

# Material Safety Data Sheet

## MassCode PCR Purification Kit

### 1. Product and company identification

<b>Product name</b>	: MassCode PCR Purification Kit	
<b>Material uses</b>	: Analytical reagent.	
	DNA-Binding Solution	75 ml
	5X PCR Wash Buffer	50 ml
<b>Supplier/Manufacturer</b>	: Agilent Technologies, Inc. 1834 State Highway 71 West Cedar Creek, TX 78612 800-227-9770	
<b>Part No. (Chemical Kit)</b>	: 5190-3605	
<b>Part No.</b>	DNA-Binding Solution	5190-3606
	5X PCR Wash Buffer	5190-3607
<b>Validation date</b>	: 06/30/2013	
<b>In case of emergency</b>	: CHEMTREC®: 1-800-424-9300	

### 2. Hazards identification

<b>Physical state</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Liquid. Liquid.
<b>Odor</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>OSHA/HCS status</b>	: DNA-Binding Solution  5X PCR Wash Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
<b>Emergency overview</b>		
<b>Signal word</b>	: DNA-Binding Solution 5X PCR Wash Buffer	WARNING!
<b>Hazard statements</b>	: DNA-Binding Solution  5X PCR Wash Buffer	HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
<b>Precautions</b>	: DNA-Binding Solution  5X PCR Wash Buffer	Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
<b>Routes of entry</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.

## 2. Hazards identification

### Potential acute health effects

<b>Inhalation</b>	: DNA-Binding Solution	Toxic by inhalation. Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Ingestion</b>	: DNA-Binding Solution	Harmful if swallowed.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Skin</b>	: DNA-Binding Solution	Harmful in contact with skin. Irritating to skin.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Eyes</b>	: DNA-Binding Solution	Irritating to eyes.
	5X PCR Wash Buffer	No known significant effects or critical hazards.

### Potential chronic health effects

<b>Chronic effects</b>	: DNA-Binding Solution	Contains material that may cause target organ damage, based on animal data.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: DNA-Binding Solution	No known significant effects or critical hazards.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: DNA-Binding Solution	No known significant effects or critical hazards.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: DNA-Binding Solution	No known significant effects or critical hazards.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Developmental effects</b>	: DNA-Binding Solution	No known significant effects or critical hazards.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Fertility effects</b>	: DNA-Binding Solution	No known significant effects or critical hazards.
	5X PCR Wash Buffer	No known significant effects or critical hazards.
<b>Target organs</b>	: DNA-Binding Solution	Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.
	5X PCR Wash Buffer	Not available.

### Over-exposure signs/symptoms

<b>Inhalation</b>	: DNA-Binding Solution	Adverse symptoms may include the following: respiratory tract irritation coughing
	5X PCR Wash Buffer	No specific data.
<b>Ingestion</b>	: DNA-Binding Solution	No specific data.
	5X PCR Wash Buffer	No specific data.
<b>Skin</b>	: DNA-Binding Solution	Adverse symptoms may include the following: irritation redness
	5X PCR Wash Buffer	No specific data.
<b>Eyes</b>	: DNA-Binding Solution	Adverse symptoms may include the following: pain or irritation watering redness
	5X PCR Wash Buffer	No specific data.
<b>Medical conditions aggravated by over-exposure</b>	: DNA-Binding Solution	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.
	5X PCR Wash Buffer	None known.

See toxicological information (Section 11)

### 3. Composition/information on ingredients

Name	CAS number	%
<b>DNA-Binding Solution</b> Guanidinium thiocyanate	593-84-0	30 - 60
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	1185-53-1	1 - 5

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.

### 4. First aid measures

<b>Eye contact</b>	: DNA-Binding Solution	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	5X PCR Wash Buffer	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
<b>Skin contact</b>	: DNA-Binding Solution	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
	5X PCR Wash Buffer	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
<b>Inhalation</b>	: DNA-Binding Solution	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
	5X PCR Wash Buffer	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
<b>Ingestion</b>	: DNA-Binding Solution	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
	5X PCR Wash Buffer	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

## 4. First aid measures

**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.

5X PCR Wash Buffer

No action shall be taken involving any personal risk or without suitable training.

**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.

5X PCR Wash Buffer

No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

**Flammability of the product** : DNA-Binding Solution

In a fire or if heated, a pressure increase will occur and the container may burst.

5X PCR Wash Buffer

In a fire or if heated, a pressure increase will occur and the container may burst.

### Extinguishing media

**Suitable** : DNA-Binding Solution

Use an extinguishing agent suitable for the surrounding fire.

5X PCR Wash Buffer

Use an extinguishing agent suitable for the surrounding fire.

**Not suitable** : DNA-Binding Solution  
5X PCR Wash Buffer

None known.  
None known.

**Special exposure hazards** : DNA-Binding Solution

No action shall be taken involving any personal risk or without suitable training.

5X PCR Wash Buffer

No action shall be taken involving any personal risk or without suitable training.

**Hazardous thermal decomposition products** : DNA-Binding Solution

Decomposition products may include the following materials:

5X PCR Wash Buffer

carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides  
halogenated compounds  
No specific data.

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

## 6. Accidental release measures

**Personal precautions** : DNA-Binding Solution

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

5X PCR Wash Buffer

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

## 6. Accidental release measures

**Environmental precautions** : DNA-Binding Solution

5X PCR Wash Buffer

**Methods for cleaning up** : DNA-Binding Solution

5X PCR Wash Buffer

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

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).

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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.

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## 7. Handling and storage

**Handling** : DNA-Binding Solution

5X PCR Wash Buffer

**Storage** : DNA-Binding Solution

5X PCR Wash Buffer

Put on appropriate personal protective equipment (see Section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. 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.

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

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

## 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.

## 8. Exposure controls/personal protection

### Ingredient

No exposure limit value known.

### Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. 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.
- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : 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.
- Eyes** : 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 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** : 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.
- 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.
- Other protection** : Not available.

## 9. Physical and chemical properties

<b>Physical state</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Liquid. Liquid.
<b>Flash point</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Auto-ignition temperature</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Flammable limits</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Color</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Odor</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>pH</b>	: DNA-Binding Solution 5X PCR Wash Buffer	6.4 6.4
<b>Boiling/condensation point</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. 100°C (212°F)
<b>Melting/freezing point</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. 0°C (32°F)
<b>Specific gravity</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Vapor pressure</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Vapor density</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Volatility</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Odor threshold</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Evaporation rate</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Viscosity</b>	: DNA-Binding Solution 5X PCR Wash Buffer	Not available. Not available.
<b>Solubility</b>	: DNA-Binding Solution  5X PCR Wash Buffer	Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.

## 10. Stability and reactivity

<b>Chemical stability</b>	: DNA-Binding Solution 5X PCR Wash Buffer	The product is stable. The product is stable.
<b>Conditions to avoid</b>	: DNA-Binding Solution 5X PCR Wash Buffer	No specific data. No specific data.
<b>Materials to avoid</b>	: DNA-Binding Solution 5X PCR Wash Buffer	No specific data. No specific data.
<b>Hazardous decomposition products</b>	: DNA-Binding Solution  5X PCR Wash Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Possibility of hazardous reactions</b>	: DNA-Binding Solution  5X PCR Wash Buffer	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

## 11. Toxicological information

### Acute toxicity

Not available.

### Irritation/Corrosion

**Conclusion/Summary** : Not available.

### Sensitizer

**Conclusion/Summary** : Not available.

### Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

**Other adverse symptoms** : DNA-Binding Solution Not available.  
5X PCR Wash Buffer Not available.

## 12. Ecological information

**Ecotoxicity** : May cause long-term adverse effects in the aquatic environment.

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

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

## 13. Disposal considerations

**Waste disposal** : 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.

## 14. Transport information

### Regulatory information

**DOT / IMDG / IATA /** : Not regulated.

## 15. Regulatory information

**HCS Classification** : DNA-Binding Solution Toxic material  
Irritating material  
5X PCR Wash Buffer Target organ effects  
Not regulated.

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** All components are listed or exempted.  
**SARA 302/304:** No products were found.  
**SARA 311/312 Hazards identification:** Immediate (acute) health hazard



## 15. Regulatory information

- 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

### State regulations

- Massachusetts** : None of the components are listed.
- New York** : None of the components are listed.
- New Jersey** : None of the components are listed.
- Pennsylvania** : None of the components are listed.
- California Prop. 65**

No products were found.

## 16. Other information

- Label requirements** : DNA-Binding Solution  
5X PCR Wash Buffer
- HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.  
NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
- Date of issue** : 06/30/2013
- Date of previous issue** : 05/30/2011.
- Version** : 2

Indicates information that has changed from previously issued version.

### Notice to reader

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