

# SAFETY DATA SHEET

Multi Aff Rem Spin Cartridge Reagent Kit, Part Number 5188-5254

## Section 1. Identification

### 1.1 Product identifier

**Product name** : Multi Aff Rem Spin Cartridge Reagent Kit, Part Number 5188-5254  
**Part No. (Chemical Kit)** : 5188-5254  
**Part No.** : Buffer A Equil Load Wash 5185-5987  
 Buffer B - Elution 5185-5988  
**Validation date** : 10/13/2017

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

**Material uses** :  Analytical reagent.  
 Buffer A Equil Load Wash 1 L  
 Buffer B - Elution 1 L

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

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

### 1.4 Emergency telephone number

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

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

**OSHA/HCS status** : Buffer A Equil Load Wash 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.  
 Buffer B - Elution This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

**Buffer B - Elution**  
 H320 EYE IRRITATION - Category 2B  
**Ingredients of unknown toxicity** :  Buffer A Equil Load Wash Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%  
 Buffer B - Elution Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%

### 2.2 GHS label elements

**Signal word** : Buffer A Equil Load Wash No signal word.  
 Buffer B - Elution Warning  
**Hazard statements** : Buffer A Equil Load Wash No no significant effects or critical hazards.  
 Buffer B - Elution H320 - Causes eye irritation.  
**Precautionary statements**  
**Prevention** : Buffer A Equil Load Wash Not applicable.  
 Buffer B - Elution P264 - Wash hands thoroughly after handling.

## Section 2. Hazards identification

<b>Response</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not applicable. 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.
<b>Storage</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not applicable. Not applicable.
<b>Disposal</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not applicable. Not applicable.
<b>Supplemental label elements</b>	: Buffer A Equil Load Wash Buffer B - Elution	None known. None known.

### 2.3 Other hazards

<b>Hazards not otherwise classified</b>	: Buffer A Equil Load Wash Buffer B - Elution	None known. None known.
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## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Buffer A Equil Load Wash Buffer B - Elution	Mixture Mixture
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Ingredient name	%	CAS number
<b>Buffer A Equil Load Wash</b> Proprietary	Proprietary	-
<b>Buffer B - Elution</b> Urea Hydrochloric acid	≥10 - ≤25 ≤4.3	57-13-6 7647-01-0

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

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

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

## Section 4. First aid measures

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	: Buffer A Equil Load Wash  Buffer B - Elution	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. 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. If irritation persists, get medical attention.
<b>Inhalation</b>	: Buffer A Equil Load Wash  Buffer B - Elution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be

## Section 4. First aid measures

dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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** : Buffer A Equil Load Wash

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

Buffer B - Elution

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : Buffer A Equil Load Wash

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.

Buffer B - Elution

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 adverse health effects persist or are severe. 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.

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

#### Potential acute health effects

**Eye contact** : Buffer A Equil Load Wash  
Buffer B - Elution

No known significant effects or critical hazards. Causes eye irritation.

**Inhalation** : Buffer A Equil Load Wash  
Buffer B - Elution

No known significant effects or critical hazards. No known significant effects or critical hazards.

**Skin contact** : Buffer A Equil Load Wash  
Buffer B - Elution

No known significant effects or critical hazards. No known significant effects or critical hazards.

**Ingestion** : Buffer A Equil Load Wash  
Buffer B - Elution

No known significant effects or critical hazards. No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## Section 4. First aid measures

<b>Eye contact</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. Adverse symptoms may include the following: irritation watering redness
<b>Inhalation</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. No specific data.
<b>Skin contact</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. No specific data.
<b>Ingestion</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. No specific data.

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

<b>Notes to physician</b>	: Buffer A Equil Load Wash  Buffer B - Elution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Specific treatments</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: Buffer A Equil Load Wash  Buffer B - Elution	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: Buffer A Equil Load Wash  Buffer B - Elution	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: Buffer A Equil Load Wash Buffer B - Elution	None known. None known.

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

<b>Specific hazards arising from the chemical</b>	: Buffer A Equil Load Wash  Buffer B - Elution	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	: Buffer A Equil Load Wash  Buffer B - Elution	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides

## Section 5. Fire-fighting measures

halogenated compounds

### 5.3 Advice for firefighters

#### Special protective actions for fire-fighters

: Buffer A Equil Load Wash

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.

Buffer B - Elution

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

: Buffer A Equil Load Wash

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

Buffer B - Elution

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

: Buffer A Equil Load Wash

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.

Buffer B - Elution

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.

**For emergency responders** : Buffer A Equil Load Wash

Buffer B - Elution

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". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

: Buffer A Equil Load Wash

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).

Buffer B - Elution

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).

## Section 6. Accidental release measures

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

**Methods for cleaning up** : Buffer A Equil Load Wash

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.

Buffer B - Elution

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** : Buffer A Equil Load Wash

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

Buffer B - Elution

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

**Advice on general occupational hygiene** : Buffer A Equil Load Wash

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Buffer B - Elution

**7.2 Conditions for safe storage, including any incompatibilities** : Buffer A Equil Load Wash

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. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from

Buffer B - Elution

## Section 7. Handling and storage

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.

### 7.3 Specific end use(s)

<b>Recommendations</b>	: Buffer A Equil Load Wash Buffer B - Elution	Industrial applications, Professional applications. Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not applicable. Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>Buffer A Equil Load Wash</b> Proprietary	None.
<b>Buffer B - Elution</b> Urea	<b>AIHA WEEL (United States, 10/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
Hydrochloric acid	<b>ACGIH TLV (United States, 3/2017).</b> C: 2 ppm <b>OSHA PEL 1989 (United States, 3/1989).</b> CEIL: 5 ppm CEIL: 7 mg/m <sup>3</sup> <b>NIOSH REL (United States, 10/2016).</b> CEIL: 5 ppm CEIL: 7 mg/m <sup>3</sup> <b>OSHA PEL (United States, 6/2016).</b> CEIL: 5 ppm CEIL: 7 mg/m <sup>3</sup>

### 8.2 Exposure controls

<b>Appropriate engineering controls</b>	: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
<b>Environmental exposure controls</b>	: 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

<b>Hygiene measures</b>	: 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.
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## Section 8. Exposure controls/personal protection

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

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: Buffer A Equil Load Wash Buffer B - Elution	Liquid. [Clear.] Liquid. [Clear.]
<b>Color</b>	: Buffer A Equil Load Wash Buffer B - Elution	Colorless. Colorless.
<b>Odor</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Odorless.
<b>Odor threshold</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.
<b>pH</b>	: Buffer A Equil Load Wash Buffer B - Elution	7.4 2.25
<b>Melting point</b>	: Buffer A Equil Load Wash Buffer B - Elution	0°C (32°F) Not available.
<b>Boiling point</b>	: Buffer A Equil Load Wash Buffer B - Elution	100°C (212°F) Not available.
<b>Flash point</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.
<b>Evaporation rate</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.
<b>Flammability (solid, gas)</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not applicable. Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.
<b>Vapor pressure</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.
<b>Vapor density</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.
<b>Relative density</b>	: Buffer A Equil Load Wash Buffer B - Elution	Not available. Not available.



## Section 9. Physical and chemical properties

<b>Solubility</b>	: Buffer A Equil Load Wash	Easily soluble in the following materials: cold water and hot water.
	Buffer B - Elution	Easily soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Buffer A Equil Load Wash	Not available.
	Buffer B - Elution	Not available.
<b>Auto-ignition temperature</b>	: Buffer A Equil Load Wash	Not available.
	Buffer B - Elution	Not available.
<b>Decomposition temperature</b>	: Buffer A Equil Load Wash	Not available.
	Buffer B - Elution	Not available.
<b>Viscosity</b>	: Buffer A Equil Load Wash	Not available.
	Buffer B - Elution	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: Buffer A Equil Load Wash	No specific test data related to reactivity available for this product or its ingredients.
	Buffer B - Elution	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Buffer A Equil Load Wash	The product is stable.
	Buffer B - Elution	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: Buffer A Equil Load Wash	Under normal conditions of storage and use, hazardous reactions will not occur.
	Buffer B - Elution	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: Buffer A Equil Load Wash	No specific data.
	Buffer B - Elution	No specific data.
<b>10.5 Incompatible materials</b>	: Buffer A Equil Load Wash	May react or be incompatible with oxidizing materials.
	Buffer B - Elution	May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	: Buffer A Equil Load Wash	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Buffer B - Elution	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
Buffer A Equil Load Wash Proprietary	LD50 Oral	Rat	3000 mg/kg	-
Buffer B - Elution Urea	LD50 Oral	Rat	8471 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Buffer A Equil Load Wash Proprietary	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	OSHA	IARC	NTP
Buffer B - Elution Hydrochloric acid	-	3	-

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Buffer B - Elution Hydrochloric acid	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** : Buffer A Equil Load Wash  
Buffer B - Elution

Not available.  
Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

<b>Eye contact</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. Causes eye irritation.
<b>Inhalation</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.

## Section 11. Toxicological information

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

<b>Eye contact</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. Adverse symptoms may include the following: irritation watering redness
<b>Inhalation</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. No specific data.
<b>Skin contact</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. No specific data.
<b>Ingestion</b>	: Buffer A Equil Load Wash Buffer B - Elution	No specific data. 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

<b>General</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Developmental effects</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Fertility effects</b>	: Buffer A Equil Load Wash Buffer B - Elution	No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
<b>Buffer A Equil Load Wash</b> Oral	103448.3 mg/kg
<b>Buffer B - Elution</b> Inhalation (vapors)	29.17 mg/l

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>Buffer A Equil Load Wash</b> Proprietary	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 EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	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
<b>Buffer B - Elution</b> Urea	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
	Acute EC50 6573.1 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
Hydrochloric acid	Acute EC50 3910000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 16700 µg/l Fresh water	Fish - Labeo rohita - Egg	96 hours
	Chronic NOEC 2 g/L Fresh water	Fish - Heteropneustes fossilis	30 days
	Acute LC50 240000 µg/l Marine water	Crustaceans - Carcinus maenas - Adult	48 hours
	Acute LC50 282 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>Buffer B - Elution</b> Urea	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Buffer B - Elution</b> Urea	<-1.73	-	low

### 12.4 Mobility in soil

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

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

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

## 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. 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



**DOT / TDG / Mexico / 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 Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

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


**U.S. Federal regulations** : TSCA 4(a) proposed test rules: Glycine  
TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
 Clean Water Act (CWA) 311: Disodium hydrogenorthophosphate; Hydrochloric acid  
 Clean Air Act (CAA) 112 regulated toxic substances: Hydrochloric acid

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** :  listed

## Section 15. Regulatory information

### SARA 302/304

#### Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
<b>Buffer A Equil Load Wash</b> Sodium azide	≤0.1	Yes.	500	-	1000	-
<b>Buffer B - Elution</b> Hydrochloric acid	≤4.3	Yes.	500	-	5000	-

**SARA 304 RQ** : 333333.3 lbs / 151333.3 kg

### SARA 311/312

**Classification** : Buffer A Equil Load Wash Not applicable.  
Buffer B - Elution Immediate (acute) health hazard

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<b>Buffer A Equil Load Wash</b> Proprietary	Proprietary	No.	No.	No.	Yes.	No.
<b>Buffer B - Elution</b> Urea	≥10 - ≤25	Yes.	No.	No.	Yes.	No.
Hydrochloric acid	≤4.3	No.	No.	No.	Yes.	No.

### SARA 313

	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	<b>Buffer B - Elution</b> Hydrochloric acid	7647-01-0	≤4.3
<b>Supplier notification</b>	<b>Buffer B - Elution</b> Hydrochloric acid	7647-01-0	≤4.3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

- Massachusetts** : The following components are listed: HYDROGEN CHLORIDE; HYDROCHLORIC ACID  
**New York** : The following components are listed: Hydrochloric acid  
**New Jersey** : The following components are listed: HYDROGEN CHLORIDE; HYDROCHLORIC ACID  
**Pennsylvania** : The following components are listed: HYDROCHLORIC ACID

### International regulations

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

Not listed.

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

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

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

Not listed.

## Section 15. Regulatory information

### [UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

### [Inventory list](#)

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

## Section 16. Other information

### [History](#)

<a href="#">Date of issue</a>	: 10/13/2017
<a href="#">Date of previous issue</a>	: 10/29/2015.
<a href="#">Version</a>	: 4

Indicates information that has changed from previously issued version.

### [Notice to reader](#)

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