Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

Total RNA Isolation Mini Kit, Part Number 5185-6000

Section 1. Identification

1.1 Product identifier

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

Part No. (Chemical Kit) : 5185-6000

Part No. :

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

Validation date : 26/01/2015.

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

Material uses : Analytical chemistry.

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

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
Logistics Center - Americas
500 Ships Landing Way
New Castle, Delaware 19720
800-227-9770

1.4 Emergency telephone number

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

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :

Lysis Solution	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Wash Solution	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Nuclease-Free Water	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

Lysis Solution

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

Section 2. Hazards identification

Ingredients of unknown toxicity	:	Lysis Solution	Not applicable.
		Wash Solution	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 1.5%
		Nuclease-Free Water	Not applicable.

2.2 GHS label elements

Hazard pictograms :

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

Precautionary statements

General	:	Lysis Solution	Not applicable.
		Wash Solution	Not applicable.
		Nuclease-Free Water	Not applicable.
Prevention	:	Lysis Solution	P280 - Wear protective gloves. Wear eye or face protection. P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
		Wash Solution	Not applicable.
		Nuclease-Free Water	Not applicable.
Response	:	Lysis Solution	P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. P302 + P352 + P362-2 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. P332 + P313 - If skin irritation occurs: Get medical attention. 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 attention.
		Wash Solution	Not applicable.
		Nuclease-Free Water	Not applicable.

Section 2. Hazards identification

Storage	:	Lysis Solution	P405 - Store locked up.
		Wash Solution	Not applicable.
		Nuclease-Free Water	Not applicable.
Disposal	:	Lysis Solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		Wash Solution	Not applicable.
		Nuclease-Free Water	Not applicable.

2.3 Other hazards

Hazards not otherwise classified	:	Lysis Solution	None known.
		Wash Solution	None known.
		Nuclease-Free Water	None known.

Section 3. Composition/information on ingredients

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

Ingredient name	%	CAS number
Lysis Solution		
Guanidinium chloride	30 - 60	50-01-1
Wash Solution		
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	1 - 5	1185-53-1
Nuclease-Free Water		
Nuclease-Free water	60 - 100	7732-18-5

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

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

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	:	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.
		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.

Section 4. First aid measures

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

Section 4. First aid measures

		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-Free Water	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	Lysis Solution	Causes serious eye irritation.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Inhalation	:	Lysis Solution	May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
		Wash Solution	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
		Nuclease-Free Water	No known significant effects or critical hazards.
Skin contact	:	Lysis Solution	Causes skin irritation.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Ingestion	:	Lysis Solution	Harmful if swallowed. Irritating to mouth, throat and stomach.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.

Over-exposure signs/symptoms

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

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

Section 4. First aid measures

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

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Lysis Solution	Use an extinguishing agent suitable for the surrounding fire.
		Wash Solution	Use an extinguishing agent suitable for the surrounding fire.
		Nuclease-Free Water	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	Lysis Solution	None known.
		Wash Solution	None known.
		Nuclease-Free Water	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	:	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.
		Nuclease-Free Water	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	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

Section 5. Fire-fighting measures

		nitrogen oxides halogenated compounds
	Nuclease-Free Water	No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters	:	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.
		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.
Special protective equipment for fire-fighters	:	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.
		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.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	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 personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
		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.

Section 6. Accidental release measures

For emergency responders	:	Lysis Solution	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
		Wash Solution	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
		Nuclease-Free Water	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	:	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).
		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).

6.3 Methods and materials for containment and cleaning up

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.
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.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	:	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).

Section 7. Handling and storage

	Nuclease-Free Water	Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : 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.

7.2 Conditions for safe storage, including any incompatibilities :

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.
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.
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.

7.3 Specific end use(s)

Recommendations :

Lysis Solution	Industrial applications, Professional applications.
Wash Solution	Industrial applications, Professional applications.
Nuclease-Free Water	Industrial applications, Professional applications.

Industrial sector specific solutions : Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

None.

8.2 Exposure controls

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.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Lysis Solution	Liquid.
		Wash Solution	Liquid.
		Nuclease-Free Water	Liquid.
Color	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Colorless.

Section 9. Physical and chemical properties

Odor	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Odorless.
Odor threshold	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not available.
pH	:	Lysis Solution	7.5
		Wash Solution	7.5
		Nuclease-Free Water	7
Melting point	:	Lysis Solution	Not available.
		Wash Solution	0°C (32°F)
		Nuclease-Free Water	0°C (32°F)
Boiling point	:	Lysis Solution	Not available.
		Wash Solution	100°C (212°F)
		Nuclease-Free Water	100°C (212°F)
Flash point	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not applicable.
Evaporation rate	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not available.
Flammability (solid, gas)	:	Lysis Solution	Not applicable.
		Wash Solution	Not applicable.
		Nuclease-Free Water	Not applicable.
Lower and upper explosive (flammable) limits	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not available.
Vapor pressure	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	3.2 kPa (23.8 mm Hg) [room temperature]
Vapor density	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	0.62 [Air = 1]
Relative density	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not available.
Solubility	:	Lysis Solution	Soluble in the following materials: cold water and hot water.
		Wash Solution	Easily soluble in the following materials: cold water and hot water.
		Nuclease-Free Water	Easily soluble in the following materials: cold water and hot water.
Solubility in water	:	Not available.	
Partition coefficient: n-octanol/water	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	-1.38
Auto-ignition temperature	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not available.
Decomposition temperature	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	>1200°C (>2192°F)

Section 9. Physical and chemical properties

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

Section 10. Stability and reactivity

10.1 Reactivity	:	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.
		Nuclease-Free Water	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	Lysis Solution	The product is stable.
		Wash Solution	The product is stable.
		Nuclease-Free Water	The product is stable.
10.3 Possibility of hazardous reactions	:	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.
		Nuclease-Free Water	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	Lysis Solution	No specific data.
		Wash Solution	No specific data.
		Nuclease-Free Water	No specific data.
10.5 Incompatible materials	:	Lysis Solution	No specific data.
		Wash Solution	No specific data.
		Nuclease-Free Water	No specific data.
10.6 Hazardous decomposition products	:	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.
		Nuclease-Free Water	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Lysis Solution				
Guanidinium chloride	LC50 Inhalation Dusts and mists	Rat	5319 mg/l	4 hours
	LD50 Oral	Rat	475 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

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

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Lysis Solution			
Guanidinium chloride	Category 3	Not applicable.	Respiratory tract irritation
Wash Solution			
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Lysis Solution — Routes of entry anticipated: Oral, Dermal, Inhalation.

Wash Solution — Routes of entry anticipated: Oral, Dermal, Inhalation.

Nuclease-Free Water — Not available.

Potential acute health effects

Eye contact : Lysis Solution — Causes serious eye irritation.

Wash Solution — No known significant effects or critical hazards.

Nuclease-Free Water — No known significant effects or critical hazards.

Section 11. Toxicological information

Inhalation	:	Lysis Solution	May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
		Wash Solution	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
		Nuclease-Free Water	No known significant effects or critical hazards.
Skin contact	:	Lysis Solution	Causes skin irritation.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Ingestion	:	Lysis Solution	Harmful if swallowed. Irritating to mouth, throat and stomach.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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

Potential delayed effects : Not available.

Potential chronic health effects

General	:	Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Carcinogenicity	:	Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity	:	Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Teratogenicity	:	Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Developmental effects	:	Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.
Fertility effects	:	Lysis Solution	No known significant effects or critical hazards.
		Wash Solution	No known significant effects or critical hazards.
		Nuclease-Free Water	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Lysis Solution Oral	1010.6 mg/kg

Other information	:	Lysis Solution	Not available.
		Wash Solution	Not available.
		Nuclease-Free Water	Not available.

Section 12. Ecological information

12.1 Toxicity

Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Lysis Solution Guanidinium chloride	OECD 301C Ready Biodegradability - Modified MITI Test (I)	0 % - Readily - 33 days	-	Activated sludge

12.3 Bioaccumulative potential

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

12.4 Mobility in soil

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

Section 12. Ecological information

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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

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

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

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

Section 14. Transport information

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

Section 15. Regulatory information

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Lysis Solution Guanidinium chloride	30 - 60	Yes.	No.	No.	Yes.	No.
Wash Solution 2-Amino-2-(hydroxymethyl)propane-1, 3-diol hydrochloride	1 - 5	No.	No.	No.	Yes.	No.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Canada inventory : All components are listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Section 16. Other information

History

Date of issue : 26/01/2015.

Date of previous issue : 23/05/2014.

Version : 4

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.