

Section 2. Hazards identification

Hazard statements	: DNA-Binding Solution	H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects.
	PCR Wash Buffer (5X)	No known significant effects or critical hazards.
Precautionary statements		
Prevention	: DNA-Binding Solution	P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling.
	PCR Wash Buffer (5X)	Not applicable.
Response	: DNA-Binding Solution	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. P363 - Wash contaminated clothing before reuse. P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
	PCR Wash Buffer (5X)	Not applicable.
Storage	: DNA-Binding Solution	Not applicable.
	PCR Wash Buffer (5X)	Not applicable.
Disposal	: DNA-Binding Solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	PCR Wash Buffer (5X)	Not applicable.
Supplemental label elements	: DNA-Binding Solution	Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.
	PCR Wash Buffer (5X)	None known.
2.3 Other hazards		
Hazards not otherwise classified	: DNA-Binding Solution	Causes respiratory tract burns. Causes digestive tract burns.
	PCR Wash Buffer (5X)	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: DNA-Binding Solution	Mixture
	PCR Wash Buffer (5X)	Mixture

Ingredient name	%	CAS number
DNA-Binding Solution		
Guanidinium thiocyanate	≥25 - ≤50	593-84-0
Trometamol	≤3	77-86-1

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

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

4.1 Description of necessary first aid measures

Eye contact : DNA-Binding Solution

Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

PCR Wash Buffer (5X)

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 : DNA-Binding Solution

Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

PCR Wash Buffer (5X)

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

Skin contact : DNA-Binding Solution

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

PCR Wash Buffer (5X)

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

Section 4. First aid measures

Ingestion	: DNA-Binding Solution	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Wash 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.
	PCR Wash Buffer (5X)	

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Causes serious eye damage. No known significant effects or critical hazards.
Inhalation	: DNA-Binding Solution PCR Wash Buffer (5X)	Corrosive to the respiratory system. No known significant effects or critical hazards.
Skin contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Causes severe burns. No known significant effects or critical hazards.
Ingestion	: DNA-Binding Solution PCR Wash Buffer (5X)	May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: pain watering redness No specific data.
Inhalation	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: respiratory tract irritation coughing No specific data.
Skin contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: pain or irritation redness blistering may occur No specific data.
Ingestion	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: stomach pains No specific data.

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

Section 4. First aid measures

Notes to physician	: DNA-Binding 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.
	PCR Wash Buffer (5X)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: DNA-Binding Solution	No specific treatment.
	PCR Wash Buffer (5X)	No specific treatment.
Protection of first-aiders	: DNA-Binding 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 contaminated clothing thoroughly with water before removing it, or wear gloves.
	PCR Wash Buffer (5X)	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	: DNA-Binding Solution	Use an extinguishing agent suitable for the surrounding fire.
	PCR Wash Buffer (5X)	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: DNA-Binding Solution	None known.
	PCR Wash Buffer (5X)	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: DNA-Binding Solution	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	PCR Wash Buffer (5X)	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: DNA-Binding Solution	Decomposition products may include the following materials:
	PCR Wash Buffer (5X)	carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds No specific data.

5.3 Advice for firefighters

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : DNA-Binding Solution

PCR Wash Buffer (5X)

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.

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 : DNA-Binding Solution

PCR Wash Buffer (5X)

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

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 : DNA-Binding Solution

PCR Wash Buffer (5X)

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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.

For emergency responders : DNA-Binding Solution

PCR Wash Buffer (5X)

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 : DNA-Binding Solution

PCR Wash Buffer (5X)

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

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

Section 6. Accidental release measures

Methods for cleaning up : DNA-Binding 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.

PCR Wash Buffer (5X)

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 : DNA-Binding Solution

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

PCR Wash Buffer (5X)

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

Advice on general occupational hygiene : DNA-Binding 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. 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.

PCR Wash Buffer (5X)

7.2 Conditions for safe storage, including any incompatibilities : DNA-Binding 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.

PCR Wash Buffer (5X)

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

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)

Recommendations	: DNA-Binding Solution PCR Wash Buffer (5X)	Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: DNA-Binding Solution PCR Wash Buffer (5X)	Not available. Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
DNA-Binding Solution Guanidinium thiocyanate Trometamol	None. None.

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls	: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Section 8. Exposure controls/personal 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** : 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** : DNA-Binding Solution Liquid.
PCR Wash Buffer (5X) Liquid.
- Color** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Odor** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Odor threshold** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- pH** : DNA-Binding Solution 6.4
PCR Wash Buffer (5X) 6.4
- Melting point/freezing point** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) 0°C (32°F)
- Boiling point, initial boiling point, and boiling range** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) 100°C (212°F)
- Flash point** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Evaporation rate** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Flammability** : DNA-Binding Solution Not applicable.
PCR Wash Buffer (5X) Not applicable.
- Lower and upper explosion limit/flammability limit** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.

Vapor pressure

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

	 DNA-Binding Solution						
	water	17.5	2.3	-	92.258	12.3	-
	Trometamol	<0.00075006	<0.0001	-	-	-	-
	PCR Wash Buffer (5X)						
	water	17.5	2.3	-	92.258	12.3	-
Relative vapor density	: DNA-Binding Solution	Not available.					
	PCR Wash Buffer (5X)	Not available.					
Relative density	: DNA-Binding Solution	Not available.					
	PCR Wash Buffer (5X)	Not available.					
Solubility(ies)	: Media	Result					
	 DNA-Binding Solution						
	water	Soluble					
	PCR Wash Buffer (5X)						
	water	Soluble					
Partition coefficient: n-octanol/water	:  DNA-Binding Solution	Not applicable.					
	PCR Wash Buffer (5X)	Not applicable.					
Auto-ignition temperature	:  Not available.						
Decomposition temperature	: DNA-Binding Solution	Not available.					
	PCR Wash Buffer (5X)	Not available.					
Viscosity	: DNA-Binding Solution	Not available.					
	PCR Wash Buffer (5X)	Not available.					
Particle characteristics							
Median particle size	:  DNA-Binding Solution	Not applicable.					
	PCR Wash Buffer (5X)	Not applicable.					

Section 10. Stability and reactivity

10.1 Reactivity	: DNA-Binding Solution	No specific test data related to reactivity available for this product or its ingredients.
	PCR Wash Buffer (5X)	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: DNA-Binding Solution	The product is stable.
	PCR Wash Buffer (5X)	The product is stable.
10.3 Possibility of hazardous reactions	: DNA-Binding Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
	PCR Wash Buffer (5X)	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: DNA-Binding Solution	No specific data.
	PCR Wash Buffer (5X)	No specific data.
10.5 Incompatible materials	: DNA-Binding Solution	May react or be incompatible with oxidizing materials.
	PCR Wash Buffer (5X)	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

10.6 Hazardous decomposition products

: DNA-Binding Solution

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

PCR Wash Buffer (5X)

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
DNA-Binding Solution Guanidinium thiocyanate	LC50 Inhalation Dusts and mists LD50 Oral	Rat - Female Rat - Male, Female	3.181 mg/l 593 mg/kg	4 hours -
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
DNA-Binding Solution Trometamol	Skin - Moderate irritant Skin - Severe irritant	Rabbit Rabbit	- -	25 % 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
DNA-Binding Solution Trometamol	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: **DNA-Binding Solution**Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Not available.

PCR Wash Buffer (5X)

Potential acute health effects

Eye contact

: DNA-Binding Solution
PCR Wash Buffer (5X)Causes serious eye damage.
No known significant effects or critical hazards.

Section 11. Toxicological information

Inhalation	: DNA-Binding Solution PCR Wash Buffer (5X)	Corrosive to the respiratory system. No known significant effects or critical hazards.
Skin contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Causes severe burns. No known significant effects or critical hazards.
Ingestion	: DNA-Binding Solution PCR Wash Buffer (5X)	May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: pain watering redness No specific data.
Inhalation	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: respiratory tract irritation coughing No specific data.
Skin contact	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: pain or irritation redness blistering may occur No specific data.
Ingestion	: DNA-Binding Solution PCR Wash Buffer (5X)	Adverse symptoms may include the following: stomach pains 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	: DNA-Binding Solution PCR Wash Buffer (5X)	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: DNA-Binding Solution PCR Wash Buffer (5X)	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: DNA-Binding Solution PCR Wash Buffer (5X)	No known significant effects or critical hazards. No known significant effects or critical hazards.
Reproductive toxicity	: DNA-Binding Solution PCR Wash Buffer (5X)	No known significant effects or critical hazards. No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
DNA-Binding Solution DNA-Binding Solution Guanidinium thiocyanate	1253.7 593	2325.6 1100	N/A N/A	N/A N/A	6.7 3.181

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
DNA-Binding Solution Trometamol	Acute EC50 >980 mg/l Fresh water Acute NOEC 520 mg/l Fresh water	Daphnia Daphnia	48 hours 48 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
DNA-Binding Solution Guanidinium thiocyanate	OECD 302B Inherent	46 % - Inherent - 28 days	-	-
Trometamol	Biodegradability: Zahn-Wellens/ EMPA Test OECD 301F Ready Biodegradability - Manometric Respirometry Test	97.1 % - Readily - 28 days	30 mg/l	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
DNA-Binding Solution Guanidinium thiocyanate	-	-	Inherent
Trometamol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
DNA-Binding Solution Guanidinium thiocyanate	<-1.7	-	Low
Trometamol	-2.31	-	Low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods






Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. 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 Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3316	UN3316	UN3316	UN3316	UN3316
UN proper shipping name	Chemical kit	CHEMICAL KIT	EQUIPO QUIMICO	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9 	9 	9 	9 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

Additional information

Remarks: Excepted Quantity

DOT Classification

: **Limited quantity** Yes.
Packaging instruction Exceptions: 161. Non-bulk: 161. Bulk: None.
Quantity limitation Passenger aircraft/rail: 10 kg. Cargo aircraft: 10 kg.
Special provisions 15

TDG Classification

: **Product classified as per the following sections of the Transportation of Dangerous Goods Regulations:** 2.43-2.45 (Class 9).
Passenger Carrying Road or Rail Index 10
Special provisions 65, 141

Mexico Classification

: **Special provisions** 251, 340

IMDG

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

Section 14. Transport information

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960.
Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.
Special provisions A44, A163

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

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

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

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined

Clean 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.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : DNA-Binding Solution

ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION - Category 1C
SERIOUS EYE DAMAGE - Category 1
HNOC - Corrosive to digestive tract
HNOC - Corrosive to respiratory tract
Not applicable.

PCR Wash Buffer (5X)

Composition/information on ingredients

Name	%	Classification
DNA-Binding Solution		
Guanidinium thiocyanate	≥25 - ≤50	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 HNOC - Corrosive to digestive tract HNOC - Corrosive to respiratory tract
Trometamol	≤3	COMBUSTIBLE DUSTS SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

State regulations

Section 15. Regulatory information

- 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

This product does not require a Safe Harbor warning under California Prop. 65.

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

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

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
DNA-Binding Solution ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method Calculation method Calculation method

History

- Date of issue/Date of revision** : 03/20/2024
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Section 16. Other information

Key to abbreviations

: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
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

📌 Indicates information that has changed from previously issued version.

Notice to reader

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