## MATERIAL SAFETY DATA SHEET

### Product

<table>
<thead>
<tr>
<th>Item #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB-PPK-Preps</td>
<td>EB Pure PCR Purification Kit</td>
</tr>
</tbody>
</table>

### Components

<table>
<thead>
<tr>
<th>Item #</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPK-CP-Preps-PC</td>
<td>EB-PPK CP Buffer</td>
</tr>
<tr>
<td>PPK-DWB-Preps-PC</td>
<td>EB-PPK DNA Wash Buffer</td>
</tr>
<tr>
<td>PPK-E-Preps-PC</td>
<td>EB-PPK Elution Buffer</td>
</tr>
</tbody>
</table>
SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: EB-PPK CP Buffer
Item number: PPK-CP-Preps-PC
Document Number: PC-MSDS-048 Version 001

Relevant identified uses of the substance or mixture and uses advised against: For research use only.

Manufacturer/Supplier:
Empirical Bioscience
2007 EastCastle Dr SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949

MSDS author; customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Ingredients (specific)</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine Hydrochloride</td>
<td>25-50%</td>
<td>50-01-1</td>
</tr>
<tr>
<td>Ethanol</td>
<td>10-20%</td>
<td>64-17-5</td>
</tr>
</tbody>
</table>

SECTION 3 — HAZARDS IDENTIFICATION

Labeling according to Regulation (EC) No 1272/2008: Void

Hazard pictograms: Flammable liquid and vapor.
Signal Word: Warning

Hazard statements:
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

Precautionary Statements:
P210 Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P233 Keep container tightly closed.
P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311 Call a poison center or doctor/physician.

Hazard Classification:
OSHA Hazard Overview: Not Applicable

Health Hazards:
Acute Toxicity (oral) Category 4
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A
Specific organ toxicity – single exposure Category 3
Flammable liquids Category 2

Potential Health Effects: Aggravated Medical Conditions: May cause nervous system disturbances
Symptoms of Overexposure:
Inhalation: Harmful if inhaled. May cause respiratory tract irritation.
Skin: Harmful if absorbed through skin. May cause skin irritation.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.

Carcinogenicity:
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.
ACGIH: 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 ACGIH.
OSHA: 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 OSHA.
NTP: 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 NTP.
SECTION 4 — FIRST AID MEASURES

Description of first aid measures
General information: Exit to a safe area. Consult a physician. Seek medical attention.
After inhalation: Remove to fresh air. If not breathing, give artificial respiration. Seek medical attention.
After skin contact: Exit to safe area. Wash Skin with soap and copious amounts of water. Seek medical attention.
After eye contact: Flush eyes with clean water for a minimum of 15 minutes keeping eyes open. Seek medical attention.
After swallowing: Rinse mouth with water. Never give anything by mouth to an unconscious person. Seek medical attention.
Most important symptoms and effects, both acute and delayed: Irritating to eyes, respiratory system, and skin. Narcotic effect.
Indication of any immediate medical attention and special treatment needed: Treat symptomatically. Symptoms may be delayed.

SECTION 5 — FIRE FIGHTING MEASURES

Conditions of Flammability: Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat, sparks, open flames, and/or hot surfaces. No smoking.
Suitable Extinguishing Agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Hazardous Combustion Products: Carbon oxides (CO, CO2), nitrogen oxides (NOx), hydrogen chloride gas.
Protective Equipment for Firefighters: Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.
Further Information: Prevent firefighting water from entering surface water or groundwater.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear respiratory protection when ventilation is inadequate. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep away from heat and sources of ignition. See Section 8: Exposure Controls/Personal Protection for more details.
Environmental Precautions: Prevent further leakage if area is safe. Do not let product enter drains. Avoid discharge into the environment.
Emergency Procedures: Evacuate personnel to safe areas and follow emergency response protocols.
Methods and material for containment and cleaning up: Use inert absorbent material to soak up spill. Dispose of hazardous waste. Do not flush with water.

SECTION 7 — HANDLING AND STORAGE

Precautions for Safe Handling: Handle in accordance with good chemical hygiene and safety practices. Protect from moisture. Avoid contact with skin and eyes. Avoid inhalation of vapors or mist.
Conditions for safe storage: Keep container tightly closed in a dry, cool, and well-ventilated place. Protect from moisture. Keep away from heat and sources of ignition.
Incompatible Products: Oxidizers

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Appropriate Engineering Controls: Adequate ventilation and access to eye washing stations are required.
Personal protective equipment:
Hand Protection: Use gloves when handling this product. Inspect gloves prior to use for any visible damage. Use proper glove removal technique to prevent contact with skin. Dispose of gloves in accordance with applicable laws. Wash and dry hands after use.
Eye Protection: Wear a face shield and/or safety goggles when handling this product. Use NIOSH-approved eyewear.
Skin and Body Protection: Wear appropriate laboratory attire when handling this product, such as gloves, long pants, closed-toe shoes, and a laboratory coat.
Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level, an approved respirator must be used.
Hygiene Measures: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after using this product. Do not eat, drink, or smoke when handling this product.
Special Requirements for PPE, Clothing, Respirators, etc: N/A
Components with Workplace Control Parameters:

<table>
<thead>
<tr>
<th>Component</th>
<th>Cas No.</th>
<th>Value</th>
<th>Control Parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td></td>
<td>1000 ppm or 1900 mg/m³</td>
<td>OSHA PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1100 ppm</td>
<td>OSHA PEL</td>
</tr>
</tbody>
</table>
SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**
- **Form:** Liquid
- **Color:** Colorless
- **Odor:** Alcohol-like
- **Odor threshold:** No data available
- **pH-value at 20 °C (68 °F):** 4.0-6.0
- **Melting point/Melting range:** No data available
- **Boiling point/Boiling range:** No data available
- **Flash point:** 95°F (35°C)
- **Flammability (solid, gaseous):** No data available
- **Ignition temperature:** No data available
- **Decomposition temperature:** No data available
- **Auto igniting:** No data available
- **Danger of explosion:** No data available

**Explosion limits:**
- **Lower:** No data available
- **Upper:** No data available

**Vapor pressure at 20 °C (68 °F):** No data available

**Density at 20 °C (68 °F):** No data available

**Relative density:** No data available

**Vapour density:** No data available

**Evaporation rate:** No data available

**Solubility in / Miscibility with Water:** No data available

**Partition coefficient (n-octanol/water):** No data available

**Viscosity:** No data available

**Dynamic:** No data available

**Kinematic:** No data available

**Solvent content:** No data available

**Organic Solvents:** No data available

**Water:** No data available

**Solids content:** No data available

**Other information:** No data available

SECTION 10 — STABILITY AND REACTIVITY

**Reactivity:** Vapor/air – Mixtures are flammable

**Chemical stability:** Stable under recommended storage conditions.

**Possibility of hazardous reactions:** Risk of ignition or formation of inflammable gases or vapors with chromium (VI) oxide, hydrogen peroxide, uranium hexafluoride, nitrogen dioxide, nitric acid, oxides of phosphorous, permagamic acid, perchloric acid, sulfuric acid, potassium permanganate, perchlorates, fluorine, ethylene oxide, chromyl chloride, halogen-halogen compounds, strong oxidizing agents, alkali oxides, alkaline earth metals, and alkali metals.

**Conditions to avoid:** Heating, flames, sparks, extremes of temperature and direct sunlight.

**Incompatible materials:** Oxidizing agents, acid anhydrides, aluminum, halogenated compounds, acids.

**Hazardous decomposition products:** In the event of fire, see Section 5.
SECTION 11 — TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure:
- **Inhalation:** Harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion:** Harmful if swallowed.
- **Skin:** Causes skin irritation.
- **Eyes:** Causes serious eye irritation.

Information on toxicological effects:
- **Acute toxicity**
  - Oral LD50: 1,900 mg/kg (Rat)
  - Inhalation LD50: No data available
  - Dermal LD50: 2,000 mg/kg (Rabbit)

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

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

- **Respiratory or skin sensitization:** Components of this product may be absorbed into the body through the skin. Irritating to skin and mucous membranes.

- **Germ cell mutagenicity:** No mutagenic compounds identified.

**Carcinogenicity**
- **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.
- **ACGIH:** 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 ACGIH.
- **OSHA:** 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 OSHA.
- **NTP:** 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 NTP.

**Reproductive Toxicity:** No component toxic to reproduction.

**Teratogenicity:** No data available.

**Specific Target Organ Toxicity – Single Exposure:** Respiratory tract irritation.

**Specific Target Organ Toxicity – Repeated Exposures:** No data available.

**Aspiration Hazard:** No data available.

**Signs and symptoms of exposure:** Irritating to eyes, respiratory system, and skin. Narcotic effect.

**Synergistic effects:** No data available.

**Additional information:** None known.

SECTION 12 — ECOLOGICAL INFORMATION

**Toxicity:**
- **GNC:** No data available
- **EtOH:** 9,268-14,221 mg/L – 48h (Daphnia)

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** Product is water soluble and may spread in water systems.

**Results of PBT and vPvB assessment:**
- **PBT:** No data available
- **vPvB:** No data available

**Other adverse effects:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

SECTION 13 — DISPOSAL CONSIDERATIONS

**Product:** Disposal should be in accordance with applicable regional, national and local laws and regulations. S29 – Do not empty into drains. S57 – Use appropriate container to avoid environmental contamination. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Contamination packaging:** Disposal must be made according to official regulations. To minimize exposure, please refer to Section 8: Exposure Control/Personal Protection of this SDS.
SECTION 14 — TRANSPORT INFORMATION

DOT: Not considered dangerous goods
IMDG: Not considered dangerous goods
IATA: Not considered dangerous goods

SECTION 15 — REGULATORY INFORMATION

US Federal Regulations
OSHA Hazards:
Aggravated Medical Conditions: May cause nervous system disturbances.
Symptoms of Overexposure:
Inhalation: Harmful if inhaled. May cause respiratory irritation.
Skin: Harmful if absorbed through the skin. May cause skin irritation.
Eyes: Causes serious eye irritation.
Ingestion: Harmful if swallowed
SARA 302 Components: None present or none present in regulated quantities.
SARA 313 Components: None present or none present in regulated quantities.
SARA 311/312 Hazards: Acute health hazard, chronic health hazard.

US State Regulation:
California Prop. 65: No ingredients regulated by CA Prop 65 present.
New Jersey & Community RTK: Component (Ethanol); CAS No (64-17-5)
Massachusetts RTK: Component (Ethanol); CAS No (64-17-5)
Pennsylvania RTK: Component (Ethanol); CAS No (64-17-5)
Rhode Island RTK: Component (Ethanol); CAS No (64-17-5)

SECTION 16 — OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS
Empirical Bioscience
2007 Eastcastle Dr SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50
* Data compared to the previous version altered.
SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: EB-PPK DNA Wash Buffer
Item number: AGEK-DWB-Preps-PC
Document Number: PC-MSDS-049 Version 001
Relevant identified uses of the substance or mixture and uses advised against: For research use only.
Application of the substance / the mixture
Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Empirical Bioscience
2007 EastCastle Dr SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949
MSDS author; customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

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<th>Hazardous Ingredients (specific)</th>
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<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of Non-Hazardous Substances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3 — HAZARDS IDENTIFICATION

Labeling according to Regulation (EC) No 1272/2008: Void
Hazard pictograms: Not Applicable
Signal Word: Not Applicable
Hazard statements: Not Applicable.
Precautionary Statements: Not Applicable.
Hazard Classification:
OSHA Hazard Overview: Not Applicable
Health Hazards: Not Applicable
Potential Health Effects: Not Applicable
Symptoms of Overexposure:
Inhalation: Not Applicable.
Skin: Not Applicable.
Eyes: Not Applicable.
Ingestion: Not Applicable.

Carcinogenicity:
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.
ACGIH: 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 ACGIH.
OSHA: 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 OSHA.
NTP: 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 NTP.

SECTION 4 — FIRST AID MEASURES

Description of first aid measures
General information: Wear protective gloves/protective clothing/eye protection/face protection.
After inhalation: If not breathing, give artificial respiration.
After skin contact: Wash Skin with soap and water.
After eye contact: Remove contact lenses, if present and easy to do. Continue rinsing.
After swallowing: N/A
Most important symptoms and effects, both acute and delayed: N/A
Indication of any immediate medical attention and special treatment needed: Treat symptomatically. Symptoms may be delayed.
SECTION 5 — FIRE FIGHTING MEASURES

Conditions of Flammability: Not flammable or combustible.
Suitable Extinguishing Agents: CO2, extinguishing powder, water spray, or alcohol resistant foam.
Hazardous Combustion Products: Not Applicable.
Protective Equipment for Firefighters: Wear NIOSH-approved self-contained breathing apparatus if necessary.
Further Information: Prevent firefighting water from entering surface water or groundwater.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid breathing vapors or mist. See Section 8: Exposure Controls/Personal Protection for more details.
Environmental Precautions: N/A
Emergency Procedures: Evacuate personnel to safe areas and follow emergency response protocols.
Methods and material for containment and cleaning up: Use inert absorbent material to soak up spill.

SECTION 7 — HANDLING AND STORAGE

Precautions for Safe Handling: Handle in accordance with good chemical hygiene and safety practices. Protect from moisture. Avoid contact with skin and eyes. Avoid inhalation of vapors or mist.
Conditions for safe storage: Keep container tightly closed in a dry, well-ventilated place.
Incompatible Products: N/A

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Appropriate Engineering Controls: Adequate ventilation and access to eye washing stations are required.
Personal protective equipment:
  Hand Protection: Use gloves when handling this product. Inspect gloves prior to use for any visible damage. Use proper glove removal technique to prevent contact with skin. Dispose of gloves in accordance with applicable laws. Wash and dry hands after use.
  Eye Protection: Wear a face shield and/or safety goggles when handling this product. Use NIOSH-approved eyewear.
  Skin and Body Protection: Wear appropriate laboratory attire when handling this product, such as gloves, long pants, closed-toe shoes, and a laboratory coat.
  Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level, an approved respirator must be used.
  Hygiene Measures: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after using this product. Do not eat, drink, or smoke when handling this product.
Special Requirements for PPE, Clothing, Respirators, etc: N/A
Components with Workplace Control Parameters: N/A
**Product Title:** EB-PPK DNA Wash Buffer

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

- **Appearance:**
  - Form: Liquid
  - Color: Colorless
- Odor: No data available
- Odor threshold: No data available
- **pH-value at 20 °C (68 °F):** 7.0-9.0
- **Melting point/Melting range:** No data available
- **Boiling point/Boiling range:** No data available
- **Flash point:** No data available
- **Flammability (solid, gaseous):** No data available
- **Ignition temperature:** No data available
- **Decomposition temperature:** No data available
- Auto igniting: No data available
- **Danger of explosion:** No data available
- **Explosion limits:**
  - Lower: No data available
  - Upper: No data available
- **Vapor pressure at 20 °C (68 °F):** No data available
- **Density at 20 °C (68 °F):** No data available
- **Relative density:** No data available
- **Vapour density:** No data available
- **Evaporation rate:** No data available
- **Solubility in / Miscibility with Water:** No data available
- **Partition coefficient (n-octanol/water):** No data available
- **Viscosity:** No data available
- **Dynamic:** No data available
- **Kinematic:** No data available
- **Solvent content:** No data available
- **Organic Solvents:** No data available
- **Water:** No data available
- **Solids content:** No data available
- **Other information:** No data available

**SECTION 10 — STABILITY AND REACTIVITY**

- **Reactivity:** No dangerous reactions known under conditions of normal use.
- **Chemical stability:** Stable under recommended storage conditions.
- **Possibility of hazardous reactions:** No data available.
- **Conditions to avoid:** No data available.
- **Incompatible materials:** No data available
- **Hazardous decomposition products:** No data available
Product Title: EB-PPK DNA Wash Buffer

SECTION 11 — TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure:
Inhalation: No data available.
Ingestion: No data available.
Skin: No data available.
Eyes: No data available.

Information on toxicological effects:
Acute toxicity
Oral LD50: No data available
Inhalation LD50: No data available
Dermal LD50: No data available

Skin corrosion/irritation: No data available
Serious eye damage/irritation: No data available
Respiratory or skin sensitization: No data available
Germ cell mutagenicity: No data available

Carcinogenicity
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.
ACGIH: 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 ACGIH.
OSHA: 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 OSHA.
NTP: 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 NTP.

Reproductive Toxicity: No data available
Teratogenicity: No data available.
Specific Target Organ Toxicity — Single Exposure: No data available.
Specific Target Organ Toxicity — Repeated Exposures: No data available.
Signs and symptoms of exposure: No data available.
Synergistic effects: No data available.
Additional information: No data available.

SECTION 12 — ECOLOGICAL INFORMATION

Toxicity: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available

Results of PBT and vPvB assessment:
PBT: No data available
vPvB: No data available

Other adverse effects: No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Product: Disposal should be in accordance with applicable regional, national and local laws and regulations. S29 – Do not empty into drains. S57 – Use appropriate container to avoid environmental contamination. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Contamination packaging: Disposal must be made according to official regulations. To minimize exposure, please refer to Section 8: Exposure Control/Personal Protection of this SDS.
SECTION 14 — TRANSPORT INFORMATION

| DOT: Not considered dangerous goods |
| IMDG: Not considered dangerous goods |
| IATA: Not considered dangerous goods |

SECTION 15 — REGULATORY INFORMATION

**US Federal Regulations**

- **OSHA Hazards:** No data available.
- **Aggravated Medical Conditions:** No data available.
- **Symptoms of Overexposure:**
  - Inhalation: No data available.
  - Skin: No data available.
  - Eyes: No data available.
  - Ingestion: No data available
- **SARA 302 Components:** None present or none present in regulated quantities.
- **SARA 313 Components:** None present or none present in regulated quantities.
- **SARA 311/312 Hazards:** No data available.

**US State Regulation:**

- **California Prop. 65:** No ingredients regulated by CA Prop 65 present.
- **New Jersey & Community RTK:** Component (Water); CAS No (7732-18-5)
- **Massachusetts RTK:** No ingredients regulated by MS Right to Know Act present.
- **Pennsylvania RTK:** Component (Water); CAS No (7732-18-5)
- **Rhode Island RTK:** No ingredients regulated by RI Right to Know Act present

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS
Empirical Bioscience
2007 Eastcastle Dr SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949

**Abbreviations and acronyms:**

- **ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- **IMDG:** International Maritime Code for Dangerous Goods
- **DOT:** US Department of Transportation
- **IATA:** International Air Transport Association
- **CAS:** Chemical Abstracts Service (division of the American Chemical Society)
- **NFPA:** National Fire Protection Association (USA)
- **HMIS:** Hazardous Materials Identification System (USA)
- **LC50:** Lethal concentration, 50 percent
- **LD50:** Lethal dose, 50

* Data compared to the previous version altered.
Product Title: EB-PPK Elution Buffer

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: EB-PPK Elution Buffer  
Item number: AGEK-E-Preps-PC  
Document Number: PC-MSDS-050 Version 001  
Relevant identified uses of the substance or mixture and uses advised against: For research use only.  
Application of the substance / the mixture  
Details of the supplier of the safety data sheet  
Manufacturer/Supplier:  
Empirical Bioscience  
2007 EastCastle Dr SE  
Grand Rapids, MI 49508 U.S.A.  
1-877-479.9949  
MSDS author: customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

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<tr>
<th>Hazardous Ingredients (specific)</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of Non-Hazardous Substances</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3 — HAZARDS IDENTIFICATION

Labeling according to Regulation (EC) No 1272/2008: Void  
Hazard pictograms: Not Applicable  
Signal Word: Not Applicable  
Hazard statements: Not Applicable.  
Precautionary Statements: Not Applicable.  
Hazard Classification:  
OSHA Hazard Overview: Not Applicable  
Health Hazards: Not Applicable  
Potential Health Effects: Not Applicable  
Symptoms of Overexposure:  
Inhalation: Not Applicable  
Skin: Not Applicable  
Eyes: Not Applicable  
Ingestion: Not Applicable  
Carcinogenicity:  
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.  
ACGIH: 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 ACGIH.  
OSHA: 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 OSHA.  
NTP: 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 NTP.

SECTION 4 — FIRST AID MEASURES

Description of first aid measures  
General information: Wear protective gloves/protective clothing/eye protection/face protection.  
After inhalation: If not breathing, give artificial respiration.  
After skin contact: Wash Skin with soap and water.  
After eye contact: Remove contact lenses, if present and easy to do. Continue rinsing.  
After swallowing: N/A  
Most important symptoms and effects, both acute and delayed: N/A  
Indication of any immediate medical attention and special treatment needed: Treat symptomatically. Symptoms may be delayed.
SECTION 5 — FIRE FIGHTING MEASURES

Conditions of Flammability: Not flammable or combustible.
Suitable Extinguishing Agents: CO2, extinguishing powder, water spray, or alcohol resistant foam.
Hazardous Combustion Products: Not Applicable.
Protective Equipment for Firefighters: Wear NIOSH-approved self-contained breathing apparatus if necessary.
Further Information: Prevent firefighting water from entering surface water or groundwater.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid breathing vapors or mist. See Section 8: Exposure Controls/Personal Protection for more details.
Environmental Precautions: N/A
Emergency Procedures: Evacuate personnel to safe areas and follow emergency response protocols.
Methods and material for containment and cleaning up: Use inert absorbent material to soak up spill.

SECTION 7 — HANDLING AND STORAGE

Precautions for Safe Handling: Handle in accordance with good chemical hygiene and safety practices. Protect from moisture. Avoid contact with skin and eyes. Avoid inhalation of vapors or mist.
Conditions for safe storage: Keep container tightly closed in a dry, well-ventilated place.
Incompatible Products: N/A

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Appropriate Engineering Controls: Adequate ventilation and access to eye washing stations are required.
Personal protective equipment:
- Hand Protection: Use gloves when handling this product. Inspect gloves prior to use for any visible damage. Use proper glove removal technique to prevent contact with skin. Dispose of gloves in accordance with applicable laws. Wash and dry hands after use.
- Eye Protection: Wear a face shield and/or safety goggles when handling this product. Use NIOSH-approved eyewear.
- Skin and Body Protection: Wear appropriate laboratory attire when handling this product, such as gloves, long pants, closed-toe shoes, and a laboratory coat.
- Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level, an approved respirator must be used.
- Hygiene Measures: Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after using this product. Do not eat, drink, or smoke when handling this product.
Special Requirements for PPE, Clothing, Respirators, etc: N/A
Components with Workplace Control Parameters: N/A
SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
- Form: Liquid
- Color: Colorless
Odor: No data available
Odor threshold: No data available
pH-value at 20 °C (68 °F): 8.0-9.0
Melting point/Melting range: No data available
Boiling point/Boiling range: No data available
Flash point: No data available
Flammability (solid, gaseous): No data available
Ignition temperature: No data available
Decomposition temperature: No data available
Auto igniting: No data available
Danger of explosion: No data available
Explosion limits:
  - Lower: No data available
  - Upper: No data available
Vapor pressure at 20 °C (68 °F): No data available
Density at 20 °C (68 °F): No data available
Relative density: No data available
Vapour density: No data available
Evaporation rate: No data available
Solubility in / Miscibility with Water: No data available
Partition coefficient (n-octanol/water): No data available
Viscosity: No data available
Dynamic: No data available
Kinematic: No data available
Solvent content: No data available
Organic Solvents: No data available
Water: No data available
Solids content: No data available
Other information: No data available

SECTION 10 — STABILITY AND REACTIVITY

Reactivity: No dangerous reactions known under conditions of normal use.
Chemical stability: Stable under recommended storage conditions.
Possibility of hazardous reactions: No data available.
Conditions to avoid: No data available.
Incompatible materials: No data available
Hazardous decomposition products: No data available
SECTION 11 — TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure:
- Inhalation: No data available.
- Ingestion: No data available.
- Skin: No data available.
- Eyes: No data available.

Information on toxicological effects:
- Acute toxicity
  - Oral LD50: No data available
  - Inhalation LD50: No data available
  - Dermal LD50: No data available
- Skin corrosion/irritation: No data available
- Serious eye damage/irritation: No data available
- Respiratory or skin sensitization: No data available
- Germ cell mutagenicity: No data available

Carcinogenicity
- 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.
- ACGIH: 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 ACGIH.
- OSHA: 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 OSHA.
- NTP: 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 NTP.

Reproductive Toxicity: No data available
Teratogenicity: No data available.
Specific Target Organ Toxicity – Single Exposure: No data available.
Specific Target Organ Toxicity – Repeated Exposures: No data available.
Signs and symptoms of exposure: No data available.
Synergistic effects: No data available.
Additional information: No data available.

SECTION 12 — ECOLOGICAL INFORMATION

Toxicity: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available.
Results of PBT and vPvB assessment:
- PBT: No data available
- vPvB: No data available
Other adverse effects: No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Product: Disposal should be in accordance with applicable regional, national and local laws and regulations. S29 – Do not empty into drains. S57 – Use appropriate container to avoid environmental contamination. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Contamination packaging: Disposal must be made according to official regulations. To minimize exposure, please refer to Section 8: Exposure Control/Personal Protection of this SDS.
SECTION 14 — TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT</th>
<th>Not considered dangerous goods</th>
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</thead>
<tbody>
<tr>
<td>IMDG:</td>
<td>Not considered dangerous goods</td>
</tr>
<tr>
<td>IATA:</td>
<td>Not considered dangerous goods</td>
</tr>
</tbody>
</table>

SECTION 15 — REGULATORY INFORMATION

**US Federal Regulations**

- **OSHA Hazards:** No data available.
- **Aggravated Medical Conditions:** No data available.
- **Symptoms of Overexposure:**
  - **Inhalation:** No data available.
  - **Skin:** No data available.
  - **Eyes:** No data available.
  - **Ingestion:** No data available.
- **SARA 302 Components:** None present or none present in regulated quantities.
- **SARA 313 Components:** None present or none present in regulated quantities.
- **SARA 311/312 Hazards:** No data available.

**US State Regulation:**

- **California Prop. 65:** No ingredients regulated by CA Prop 65 present.
- **New Jersey & Community RTK:** Component (Water); CAS No (7732-18-5)
- **Massachusetts RTK:** No ingredients regulated by MS Right to Know Act present.
- **Pennsylvania RTK:** Component (Water); CAS No (7732-18-5)
- **Rhode Island RTK:** No ingredients regulated by RI Right to Know Act present.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing MSDS**

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**Abbreviations and acronyms:**

- **ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- **IMDG:** International Maritime Code for Dangerous Goods
- **DOT:** US Department of Transportation
- **IATA:** International Air Transport Association
- **CAS:** Chemical Abstracts Service (division of the American Chemical Society)
- **NFPA:** National Fire Protection Association (USA)
- **HMIS:** Hazardous Materials Identification System (USA)
- **LC50:** Lethal concentration, 50 percent
- **LD50:** Lethal dose, 50

* Data compared to the previous version altered.