

SAFETY DATA SHEET



QuikChange HT DNA Cleanup Kit, Part Number 5190-7456

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : QuikChange HT DNA Cleanup Kit, Part Number 5190-7456
Part no. (chemical kit) : 5190-7456
Part no. : DNA-Binding Solution 400771-14
 PCR Wash Buffer (5X) 400771-17

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

Identified uses : Analytical reagent.
 DNA-Binding Solution 2.5 ml
 PCR Wash Buffer (5X) 5 ml
Uses advised against : None known.

1.3 Details of the supplier of the safety data sheet

Agilent Technologies LDA UK Ltd.
 5500 Lakeside Cheadle Royal Business Park,
 Cheadle, Cheshire, SK8 3GR
 United Kingdom
 Tel: +44 (0) 345 712 5292
e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : DNA-Binding Solution Mixture
 PCR Wash Buffer (5X) Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

DNA-Binding Solution

H302	ACUTE TOXICITY (oral)	Category 4
H314	SKIN CORROSION/IRRITATION	Category 1C
H412	LONG-TERM (CHRONIC) AQUATIC HAZARD	Category 3

DNA-Binding Solution

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

PCR Wash Buffer (5X)

The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

Ingredients of unknown toxicity : DNA-Binding Solution Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

SECTION 2: Hazards identification

Hazard pictograms : DNA-Binding Solution



Signal word : DNA-Binding Solution
PCR Wash Buffer (5X)

Danger
No signal word.

Hazard statements : DNA-Binding Solution

PCR Wash Buffer (5X)

H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H412 - Harmful to aquatic life with long lasting effects.
No known significant effects or critical hazards.

Precautionary statements

Prevention : DNA-Binding Solution

PCR Wash Buffer (5X)

P280 - Wear protective gloves, protective clothing and eye or face protection.
Not applicable.

Response : DNA-Binding Solution

P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
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.

Storage : DNA-Binding Solution
PCR Wash Buffer (5X)

Not applicable.
Not applicable.

Disposal : DNA-Binding Solution

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Not applicable.

Hazardous ingredients : DNA-Binding Solution

salts of thiocyanic acid

Supplemental label elements : DNA-Binding Solution
PCR Wash Buffer (5X)

Not applicable.
Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : DNA-Binding Solution
PCR Wash Buffer (5X)

Not applicable.
Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : DNA-Binding Solution
PCR Wash Buffer (5X)

Not applicable.
Not applicable.

Tactile warning of danger : DNA-Binding Solution
PCR Wash Buffer (5X)

Not applicable.
Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : DNA-Binding Solution
PCR Wash Buffer (5X)

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : DNA-Binding Solution
PCR Wash Buffer (5X)

Causes digestive tract burns.
None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : DNA-Binding Solution Mixture
 PCR Wash Buffer (5X) Mixture

Product/ingredient name	Identifiers	%	Classification	Type
<input checked="" type="checkbox"/> DNA-Binding Solution salts of thiocyanic acid	EC: 209-812-1 CAS: 593-84-0 Index: 615-004-00-3	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412 EUH032 EUH071	[1]
Trometamol	EC: 201-064-4 CAS: 77-86-1	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 See Section 16 for the full text of the H statements declared above.	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type
 DNA-Binding Solution [1] Substance classified with a health or environmental hazard
 Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of 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.

SECTION 4: First aid measures

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.
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.
	PCR Wash Buffer (5X)	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.
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.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

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

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 4: First aid measures

Notes to physician	: DNA-Binding Solution PCR Wash Buffer (5X)	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. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: DNA-Binding Solution PCR Wash Buffer (5X)	No specific treatment. No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: DNA-Binding Solution PCR Wash Buffer (5X)	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: DNA-Binding Solution PCR Wash Buffer (5X)	None known. None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: DNA-Binding Solution PCR Wash Buffer (5X)	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. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: DNA-Binding Solution PCR Wash Buffer (5X)	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds No specific data.

5.3 Advice for firefighters

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 spilt material. Do not breathe vapour 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 spilt material. Put on appropriate personal protective equipment.
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SECTION 6: Accidental release measures

For emergency responders	: DNA-Binding 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".
	PCR Wash Buffer (5X)	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	: DNA-Binding Solution	Avoid dispersal of spilt 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.
	PCR Wash Buffer (5X)	Avoid dispersal of spilt 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 material for containment and cleaning up		
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.
6.4 Reference to other sections	: See Section 1 for emergency contact information.	
	: See Section 8 for information on appropriate personal protective equipment.	
	: See Section 13 for additional waste treatment information.	

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 vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.
	PCR Wash Buffer (5X)	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

SECTION 7: Handling and storage

for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage	: 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 unlabelled 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 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 unlabelled 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

No exposure limit value known.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
DNA-Binding Solution salts of thiocyanic acid	DNEL	Long term Oral	0.155 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.155 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.27 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	0.31 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1.092 mg/ m ³	Workers	Systemic
	DNEL	Short term Inhalation	3.28 mg/m ³	Workers	Systemic
Trometamol	DNEL	Long term Oral	8.3 mg/kg bw/day	General population	Systemic

SECTION 8: Exposure controls/personal protection

	DNEL	Long term Inhalation	29 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	83.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	117.5 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	166.7 mg/kg bw/day	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour 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.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

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

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

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.

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.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

Physical state : DNA-Binding Solution Liquid.
PCR Wash Buffer (5X) Liquid.

Colour : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.

SECTION 9: Physical and chemical properties

- Odour** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Odour threshold** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Melting point/freezing point** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) 0°C
- Initial boiling point and boiling range** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) 100°C
- Flammability** : DNA-Binding Solution Not applicable.
PCR Wash Buffer (5X) Not applicable.
- Upper/lower flammability or explosive limits** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Flash point** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- pH** : DNA-Binding Solution 6.4
PCR Wash Buffer (5X) 6.4
- Viscosity** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.

Solubility(ies)	Media	Result
	<input checked="" type="checkbox"/> DNA-Binding Solution	
	water	Soluble
	<input checked="" type="checkbox"/> PCR Wash Buffer (5X)	
	water	Soluble

- Partition coefficient: n-octanol/water** : DNA-Binding Solution Not applicable.
PCR Wash Buffer (5X) Not applicable.

Vapour pressure	Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
		mm Hg	kPa	Method	mm Hg	kPa	Method
	<input checked="" type="checkbox"/> DNA-Binding Solution						
	water	17.5	2.3	-	92.258	12.3	-
	trometamol	<0.00075006	<0.0001	-	-	-	-
	<input checked="" type="checkbox"/> PCR Wash Buffer (5X)						
	water	17.5	2.3	-	92.258	12.3	-

- Evaporation rate** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Relative density** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Vapour density** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Explosive properties** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.
- Oxidising properties** : DNA-Binding Solution Not available.
PCR Wash Buffer (5X) Not available.

Particle characteristics

SECTION 9: Physical and chemical properties

Median particle size : DNA-Binding Solution Not applicable.
 PCR Wash Buffer (5X) Not applicable.

9.2 Other information

No additional information.

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 oxidising materials.
 PCR Wash Buffer (5X) May react or be incompatible with oxidising materials.

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 salts of thiocyanic acid	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	-

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
DNA-Binding Solution DNA-Binding Solution salts of thiocyanic acid	1253.7 593	2325.6 1100	N/A N/A	N/A N/A	6.7 3.181

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	- -

Sensitiser

SECTION 11: Toxicological information

Conclusion/Summary : 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)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : DNA-Binding Solution PCR Wash Buffer (5X) Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Not available.

Potential acute health effects

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

Ingestion : DNA-Binding Solution Harmful if swallowed. Corrosive to the digestive tract.
Causes burns.
PCR Wash Buffer (5X) No known significant effects or critical hazards.

Skin contact : DNA-Binding Solution Causes severe burns.
PCR Wash Buffer (5X) No known significant effects or critical hazards.

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

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : DNA-Binding Solution PCR Wash Buffer (5X) No specific data.
No specific data.

Ingestion : DNA-Binding Solution Adverse symptoms may include the following:
stomach pains
PCR Wash Buffer (5X) No specific data.

Skin contact : DNA-Binding Solution Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
PCR Wash Buffer (5X) No specific data.

Eye contact : DNA-Binding Solution Adverse symptoms may include the following:
pain
watering
redness
PCR Wash Buffer (5X) No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

SECTION 11: Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : Not available.

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

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

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

Reproductive toxicity : DNA-Binding Solution No known significant effects or critical hazards.
 PCR Wash Buffer (5X) No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> DNA-Binding Solution Trometamol	Acute EC50 >980 mg/l Fresh water Acute NOEC 520 mg/l Fresh water	Daphnia Daphnia	48 hours 48 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<input checked="" type="checkbox"/> DNA-Binding Solution salts of thiocyanic acid	OECD 302B Inherent Biodegradability: Zahn-Wellens/ EMPA Test	46 % - Inherent - 28 days	-	-
Trometamol	OECD 301F Ready Biodegradability - Manometric Respirometry Test	97.1 % - Readily - 28 days	30 mg/l	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<input checked="" type="checkbox"/> DNA-Binding Solution salts of thiocyanic acid Trometamol	- -	- -	Inherent Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
<input checked="" type="checkbox"/> DNA-Binding Solution salts of thiocyanic acid Trometamol	<-1.7 -2.31	- -	Low Low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

QuikChange HT DNA Cleanup Kit, Part Number 5190-7456

SECTION 12: Ecological information

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised 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.




Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	<input checked="" type="checkbox"/> UN3316	<input checked="" type="checkbox"/> UN3316	<input checked="" type="checkbox"/> UN3316
14.2 UN proper shipping name	<input checked="" type="checkbox"/> CHEMICAL KIT	<input checked="" type="checkbox"/> CHEMICAL KIT	<input checked="" type="checkbox"/> Chemical kit
14.3 Transport hazard class(es)	<input checked="" type="checkbox"/> 	<input checked="" type="checkbox"/> 	<input checked="" type="checkbox"/> 
14.4 Packing group	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14.5 Environmental hazards	No.	No.	No.

Additional information

Remarks: Excepted Quantity

ADR/RID : **Hazard identification number** 90
 Limited quantity See SP 251
 Special provisions 251, 340, 671
 Tunnel code (E)

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

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

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SECTION 14: Transport information

14.6 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.

14.7 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 UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product / Ingredient name	Identifiers	Status
<input checked="" type="checkbox"/> DNA-Binding Solution DNA-Binding Solution		3

Label : DNA-Binding Solution PCR Wash Buffer (5X) Not applicable.
Not applicable.

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

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.

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SECTION 15: Regulatory information

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

United States : All components are active or exempted.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
DNA-Binding Solution Acute Tox. 4, H302 Skin Corr. 1C, H314 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method

Full text of abbreviated H statements

DNA-Binding Solution	
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H412	Harmful to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.
EUH071	Corrosive to the respiratory tract.

Full text of classifications

DNA-Binding Solution	
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Skin Corr. 1C	SKIN CORROSION/IRRITATION - Category 1C
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2

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Notice to reader

SECTION 16: Other information

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