Conforms to HPR 2015

SAFETY DATA SHEET

Agilent Technologies

Total RNA Isolation Mini Kit, Part Number 5185-6000

Section 1. Identification

Product identifier : Total RNA Isolation Mini Kit, Part Number 5185-6000

Part no. (chemical kit) : 5185-6000

Part no. :

Nuclease-Free Water	5190-0432
Lysis Solution	5190-0434
Wash Solution	5190-0433

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

Identified uses : Analytical chemistry.

Nuclease-Free Water	25 ml
Lysis Solution	50 ml
Wash Solution	12 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

Lysis Solution

H302	ACUTE TOXICITY (oral) - Category 4
H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms : Lysis Solution

Signal word :

Nuclease-Free Water	No signal word.
Lysis Solution	Warning
Wash Solution	No signal word.

Hazard statements :

Nuclease-Free Water	No known significant effects or critical hazards.
Lysis Solution	H302 - Harmful if swallowed. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation.
Wash Solution	No known significant effects or critical hazards.

Precautionary statements

Section 2. Hazard identification

Prevention	:	Nuclease-Free Water	Not applicable.
		Lysis Solution	P280 - Wear protective gloves. Wear eye or face protection. P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling.
		Wash Solution	Not applicable.
Response	:	Nuclease-Free Water	Not applicable.
		Lysis Solution	P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P362 + P364 - Take off contaminated clothing and wash it before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
		Wash Solution	Not applicable.
Storage	:	Nuclease-Free Water	Not applicable.
		Lysis Solution	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
		Wash Solution	Not applicable.
Disposal	:	Nuclease-Free Water	Not applicable.
		Lysis Solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		Wash Solution	Not applicable.
Supplemental label elements	:	Nuclease-Free Water	None known.
		Lysis Solution	None known.
		Wash Solution	None known.
		Lysis Solution	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 47.3%
Other hazards which do not result in classification	:	Nuclease-Free Water	None known.
		Lysis Solution	None known.
		Wash Solution	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	Nuclease-Free Water	Substance
		Lysis Solution	Mixture
		Wash Solution	Mixture

Ingredient name	Synonyms	% (w/w)	CAS number
Nuclease-Free Water			
water	Water	100	7732-18-5
Lysis Solution			
Guanidinium chloride	Guanidine hydrochloride	≥30 - ≤60	50-01-1

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

Section 3. Composition/information on ingredients

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

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact	:	Nuclease-Free Water	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.
		Lysis Solution	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 Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	:	Nuclease-Free Water	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		Lysis Solution	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.
		Wash Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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	:	Nuclease-Free Water	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Lysis Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		Wash Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Section 4. First-aid measures

Ingestion	:	Nuclease-Free Water	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.
		Lysis Solution	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. 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 Solution	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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	Causes serious eye irritation.
		Wash Solution	No known significant effects or critical hazards.
Inhalation	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	May cause respiratory irritation.
		Wash Solution	No known significant effects or critical hazards.
Skin contact	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	Causes skin irritation.
		Wash Solution	No known significant effects or critical hazards.
Ingestion	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	Harmful if swallowed.
		Wash Solution	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Nuclease-Free Water	No specific data.
		Lysis Solution	Adverse symptoms may include the following: pain or irritation watering redness
		Wash Solution	No specific data.
Inhalation	:	Nuclease-Free Water	No specific data.
		Lysis Solution	Adverse symptoms may include the following: respiratory tract irritation coughing
		Wash Solution	No specific data.
Skin contact	:	Nuclease-Free Water	No specific data.
		Lysis Solution	Adverse symptoms may include the following: irritation redness
		Wash Solution	No specific data.

Section 4. First-aid measures

Ingestion	:	Nuclease-Free Water	No specific data.
		Lysis Solution	No specific data.
		Wash Solution	No specific data.

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

Notes to physician	:	Nuclease-Free Water	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Lysis Solution	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 Solution	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	:	Nuclease-Free Water	No specific treatment.
		Lysis Solution	No specific treatment.
		Wash Solution	No specific treatment.
Protection of first-aiders	:	Nuclease-Free Water	No action shall be taken involving any personal risk or without suitable training.
		Lysis Solution	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 Solution	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Nuclease-Free Water	Use an extinguishing agent suitable for the surrounding fire.
		Lysis Solution	Use an extinguishing agent suitable for the surrounding fire.
		Wash Solution	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	Nuclease-Free Water	None known.
		Lysis Solution	None known.
		Wash Solution	None known.
Specific hazards arising from the chemical	:	Nuclease-Free Water	In a fire or if heated, a pressure increase will occur and the container may burst.
		Lysis Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
		Wash Solution	In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

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

Section 6. Accidental release measures

		personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders :	Nuclease-Free Water	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".
	Lysis Solution	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".
	Wash Solution	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 :	Nuclease-Free Water	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).
	Lysis Solution	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 Solution	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 :	Nuclease-Free Water	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.
	Lysis Solution	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 Solution	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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Nuclease-Free Water	Put on appropriate personal protective equipment (see Section 8).
		Lysis Solution	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 Solution	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	Nuclease-Free Water	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.
		Lysis Solution	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 Solution	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	:	Nuclease-Free Water	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.
		Lysis Solution	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 7. Handling and storage

Wash Solution	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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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.

Skin protection

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

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

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

Section 8. Exposure controls/personal protection

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	:	Nuclease-Free Water	Liquid.
		Lysis Solution	Liquid.
		Wash Solution	Liquid.
Color	:	Nuclease-Free Water	Colorless.
		Lysis Solution	Not available.
		Wash Solution	Not available.
Odor	:	Nuclease-Free Water	Odorless.
		Lysis Solution	Not available.
		Wash Solution	Not available.
Odor threshold	:	Nuclease-Free Water	Not available.
		Lysis Solution	Not available.
		Wash Solution	Not available.
pH	:	Nuclease-Free Water	7
		Lysis Solution	7.5
		Wash Solution	7.5
Melting point/freezing point	:	Nuclease-Free Water	0°C (32°F)
		Lysis Solution	Not available.
		Wash Solution	0°C (32°F)
Boiling point, initial boiling point, and boiling range	:	Nuclease-Free Water	100°C (212°F)
		Lysis Solution	Not available.
		Wash Solution	100°C (212°F)
Flash point	:	Nuclease-Free Water	Not available.
		Lysis Solution	Not available.
		Wash Solution	Not available.
Evaporation rate	:	Nuclease-Free Water	Not available.
		Lysis Solution	Not available.
		Wash Solution	Not available.
Flammability	:	Nuclease-Free Water	Not applicable.
		Lysis Solution	Not applicable.
		Wash Solution	Not applicable.
Lower and upper explosion limit/flammability limit	:	Nuclease-Free Water	Not available.
		Lysis Solution	Not available.
		Wash Solution	Not available.
Vapor pressure	:	Nuclease-Free Water	2.3 kPa (17.5 mm Hg) [room temperature] 12.3 kPa (92.258 mm Hg) [50°C (122°F)]

Ingredient name	Vapor Pressure at 20˚C			Vapor pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method

Section 9. Physical and chemical properties and safety characteristics

Lysis Solution						
water	17.5	2.3	-	92.258	12.3	-
Wash Solution						
water	17.5	2.3	-	92.258	12.3	-

Relative vapor density :

Nuclease-Free Water	0.62 [Air = 1]
Lysis Solution	Not available.
Wash Solution	Not available.

Relative density :

Nuclease-Free Water	1
Lysis Solution	Not available.
Wash Solution	Not available.

Solubility(ies) :

Media	Result
Nuclease-Free Water	
water	Soluble
Lysis Solution	
water	Soluble
Wash Solution	
water	Soluble

Partition coefficient: n-octanol/water :

Nuclease-Free Water	-1.38
Lysis Solution	Not applicable.
Wash Solution	Not applicable.

Auto-ignition temperature :

Nuclease-Free Water	Not applicable.

Decomposition temperature :

Nuclease-Free Water	Not available.
Lysis Solution	Not available.
Wash Solution	Not available.

Viscosity :

Nuclease-Free Water	Not available.
Lysis Solution	Not available.
Wash Solution	Not available.

Particle characteristics

Median particle size :

Nuclease-Free Water	Not applicable.
Lysis Solution	Not applicable.
Wash Solution	Not applicable.

Section 10. Stability and reactivity

Reactivity :

Nuclease-Free Water	No specific test data related to reactivity available for this product or its ingredients.
Lysis Solution	No specific test data related to reactivity available for this product or its ingredients.
Wash Solution	No specific test data related to reactivity available for this product or its ingredients.

Chemical stability :

Nuclease-Free Water	The product is stable.
Lysis Solution	The product is stable.
Wash Solution	The product is stable.

Possibility of hazardous reactions :

Nuclease-Free Water	Under normal conditions of storage and use, hazardous reactions will not occur.
Lysis Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Wash Solution	Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid :

Nuclease-Free Water	No specific data.
Lysis Solution	No specific data.
Wash Solution	No specific data.

Incompatible materials :

Nuclease-Free Water	May react or be incompatible with oxidizing materials.
Lysis Solution	May react or be incompatible with oxidizing materials.
Wash Solution	May react or be incompatible with oxidizing materials.

Hazardous decomposition products :

Nuclease-Free Water	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Lysis Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Wash Solution	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
Lysis Solution				
Guanidinium chloride	LC50 Inhalation Dusts and mists	Rat - Female	3.181 mg/l	4 hours
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat	475 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Lysis Solution					
Guanidinium chloride	Eyes - Moderate irritant	Rabbit	-	81400 ug	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Lysis Solution			
Guanidinium chloride	Category 3	-	Respiratory tract irritation

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	:	Nuclease-Free Water	Not available.
		Lysis Solution	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
		Wash Solution	Not available.

Potential acute health effects

Eye contact	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	Causes serious eye irritation.
		Wash Solution	No known significant effects or critical hazards.
Inhalation	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	May cause respiratory irritation.
		Wash Solution	No known significant effects or critical hazards.
Skin contact	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	Causes skin irritation.
		Wash Solution	No known significant effects or critical hazards.
Ingestion	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	Harmful if swallowed.
		Wash Solution	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	Nuclease-Free Water	No specific data.
		Lysis Solution	Adverse symptoms may include the following: pain or irritation watering redness
		Wash Solution	No specific data.
Inhalation	:	Nuclease-Free Water	No specific data.
		Lysis Solution	Adverse symptoms may include the following: respiratory tract irritation coughing
		Wash Solution	No specific data.
Skin contact	:	Nuclease-Free Water	No specific data.
		Lysis Solution	Adverse symptoms may include the following: irritation redness
		Wash Solution	No specific data.
Ingestion	:	Nuclease-Free Water	No specific data.
		Lysis Solution	No specific data.
		Wash Solution	No specific data.

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.

Section 11. Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

General	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
Carcinogenicity	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
Mutagenicity	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
Reproductive toxicity	:	Nuclease-Free Water	No known significant effects or critical hazards.
		Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	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)
Lysis Solution					
Lysis Solution	1004.5	5286.8	N/A	N/A	6.7
Guanidinium chloride	475	2500	N/A	N/A	3.181

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Nuclease-Free Water			
water	-	-	Readily
Lysis Solution			
Guanidinium chloride	-	-	Inherent

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Nuclease-Free Water			
water	-1.38	-	Low
Lysis Solution			
Guanidinium chloride	-1.7	-	Low

Mobility in soil

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

Section 12. Ecological information

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

Section 13. Disposal considerations

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

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

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 : None of the components are listed.

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

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Canada : All components are listed or exempted.

United States : All components are active or exempted.

Section 16. Other information

History

Date of issue/Date of revision : 09/27/2023

Date of previous issue : 08/03/2020

Version : 6

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
Lysis Solution	
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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