SAFETY DATA SHEET

HP PCR Template Preparation Kit

Version: 1.9
Revision Date: 09-18-2019
Date of last issue: 04-15-2019
Date of first issue: 11-13-2015

SECTION 1. IDENTIFICATION

Product name: HP PCR Template Preparation Kit
Product code: 11796828001

Manufacturer or supplier’s details
Company name of supplier: Roche Diagnostics
Address: 9115 Hague Road
46250 Indianapolis IN
USA
Telephone: 1-800-428-5074

Emergency telephone
In case of emergencies: CHEMTREC
1-800-424-9300 (U.S. or Canada)
1-703-527-3887 (International)

Recommended use of the chemical and restrictions on use
Restrictions on use: For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
The product is a kit consisting of individual ingredients. The classification of the ingredients can be obtained from section 3. Section GHS Label elements contains the resulting labelling for the kit

GHS label elements
Hazard pictograms

Signal Word: Danger
Hazard Statements: H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary Statements: Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
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/doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362 Take off contaminated clothing and wash before reuse.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Tissue Lysis Buffer

GHS Classification
Not a hazardous substance or mixture.

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>57-13-6</td>
<td>&gt;= 20 - &lt; 30</td>
</tr>
<tr>
<td>Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O)</td>
<td>6381-92-6</td>
<td>&gt;= 5 - &lt; 10</td>
</tr>
</tbody>
</table>

Actual concentration is withheld as a trade secret

Lysis/Binding Buffer/DNA PBB

GHS Classification
Acute toxicity (Oral) : Category 4
### Skin irritation
- Category 2

### Serious eye damage
- Category 1

### Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine, hydrochloride (1:1)</td>
<td>50-01-1</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>9002-93-1</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>Urea</td>
<td>57-13-6</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

Actual concentration is withheld as a trade secret

### Proteinase K, PCR grade

#### GHS Classification

- **Skin irritation**: Category 2
- **Eye irritation**: Category 2A
- **Respiratory sensitization**: Category 1
- **Skin sensitization**: Category 1
- **Specific target organ toxicity - single exposure**: Category 3 (Respiratory system)

#### Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteinase K</td>
<td>39450-01-6</td>
<td>&gt;= 70 - &lt; 90</td>
</tr>
</tbody>
</table>

Actual concentration is withheld as a trade secret

### Wash Buffer I / Inhibitor Removal Buffer

#### GHS Classification

- **Acute toxicity (Oral)**: Category 4
- **Skin irritation**: Category 2
- **Eye irritation**: Category 2A

#### Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine, hydrochloride (1:1)</td>
<td>50-01-1</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
</tbody>
</table>

Actual concentration is withheld as a trade secret

### Wash buffer
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GHS Classification
Not a hazardous substance or mixture.

Components
No hazardous ingredients

Elution Buffer

GHS Classification
Not a hazardous substance or mixture.

Components
No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice
Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled
Call a physician or poison control center immediately.
Move to fresh air.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact
If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed
Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
Rinse mouth with water.

Most important symptoms and effects, both acute and delayed
No information available.
SAFETY DATA SHEET

HP PCR Template Preparation Kit

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</tr>
</thead>
</table>

Notes to physician: The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: High volume water jet

Specific hazards during fire fighting: Do not allow run-off from fire fighting to enter drains or water courses.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.

Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
To prevent leaks or spillages from spreading, provide a suitable liquid retention system.

Conditions for safe storage:
- Keep container tightly closed in a dry and well-ventilated place.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions:
- See label, package insert or internal guidelines

Further information on storage stability:
- No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Tissue Lysis Buffer

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>57-13-6</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>US WEEL</td>
</tr>
</tbody>
</table>

Lysis/Binding Buffer/DNA PBB

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>57-13-6</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>US WEEL</td>
</tr>
</tbody>
</table>

Proteinase K, PCR grade

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteinase K</td>
<td>39450-01-6</td>
<td>IOEL</td>
<td>0.00006 mg/m3</td>
<td>Roche Industrial Hygiene Committee (RIHC)</td>
</tr>
</tbody>
</table>

Wash Buffer I / Inhibitor Removal Buffer

Ingredients with workplace control parameters
- Contains no substances with occupational exposure limit values.

Wash buffer

Ingredients with workplace control parameters
- Contains no substances with occupational exposure limit values.

Elution Buffer
Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

Engineering measures: No data available

Personal protective equipment
Respiratory protection: In the case of vapor formation use a respirator with an approved filter.

Hand protection
Material: Protective gloves

Remarks: Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.

Eye protection: Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection: Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Tissue Lysis Buffer

Appearance: liquid
Color: colorless
Odor: none
Odor Threshold: No data available
pH: 7.4
Melting point/range: No data available
Boiling point/boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): The product is not flammable.
Flammability (liquids): Does not sustain combustion.
Self-ignition : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : No data available
Relative vapor density : No data available
Relative density : No data available
Solubility(ies)
  Water solubility : completely miscible
  Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
  Viscosity, dynamic : No data available
  Viscosity, kinematic : No data available
Oxidizing properties : The substance or mixture is not classified as oxidizing.

**Lysis/Binding Buffer/DNA PBB**

Appearance : liquid
Color : colorless
Odor : none
Odor Threshold : No data available
pH : 4.4
Melting point/range : No data available
Boiling point/boiling range : No data available
Flash point : does not flash
Evaporation rate : No data available
Flammability (solid, gas) : Does not sustain combustion.
Flammability (liquids) : Does not sustain combustion.
Self-ignition : Not applicable
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : No data available
Relative vapor density : No data available
Relative density : No data available
Solubility(ies)
   Water solubility : completely miscible
   Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
   Viscosity, dynamic : No data available
   Viscosity, kinematic : No data available
Oxidizing properties : The substance or mixture is not classified as oxidizing.

Proteinase K, PCR grade
Appearance : solid
Color : white
Odor : very faint
Odor Threshold : Not applicable
pH : 6.5 (as aqueous solution)
Melting point/range : No data available
Boiling point/boiling range : No data available
Flash point : does not flash
Evaporation rate : No data available
Flammability (solid, gas) : Sustains combustion
Flammability (liquids) : Sustains combustion
Self-ignition : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : No data available
Relative vapor density : Not applicable
Relative density : No data available
Solubility(ies)
  Water solubility : completely soluble
  Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
  Viscosity, dynamic : Not applicable
  Viscosity, kinematic : Not applicable
Oxidizing properties : The substance or mixture is not classified as oxidizing.

Wash Buffer I / Inhibitor Removal Buffer

Appearance : liquid
Color : colorless
Odor : none
Odor Threshold : No data available
pH : 6.6
Melting point/range : No data available
Boiling point/boiling range : No data available
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : The product is not flammable.
Flammability (liquids) : Does not sustain combustion.
Self-ignition : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : No data available
Relative vapor density : No data available
Relative density : No data available
Solubility(ies)
   Water solubility : completely miscible
   Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
   Viscosity, dynamic : No data available
   Viscosity, kinematic : No data available
Oxidizing properties : The substance or mixture is not classified as oxidizing.

**Wash buffer**

Appearance : liquid
Color : clear, colorless
Odor : none
Odor Threshold : No data available
pH : 7.4 - 7.6
Melting point/range : No data available
### Boiling point/boiling range
- No data available

### Flash point
- No data available

### Evaporation rate
- No data available

### Flammability (liquids)
- Does not sustain combustion.
  - The product is not flammable.

### Self-ignition
- No data available

### Upper explosion limit / Upper flammability limit
- No data available

### Lower explosion limit / Lower flammability limit
- No data available

### Vapor pressure
- No data available

### Relative vapor density
- No data available

### Relative density
- No data available

### Solubility(ies)
- Water solubility: completely miscible
- Solubility in other solvents: No data available

### Partition coefficient: n-octanol/water
- No data available

### Autoignition temperature
- No data available

### Decomposition temperature
- No data available

### Viscosity
- Viscosity, dynamic: No data available
- Viscosity, kinematic: No data available

### Oxidizing properties
- The substance or mixture is not classified as oxidizing.

### Elution Buffer

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>clear, colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>none</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>8.4 - 8.6</td>
</tr>
</tbody>
</table>
Melting point/range: No data available
Boiling point/boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (liquids): Does not sustain combustion.
The product is not flammable.
Self-ignition: No data available
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapor pressure: No data available
Relative vapor density: No data available
Relative density: No data available
Solubility(ies):
Water solubility: completely miscible
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
Autoignition temperature: No data available
Decomposition temperature: No data available
Viscosity:
Viscosity, dynamic: No data available
Viscosity, kinematic: No data available
Oxidizing properties: The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY
Reactivity: No dangerous reaction known under conditions of normal use.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions:
Reacts with the following substances:
Oxidizing agents
Keep away from heat and sources of ignition.
No decomposition if stored and applied as directed.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: Strong acids and oxidizing agents, Bases

Hazardous decomposition products: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke), Nitrogen oxides (NOx), Gaseous hydrogen chloride (HCl), Ammonia

SECTION 11. TOXICOLOGICAL INFORMATION

Tissue Lysis Buffer

Acute toxicity
Not classified based on available information.

Components:

Urea:
Acute oral toxicity: LD50 Oral (Rat): 8,471 mg/kg
LD50 Oral (Mouse): 11,000 mg/kg
Acute inhalation toxicity: Acute toxicity estimate: > 30 mg/l
Test atmosphere: dust/mist
Method: Expert judgment
Acute dermal toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Expert judgment

Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O):
Acute oral toxicity: LD50 Oral (Rat): > 2,000 mg/kg
Test substance: anhydrous substance
LD50 Oral (Rabbit): 2,300 mg/kg
Acute inhalation toxicity:
LC50 (Rat): 1 - 5 mg/l
Exposure time: 6 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Test substance: anhydrous substance
Acute toxicity estimate: 1.5 mg/l
Test atmosphere: dust/mist
Method: Expert judgment
Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Components:

Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O):
Genotoxicity in vitro: Test Type: Ames test
Remarks: In vitro tests did not show mutagenic effects

Carcinogenicity
Not classified based on available information.

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

Components:

Urea:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure
Not classified based on available information.

Components:

Urea:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration toxicity
Not classified based on available information.

Components:
Urea:
No data available

Lysis/Binding Buffer/DNA PBB

Acute toxicity
Harmful if swallowed.

Components:
Guanidine, hydrochloride (1:1):
Acute oral toxicity
LD50 Oral (Rat): 475 mg/kg
LD50 Oral (Mouse): 571 mg/kg
LD50 Oral (Rat): 1,120 mg/kg
Acute inhalation toxicity
LC50 (Rat, female): 3.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
LC50 (Rat, male and female): 5.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
LC50 (Rat, male): 7.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity
LD50 Dermal (Rabbit): > 2,000 mg/kg

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-:
Acute oral toxicity
LD50 Oral (Rat): 1,900 - 5,000 mg/kg
Acute toxicity estimate: 500 mg/kg
Method: Expert judgment
Acute dermal toxicity
LD50 Dermal (Rabbit): > 3,000 mg/kg

Urea:
Acute oral toxicity
LD50 Oral (Rat): 8,471 mg/kg
LD50 Oral (Mouse): 11,000 mg/kg
Acute inhalation toxicity
Acute toxicity estimate: > 30 mg/l
Test atmosphere: dust/mist
Method: Expert judgment
Acute dermal toxicity
Acute toxicity estimate: > 5,000 mg/kg
Method: Expert judgment

**Skin corrosion/irritation**
Causes skin irritation.

**Components:**
Guanidine, hydrochloride (1:1):
Species: Rabbit
Result: Irritating to skin.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Components:**
Guanidine, hydrochloride (1:1):
Species: Rabbit
Result: Irritating to eyes.

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-:
Result: Risk of serious damage to eyes.
Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitization**

**Skin sensitization**
Not classified based on available information.

**Respiratory sensitization**
Not classified based on available information.

**Components:**
Guanidine, hydrochloride (1:1):
Assessment: Did not cause sensitization on laboratory animals.

**Germ cell mutagenicity**
Not classified based on available information.

**Components:**
Guanidine, hydrochloride (1:1):
Germ cell mutagenicity - Assessment: Not mutagenic in Ames Test.

**Carcinogenicity**
Not classified based on available information.

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.
NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

Components:
Urea:
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure
Not classified based on available information.

Components:
Urea:
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration toxicity
Not classified based on available information.

Components:
Urea:
No data available

Proteinase K, PCR grade

Acute toxicity
Not classified based on available information.

Skin corrosion/irritation
Causes skin irritation.

Components:
Proteinase K:
Result: Irritating to skin.
Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation
Causes serious eye irritation.

Components:
Proteinase K:
Result: Irritating to eyes.
Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitization**

**Skin sensitization**
May cause an allergic skin reaction.

**Respiratory sensitization**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Components:**

**Proteinase K:**
Assessment: May cause sensitization by skin contact.
Remarks: Causes sensitization.
Assessment: May cause sensitization by inhalation.

**Germ cell mutagenicity**
Not classified based on available information.

**Carcinogenicity**
Not classified based on available information.

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**NTP**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**
Not classified based on available information.

**STOT—single exposure**
May cause respiratory irritation.

**Components:**

**Proteinase K:**
Assessment: May cause respiratory irritation.

**STOT—repeated exposure**
Not classified based on available information.

**Components:**

**Proteinase K:**
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration toxicity**
Not classified based on available information.
Components:

Proteinase K:
No data available

Wash Buffer I / Inhibitor Removal Buffer

Acute toxicity
Harmful if swallowed.

Components:

Guanidine, hydrochloride (1:1):

Acute oral toxicity:
- LD50 Oral (Rat): 475 mg/kg
- LD50 Oral (Mouse): 571 mg/kg
- LD50 Oral (Rat): 1,120 mg/kg

Acute inhalation toxicity:
- LC50 (Rat, female): 3.2 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
- LC50 (Rat, male and female): 5.3 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
- LC50 (Rat, male): 7.7 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist

Acute dermal toxicity:
- LD50 Dermal (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation
Causes skin irritation.

Components:

Guanidine, hydrochloride (1:1):

Species: Rabbit
Result: Irritating to skin.

Serious eye damage/eye irritation
Causes serious eye irritation.

Components:

Guanidine, hydrochloride (1:1):

Species: Rabbit
Result: Irritating to eyes.
Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Components:

Guanidine, hydrochloride (1:1):
Assessment : Did not cause sensitization on laboratory animals.

Germ cell mutagenicity
Not classified based on available information.

Components:

Guanidine, hydrochloride (1:1):
Germ cell mutagenicity - : Not mutagenic in Ames Test.
Assessment

Carcinogenicity
Not classified based on available information.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Wash buffer

Acute toxicity
Not classified based on available information.

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.
Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Elution Buffer

Acute toxicity
Not classified based on available information.

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.
Carcinogenicity
Not classified based on available information.

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Tissue Lysis Buffer

Ecotoxicity

Components:

Urea:
Toxicity to fish:
LC50 (Leuciscus idus (Golden orfe)): > 6,810 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants:
EC50 (Daphnia magna (Water flea)): > 10,000 mg/l

Ecotoxicology Assessment
Toxicity Data on Soil:
Not expected to adsorb on soil.

Other organisms relevant to the environment:
No data available

Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O):
Toxicity to fish:
LC50 (Poecilia reticulata (guppy)): ca. 320 mg/l
Exposure time: 96 h
Test substance: anhydrous substance

LC50 (Leuciscus idus (Golden orfe)): > 500 mg/l
Exposure time: 96 h

Toxicity to daphnia and other:
EC50 (Daphnia): > 100 mg/l
Ecotoxicology Assessment

Acute aquatic toxicity: This product has no known ecotoxicological effects.
Chronic aquatic toxicity: This product has no known ecotoxicological effects.
Toxicity Data on Soil: Not expected to adsorb on soil.
Other organisms relevant to the environment: No data available

Persistence and degradability

Components:

Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O):
Biodegradability: Biodegradation: 3 %
Testing period: 30 d
Remarks: According to the results of tests of biodegradability this product is not readily biodegradable.

Biochemical Oxygen Demand (BOD): 10 mg/g
Incubation time: 5 d

Bioaccumulative potential

Components:

Urea:
Partition coefficient: n-octanol/water: log Pow: -2.59 - -1.59

Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O):
Partition coefficient: n-octanol/water: Remarks: No data available

Mobility in soil
No data available

Other adverse effects

Lysis/Binding Buffer/DNA PBB
Ecotoxicity

Components:

Guanidine, hydrochloride (1:1):
Toxicity to fish: LC50 (Leuciscus idus (Golden orfe)): 1,759 mg/l
Exposure time: 48 h

Toxicity to microorganisms: EC50 (Pseudomonas putida): 89 mg/l
Exposure time: 18 h

Ecotoxicology Assessment
Acute aquatic toxicity: This product has no known ecotoxicological effects.
Chronic aquatic toxicity: This product has no known ecotoxicological effects.
Toxicity Data on Soil: Not expected to adsorb on soil.
Other organisms relevant to the environment: No data available

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-:
Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): 4 - 8.9 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 18 - 26 mg/l
Exposure time: 48 h

Ecotoxicology Assessment
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.
Toxicity Data on Soil: Not expected to adsorb on soil.
Other organisms relevant to the environment: No data available

Urea:
Toxicity to fish: LC50 (Leuciscus idus (Golden orfe)): > 6,810 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants: EC50 (Daphnia magna (Water flea)): > 10,000 mg/l

Ecotoxicology Assessment
Toxicity Data on Soil: Not expected to adsorb on soil.
Other organisms relevant to the environment: No data available
Persistence and degradability

**Components:**

**Guanidine, hydrochloride (1:1):**
Biodegradability: Biodegradation: < 70 %
Remarks: According to the results of tests of biodegradability this product is not readily biodegradable.

Impact on Sewage Treatment: Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

**Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy-:**
Biodegradability: Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: According to the results of tests of biodegradability this product is not readily biodegradable.

Bioaccumulative potential

**Components:**

**Guanidine, hydrochloride (1:1):**
Partition coefficient: n-octanol/water: log Pow: ca. -1.7 (20 °C / 20 °C)

**Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy-:**
Biodegradation: Remarks: No bioaccumulation is to be expected (log Pow <= 4).
Partition coefficient: n-octanol/water: Remarks: No data available

**Urea:**
Partition coefficient: n-octanol/water: log Pow: -2.59 - -1.59

Mobility in soil
No data available

Other adverse effects

*Proteinase K, PCR grade*
Ecotoxicity

Components:

Proteinase K:

Ecotoxicology Assessment
Toxicity Data on Soil : Not expected to adsorb on soil.
Other organisms relevant to the environment : No data available

Persistence and degradability
No data available

Bioaccumulative potential

Components:

Proteinase K:
Partition coefficient: n-octanol/water : Remarks: No data available

Mobility in soil
No data available

Other adverse effects

Wash Buffer I / Inhibitor Removal Buffer

Ecotoxicity

Components:

Guanidine, hydrochloride (1:1):
Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 1,759 mg/l
Exposure time: 48 h
Toxicity to microorganisms : EC50 (Pseudomonas putida): 89 mg/l
Exposure time: 18 h

Ecotoxicology Assessment
Acute aquatic toxicity : This product has no known ecotoxicological effects.
Chronic aquatic toxicity : This product has no known ecotoxicological effects.
Toxicity Data on Soil : Not expected to adsorb on soil.
Other organisms relevant to the environment : No data available
Persistence and degradability

**Components:**

Guanidine, hydrochloride (1:1):

- **Biodegradability:** Biodegradation: < 70%
  Remarks: According to the results of tests of biodegradability this product is not readily biodegradable.

Impact on Sewage Treatment: Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

Bioaccumulative potential

**Components:**

Guanidine, hydrochloride (1:1):

- **Partition coefficient: n-octanol/water:** log Pow: ca. -1.7 (20 °C / 20 °C)

Mobility in soil
No data available

Other adverse effects

**Wash buffer**

Ecotoxicity
No data available

**Persistence and degradability**
No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

Other adverse effects

**Elution Buffer**

Ecotoxicity
No data available

**Persistence and degradability**
No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available
Other adverse effects

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

Tissue Lysis Buffer

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 311/312 Hazards</td>
<td></td>
<td>No SARA Hazards</td>
</tr>
</tbody>
</table>

29 / 44
Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC’s (40 CFR 60.489):

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td>&gt;= 20 - &lt; 30 %</td>
</tr>
</tbody>
</table>

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Pennsylvania Right To Know

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
</tr>
<tr>
<td>Urea</td>
<td>57-13-6</td>
</tr>
<tr>
<td>Edetic acid disodium salt dihydrate (EDTA-2Na-2H2O)</td>
<td>6381-92-6</td>
</tr>
</tbody>
</table>

Maine Chemicals of High Concern

Vermont Chemicals of High Concern

Washington Chemicals of High Concern

The ingredients of this product are reported in the following inventories:

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL</td>
<td>All components of this product are on the Canadian DSL</td>
</tr>
<tr>
<td>AICS</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>NZIoC</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>ENCS</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>ISHL</td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>KECl</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>PICCS</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>IECSC</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>TCSI</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>TSCA</td>
<td>All substances listed as active on the TSCA inventory</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

HP PCR Template Preparation Kit

Version 1.9
Revision Date: 09-18-2019
Date of last issue: 04-15-2019
Date of first issue: 11-13-2015

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

Lysis/Binding Buffer/DNA PBB

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 311/312 Hazards</td>
<td>Acute toxicity (any route of exposure)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin corrosion or irritation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serious eye damage or eye irritation</td>
<td></td>
</tr>
</tbody>
</table>

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC’s (40 CFR 60.489).

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Pennsylvania Right To Know

Guanidine, hydrochloride (1:1) 50-01-1
Water 7732-18-5
Poly(oxy-1,2-ethanediyl), alpha-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega-hydroxy- 9002-93-1
Maine Chemicals of High Concern
Vermont Chemicals of High Concern
Washington Chemicals of High Concern

The ingredients of this product are reported in the following inventories:

- **DSL**: All components of this product are on the Canadian DSL
- **AICS**: On the inventory, or in compliance with the inventory
- **NZIoC**: On the inventory, or in compliance with the inventory
- **ENCS**: Not in compliance with the inventory
- **ISHL**: Not in compliance with the inventory
- **KECI**: On the inventory, or in compliance with the inventory
- **PICCS**: On the inventory, or in compliance with the inventory
- **IECSC**: On the inventory, or in compliance with the inventory
- **TCSI**: On the inventory, or in compliance with the inventory
- **TSCA**: All substances listed as active on the TSCA inventory

**TSCA list**
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

---

**Proteinase K, PCR grade**

**EPCRA - Emergency Planning and Community Right-to-Know**

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SARA 311/312 Hazards</strong></td>
<td></td>
<td>Skin corrosion or irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Serious eye damage or eye irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Respiratory or skin sensitization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specific target organ toxicity (single or repeated exposure)</td>
</tr>
</tbody>
</table>

**Clean Air Act**
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**
This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**US State Regulations**

**Massachusetts Right To Know**

**Pennsylvania Right To Know**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteinase K</td>
<td>39450-01-6</td>
</tr>
<tr>
<td>Calcium acetate hydrate</td>
<td>114460-21-8</td>
</tr>
</tbody>
</table>

**Maine Chemicals of High Concern**

**Vermont Chemicals of High Concern**

**Washington Chemicals of High Concern**

**The ingredients of this product are reported in the following inventories:**

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSL</td>
<td></td>
<td>This product contains the following components that are not on the Canadian DSL nor NDSL.</td>
</tr>
<tr>
<td>Proteinase K</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AICS</td>
<td></td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>NZIoC</td>
<td></td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>ENCS</td>
<td></td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>ISHL</td>
<td></td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>KECI</td>
<td></td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>PICCS</td>
<td></td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>IECSC</td>
<td></td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>TCSI</td>
<td></td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>TSCA</td>
<td></td>
<td>Substance(s) not listed on TSCA inventory</td>
</tr>
</tbody>
</table>

**TSCA list**
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.
**Wash Buffer I / Inhibitor Removal Buffer**

**EPCRA - Emergency Planning and Community Right-to-Know**

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 311/312 Hazards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity (any route of exposure)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin corrosion or irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage or eye irritation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111SOCMI Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**US State Regulations**

**Massachusetts Right To Know**

**Pennsylvania Right To Know**

| Guanidine, hydrochloride (1:1) | 50-01-1 |
| Water | 7732-18-5 |

**Maine Chemicals of High Concern**

**Vermont Chemicals of High Concern**

**Washington Chemicals of High Concern**

The ingredients of this product are reported in the following inventories:

| DSL | All components of this product are on the Canadian DSL |
| AICS | On the inventory, or in compliance with the inventory |
SAFETY DATA SHEET

HP PCR Template Preparation Kit

Version 1.9
Revision Date: 09-18-2019
Date of last issue: 04-15-2019
Date of first issue: 11-13-2015

NZIoC: On the inventory, or in compliance with the inventory
ENCS: On the inventory, or in compliance with the inventory
ISHL: Not in compliance with the inventory
KECI: On the inventory, or in compliance with the inventory
PICCS: On the inventory, or in compliance with the inventory
IECSC: On the inventory, or in compliance with the inventory
TCSI: On the inventory, or in compliance with the inventory
TSCA: All substances listed as active on the TSCA inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

Wash buffer

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
</table>

SARA 311/312 Hazards: No SARA Hazards

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61). This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F). This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A. This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3. This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307.
US State Regulations

Massachusetts Right To Know

Pennsylvania Right To Know
Water 7732-18-5

Maine Chemicals of High Concern

Vermont Chemicals of High Concern

Washington Chemicals of High Concern

The ingredients of this product are reported in the following inventories:

- **DSL**: All components of this product are on the Canadian DSL
- **AICS**: On the inventory, or in compliance with the inventory
- **NZIoC**: On the inventory, or in compliance with the inventory
- **ENCS**: Not in compliance with the inventory
- **ISHL**: Not in compliance with the inventory
- **KECI**: On the inventory, or in compliance with the inventory
- **PICCS**: On the inventory, or in compliance with the inventory
- **IECSC**: On the inventory, or in compliance with the inventory
- **TCSI**: On the inventory, or in compliance with the inventory
- **TSCA**: All substances listed as active on the TSCA inventory

**TSCA list**
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**Elution Buffer**

**EPCRA - Emergency Planning and Community Right-to-Know**

**CERCLA Reportable Quantity**
This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**
This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 311/312 Hazards</td>
<td></td>
<td>No SARA Hazards</td>
</tr>
</tbody>
</table>
Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307.

US State Regulations

Massachusetts Right To Know

Pennsylvania Right To Know
Water 7732-18-5

Maine Chemicals of High Concern

Vermont Chemicals of High Concern

Washington Chemicals of High Concern

The ingredients of this product are reported in the following inventories:

- DSL: All components of this product are on the Canadian DSL
- AICS: On the inventory, or in compliance with the inventory
- NZIoC: On the inventory, or in compliance with the inventory
- ENCS: On the inventory, or in compliance with the inventory
- ISHL: Not in compliance with the inventory
- KECI: On the inventory, or in compliance with the inventory
- PICCS: On the inventory, or in compliance with the inventory
- IECSC: On the inventory, or in compliance with the inventory
- TCSI: On the inventory, or in compliance with the inventory
- TSCA: All substances listed as active on the TSCA inventory

TSCA list
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.
SAFETY DATA SHEET

HP PCR Template Preparation Kit

Version 1.9
Revision Date: 09-18-2019
Date of last issue: 04-15-2019
Date of first issue: 11-13-2015

Tissue Lysis Buffer

GHS label elements
Not a hazardous substance or mixture.

Lysis/Binding Buffer/DNA PBB

GHS label elements
Hazard pictograms:

Signal Word: Danger

Hazard Statements:
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary Statements:
Prevention:
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
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/doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Proteinase K, PCR grade

GHS label elements
Hazard pictograms:

Signal Word: Danger

Hazard Statements:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary Statements:

**Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.

**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362 Take off contaminated clothing and wash before reuse.

**Storage:**
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

---

**Wash Buffer I / Inhibitor Removal Buffer**

**GHS label elements**

**Hazard pictograms**

- !

**Signal Word**

- Warning

**Hazard Statements**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
Precautionary Statements:

**Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

---

**Wash buffer**

**GHS label elements**
Not a hazardous substance or mixture.

**Elution Buffer**

**GHS label elements**
Not a hazardous substance or mixture.

---

**SECTION 16. OTHER INFORMATION**

**Further information**

**Tissue Lysis Buffer**
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NFPA:

HMIS® IV:

Health / 1
Flammability 0
Physical Hazard 0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Lysis/Binding Buffer/DNA PBB

NFPA:

HMIS® IV:

Health / 3
Flammability 0
Physical Hazard 0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Proteinase K, PCR grade

NFPA:

HMIS® IV:

Health * 2
Flammability 0
Physical Hazard 0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Wash Buffer I / Inhibitor Removal Buffer
NFPA:

Wash buffer

NFPA:

Elution Buffer

HMIS® IV:

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "**" represents a chronic hazard, while the "*/" represents the absence of a chronic hazard.
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NFPA:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Special hazard</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS® IV:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date: 09-18-2019
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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