components are listed or exempted.
Europe	:	All components are listed or exempted.
Japan	:	**Japan inventory (CSCL)**: Not determined. **Japan inventory (ISHL)**: All components are listed or exempted.
New Zealand	:	All components are listed or exempted.
Philippines	:	Not determined.
Republic of Korea	:	Not determined.
Taiwan	:	All components are listed or exempted.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	All components are active or exempted.
Viet Nam	:	Not determined.

Section 16. Other information

History

Date of issue/Date of revision	:	11/26/2021
Date of previous issue	:	06/21/2019
Version	:	7
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals HPR = Hazardous Products Regulations IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations

Procedure used to derive the classification

Classification	Justification
Solution 2	
SKIN CORROSION - Category 1	On basis of test data
SERIOUS EYE DAMAGE - Category 1	On basis of test data
Health Hazards Not Otherwise Classified - Category 1	On basis of test data
Solution 3	
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (dermal) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method

Section 16. Other information

SKIN CORROSION - Category 1C	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
Health Hazards Not Otherwise Classified - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method
Nuclease Removal Buffer	
FLAMMABLE LIQUIDS - Category 2	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION - Category 1C	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
Health Hazards Not Otherwise Classified - Category 1	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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