

## MATERIAL SAFETY DATA SHEET

<b>Product</b>	
<b>Item #</b>	<b>Title</b>
EB-TDK-Preps	EB Pure Tissue DNA Kit
<b>Components</b>	
TDK-BL-Preps-PC	EB-TDK BL Buffer
TDK-TL-Preps-PC	EB-TDK TL Buffer
TDK-HB-Preps-PC	EB-TDK HBC Buffer
TDK-DWB-Preps-PC	EB-TDK DNA Wash Buffer
TDK-E-Preps-PC	EB-TDK Elution Buffer
TDK-OBP-Preps-PC	EB-TDK OB Protease Solution

# MATERIAL SAFETY DATA SHEET

**Product Title: EB-TDK BL Buffer**

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Title:** EB-TDK BL Buffer  
**Item number:** TDK-BL-Preps-PC  
**Document Number:** PC-MSDS-055 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

Hazardous Ingredients ( <i>specific</i> )	%	CAS Number
Guanidine Hydrochloride	50-100%	50-01-1

## SECTION 3 — HAZARDS IDENTIFICATION

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



**Hazard pictograms:**

**Signal Word:** Warning

**Hazard statements:** H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled

**Precautionary Statements:** 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.

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

**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 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.

# MATERIAL SAFETY DATA SHEET

**Product Title:** EB- TDK BL Buffer

## 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. Remove contaminated clothing. 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:** Not flammable or combustible.

**Suitable Extinguishing Agents:** CO<sub>2</sub>, extinguishing powder, water spray, or alcohol resistant foam.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), hydrogen chloride gas.

**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:** 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.

**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:** N/A

Product Title: EB- TDK BL Buffer

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

Form: Liquid

Color: Yellow

**Odor:** No data available

**Odor threshold:** No data available

**pH-value at 20 °C (68 °F):** 3.0-5.0

**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:** Hazardous polymerization does not occur.

**Conditions to avoid:** Contact with incompatible materials; excessive heat.

**Incompatible materials:** Strong oxidizing agents, strong acids, inorganic salts, chlorinated compounds.

**Hazardous decomposition products:** Carbon oxides, nitrogen oxides (NO<sub>x</sub>), hydrogen chloride gas.

Product Title: EB- TDK BL Buffer

## 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:

<b>Acute toxicity</b>	<b>GNC</b>
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:** 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.** Product is water soluble and may spread in water systems.

### Results of PBT and vPvB assessment:

<b>PBT:</b>	No data available
<b>vPvB:</b>	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

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK BL Buffer

## 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:** May cause 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: No ingredients regulated by NJ Right to Know Act present.

Massachusetts RTK: No ingredients regulated by MA Right to Know Act present.

Pennsylvania RTK: No ingredients regulated by PA Right to Know Act present.

Rhode Island RTK: No ingredients regulated by RI Right to Know Act present

## 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.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB-TDK TL Buffer**

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Title:** EB-TDK TL Buffer  
**Item number:** TDK-TL-Preps-PC  
**Document Number:** PC-MSDS-056 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

Hazardous Ingredients ( <i>specific</i> )	%	CAS Number
Mixture of Non-Hazardous Substances		

## SECTION 3 — HAZARDS IDENTIFICATION

**Labeling according to Regulation (EC) No 1272/2008:** Void  
**Hazard pictograms:** Not Applicable  
**Signal Word:** Not Applicable  
**Hazard statements:** Not a hazardous substance or mixture  
**Precautionary Statements:** Not Applicable.

**Hazard Classification:**  
**OSHA Hazard Overview:** Not Applicable  
**Health Hazards:**

Acute Toxicity, oral	Not Applicable
Acute Toxicity, inhalation	Not Applicable
Acute Toxicity, dermal	Not Applicable
Acute Aquatic Toxicity	Not Applicable
Chronic Aquatic Toxicity	Not Applicable

**Potential Health Effects:** Aggravated Medical Conditions: Not Applicable  
 Symptoms of Overexposure:  
 Inhalation: No Data Available.  
 Skin: No Data Available.  
 Eyes: No Data Available.  
 Ingestion: 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 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.

# MATERIAL SAFETY DATA SHEET

**Product Title:** EB- TDK TL Buffer

## 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:** CO<sub>2</sub>, 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, cool, and well-ventilated place.

**Incompatible Products:** Not Applicable.

## 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- TDK TL 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:** Not Applicable.

**Conditions to avoid:** Not Applicable.

**Incompatible materials:** Not Applicable.

**Hazardous decomposition products:** Not Applicable.

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK TL 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.

**Aspiration Hazard:** 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. 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

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK TL Buffer

## 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:** 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

## 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.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB-TDK HBC Buffer**

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Title:** EB-TDK HBC Buffer  
**Item number:** TDK-HB-Preps-PC  
**Document Number:** PC-MSDS-057 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

Hazardous Ingredients ( <i>specific</i> )	%	CAS Number
Guanidine Hydrochloride	50-100%	50-01-1

## SECTION 3 — HAZARDS IDENTIFICATION

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



**Hazard pictograms:**

**Signal Word:** Warning

**Hazard statements:** H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled

**Precautionary Statements:** 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.

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

**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 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.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK HBC Buffer**

## 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:** Not flammable or combustible.

**Suitable Extinguishing Agents:** CO<sub>2</sub>, extinguishing powder, water spray, or alcohol resistant foam.

**Hazardous Combustion Products:** Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), hydrogen chloride gas.

**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:** 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.

**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:** N/A

Product Title: EB- TDK HBC 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):** 3.0-5.0

**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:** Hazardous polymerization does not occur.

**Conditions to avoid:** Contact with incompatible materials; excessive heat.

**Incompatible materials:** Strong oxidizing agents, strong acids, inorganic salts, chlorinated compounds.

**Hazardous decomposition products:** Carbon oxides, nitrogen oxides (NO<sub>x</sub>), hydrogen chloride gas.

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK HBC Buffer

## 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	GNC
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:** 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.** 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

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK HBC Buffer

## 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:** May cause 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: No ingredients regulated by NJ Right to Know Act present.

Massachusetts RTK: No ingredients regulated by MA Right to Know Act present.

Pennsylvania RTK: No ingredients regulated by PA Right to Know Act present.

Rhode Island RTK: No ingredients regulated by RI Right to Know Act present

## 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.



# MATERIAL SAFETY DATA SHEET

**Product Title: EB-TDK DNA Wash Buffer**

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Title:** EB-TDK DNA Wash Buffer  
**Item number:** TDK-DWB-Preps-PC  
**Document Number:** PC-MSDS-058 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

Hazardous Ingredients ( <i>specific</i> )	%	CAS Number
Mixture of Non-Hazardous Substances		

## SECTION 3 — HAZARDS IDENTIFICATION

**Labeling according to Regulation (EC) No 1272/2008:** Void  
**Hazard pictograms:** Not Applicable  
**Signal Word:** Not Applicable  
**Hazard statements:** Not a hazardous substance or mixture  
**Precautionary Statements:** Not Applicable.

**Hazard Classification:**  
**OSHA Hazard Overview:** Not Applicable  
**Health Hazards:**

Acute Toxicity, oral	Not Applicable
Acute Toxicity, inhalation	Not Applicable
Acute Toxicity, dermal	Not Applicable
Acute Aquatic Toxicity	Not Applicable
Chronic Aquatic Toxicity	Not Applicable

**Potential Health Effects:** Aggravated Medical Conditions: Not Applicable  
 Symptoms of Overexposure:  
 Inhalation: No Data Available.  
 Skin: No Data Available.  
 Eyes: No Data Available.  
 Ingestion: 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 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.

## MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK DNA Wash Buffer**

## 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:** CO<sub>2</sub>, 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, cool, and well-ventilated place.

**Incompatible Products:** Not Applicable.

## 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- TDK 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:** Not Applicable.

**Conditions to avoid:** Not Applicable.

**Incompatible materials:** Not Applicable.

**Hazardous decomposition products:** Not Applicable.

**Product Title: EB- TDK 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.

**Aspiration Hazard:** 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. 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

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK DNA Wash Buffer

## 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:** 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

## 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.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB-TDK Elution Buffer**

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Title:** EB-TDK Elution Buffer  
**Item number:** TDK-E-Preps-PC  
**Document Number:** PC-MSDS-059 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

Hazardous Ingredients ( <i>specific</i> )	%	CAS Number
Mixture of Non-Hazardous Substances		

## SECTION 3 — HAZARDS IDENTIFICATION

**Labeling according to Regulation (EC) No 1272/2008:** Void  
**Hazard pictograms:** Not Applicable  
**Signal Word:** Not Applicable  
**Hazard statements:** Not a hazardous substance or mixture  
**Precautionary Statements:** Not Applicable.

**Hazard Classification:**  
**OSHA Hazard Overview:** Not Applicable  
**Health Hazards:**

Acute Toxicity, oral	Not Applicable
Acute Toxicity, inhalation	Not Applicable
Acute Toxicity, dermal	Not Applicable
Acute Aquatic Toxicity	Not Applicable
Chronic Aquatic Toxicity	Not Applicable

**Potential Health Effects:** Aggravated Medical Conditions: Not Applicable  
 Symptoms of Overexposure:  
 Inhalation: No Data Available.  
 Skin: No Data Available.  
 Eyes: No Data Available.  
 Ingestion: 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 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.

## MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK Elution Buffer**

## 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:** CO<sub>2</sub>, 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, cool, and well-ventilated place.

**Incompatible Products:** Not Applicable.

## 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- TDK Elution 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):** 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:** Not Applicable.

**Conditions to avoid:** Not Applicable.

**Incompatible materials:** Not Applicable.

**Hazardous decomposition products:** Not Applicable.



## MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK Elution 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.

**Aspiration Hazard:** 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. 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

## MATERIAL SAFETY DATA SHEET

Product Title: EB- TDK Elution Buffer

## 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:** 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

## 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.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB-TDK OB Protease Solution**

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Title:** EB-TDK OB Protease Solution  
**Item number:** TDK-OBP-Preps-PC  
**Document Number:** PC-MSDS-060 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

Hazardous Ingredients ( <i>specific</i> )	%	CAS Number
Glycerol	30-60%	56-81-5
Proteinase K	1-5%	39450-01-6

## SECTION 3 — HAZARDS IDENTIFICATION

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



**Hazard pictograms:**

**Signal Word:** Danger

**Hazard statements:** H316 Causes mild skin irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Precautionary Statements:** P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 In case of inadequate ventilation, wear respiratory protection.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a comfortable position for breathing.

P332 + P313 IF SKIN IRRITATION OCCURS: Get medical advice/attention.

P342 + P311 IF EXPERIENCING RESPIRATORY SYMPTOMS: Call a POISON CENTER or doctor/physician.

**Hazard Classification:**

**OSHA Hazard Overview:** Not Applicable

**Health Hazards:** Skin irritation

Category 3

Respiratory Irritation

Category 1

**Potential Health Effects:**

Aggravated Medical Conditions:

Symptoms of Overexposure:

Inhalation: May cause sensitization by inhalation.

Skin: May cause mild skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

**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 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.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK OB Protease Solution**

## SECTION 4 — FIRST AID MEASURES

**Description of first aid measures**

**General information:** Exit to a safe area. Consult a physician. Show this SDS to the doctor in attendance.

**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:** 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:** CO<sub>2</sub>, extinguishing powder, water spray, or alcohol resistant foam.

**Hazardous Combustion Products:** Carbon oxides, nitrogen oxides.

**Protective Equipment for Firefighters:** Wear NIOSH-approved self-contained breathing apparatus if necessary.

**Further Information:** Not Applicable.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear personal protective equipment. Avoid aerosolization. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental Precautions:** Do not let product enter drains.

**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. Keep waste in suitable, closed containers for disposal.

## SECTION 7 — HANDLING AND STORAGE

**Precautions for Safe Handling:** Avoid contact with skin and eyes. Avoid inhalation of vapors or mist.

**Conditions for safe storage:** Store at 2-8°C. Keep container tightly closed in a dry and well-ventilated place.

**Incompatible Products:** Not Applicable.

## 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:**

<u>Component</u>	<u>CAS No.</u>	<u>Value</u>	<u>Control Parameters</u>	<u>Basis</u>
Glycerol	56-81-5	PEL (total dust)	15 mg/m <sup>3</sup>	USA. OSHA Table Z-1
		PEL (respirable fraction)	5 mg/m <sup>3</sup>	USA. OSHA Table Z-1
		TWA	5 mg/m <sup>3</sup>	USA. Cal/OSHA Table Z-1

**Product Title: EB- TDK OB Protease Solution**

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

Form: Liquid  
Color: Slightly Yellow

**Odor:** No data available

**Odor threshold:** No data available

**pH-value at 20 °C (68 °F):** No data available

**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:** Not Applicable.

**Conditions to avoid:** Not Applicable.

**Incompatible materials:** Not Applicable.

**Hazardous decomposition products:** Not Applicable.

# MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK OB Protease Solution**

## SECTION 11 — TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure:

Inhalation: May cause sensitization by inhalation.  
 Ingestion: May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.  
 Skin: May cause mild skin irritation.  
 Eyes: May cause eye irritation.

### Information on toxicological effects:

Acute toxicity	Glycerol	Proteinase K
Oral LD50	12,600 mg/kg (Rat)	No data available
Inhalation LC50	>570 mg/m <sup>3</sup> (Rat)	No data available
Dermal LD50	>10,000 mg/kg (Rabbit)	No data available

**Skin corrosion/irritation:** Glycerol - Mild skin irritation, 24 hours (rabbit).

**Serious eye damage/irritation:** Glycerol - Mild eye irritation, 24 hours (rabbit).

**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.

**Aspiration Hazard:** 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:

Toxicity to Fish LC50: > 5,000 mg/L *Carassius auratus* (goldfish)  
 44,000 mg/L *Pimephales promelas* (fathead minnow)  
 67,500 mg/L *Oncorhynchus mykiss* (rainbow trout)  
 >100,100 mg/L Other Fish

**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. 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

## MATERIAL SAFETY DATA SHEET

**Product Title: EB- TDK OB Protease Solution**

## 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:** Respiratory sensitizer, irritant.

**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: Chronic health hazard.

**US State Regulation:**

California Prop. 65: No ingredients regulated by CA Prop 65 present.

Massachusetts RTK: Glycerol (CAS No. 56-81-5)

Pennsylvania RTK: Water (CAS No. 7732-18-5); Glycerol (CAS No. 56-81-5)

Rhode Island RTK: Water (CAS No. 7732-18-5); Glycerol (CAS No. 56-81-5)

## SECTION 16 — OTHER INFORMATION

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