



SAFETY DATA SHEET

Issue date 30 May 2024

Version 4

1. IDENTIFICATION

| | |
|-------------------------|---|
| Product name | Enzyme Combo |
| Product No | 500 |
| Recommended use | Nucleic acid amplification |
| Supplier Address | DNA Polymerase Technology Inc. 1508 South Grand Blvd. Saint Louis MO 63014 USA |
| Phone Number | 314 771 5566 |
| Fax | 314 771 5581 |
| E-mail address | enzyme@klentaq.com |
| Emergency Phone | 512 289 6324 |

2. HAZARDS IDENTIFICATION

Classification Not a hazardous substance or mixture

GHS Label elements Not a hazardous substance or mixture

Hazard Statement

The product contains no substances which at their given concentration, are known to be hazardous to health.

Hazards not otherwise classified (HNOC) None

3.COMPOSITION/INFORMATION ON INGREDIENTS

Enzymes

| Ingredient | % by weight | CAS # |
|--|-------------|-----------|
| Glycerol HOCH ₂ CH(OH)CH ₂ OH | 63 | 56-81-5 |
| Ammonium sulfate (NH ₄) ₂ SO ₄ | 1.9 | 7783-20-2 |
| Tris HCl NH ₂ C(CH ₂ OH) ₃ . HCl Tris(hydroxymethyl)aminomethane hydrochloride | <1 | 1185-53-1 |
| 2-Mercaptoethanol HSCH ₂ CH ₂ OH β-mercaptoethanol, BME | <1 | 60-24-2 |
| Brij® 58 HO(CH ₂ CH ₂ O) ₂₀ C ₁₆ H ₃₃ Polyethylene glycol hexadecyl ether | <1 | 9004-95-9 |
| EDTA (HO ₂ CCH ₂) ₂ NCH ₂ CH ₂ N(CH ₂ CO ₂ H) ₂ Ethylenediaminetetraacetic acid | <1 | 60-00-4 |
| Variable DNA Polymerases | <1 | N/A |

10x KlenTaq1, Taq Mutant, and KlenTaq Mutant Reaction Buffers

| Ingredient | % by weight | CAS # |
|--|-------------|-----------|
| Tris HCl NH ₂ C(CH ₂ OH) ₃ . HCl Tris(hydroxymethyl)aminomethane hydrochloride | 6.1 | 1185-53-1 |
| Ammonium sulfate (NH ₄) ₂ SO ₄ | 1.4 | 7783-20-2 |
| Brij® 58 HO(CH ₂ CH ₂ O) ₂₀ C ₁₆ H ₃₃ Polyethylene glycol hexadecyl ether | <1 | 9004-95-9 |
| Magnesium Chloride MgCl ₂ | <1 | 7786-30-3 |

10x ZipTaq Reaction Buffer

| Ingredient | % by weight | CAS # |
|--------------|-------------|--------------|
| Trade Secret | 6.1 | Trade Secret |
| Trade Secret | 1.4 | Trade Secret |
| Trade Secret | <1 | Trade Secret |
| Trade Secret | <1 | Trade Secret |

4.FIRST AID MEASURES

First Aid Instructions

| | |
|---------------------|--------------------------------|
| Inhalation | Remove to fresh air. |
| Skin contact | Wash skin with soap and water. |
| Eye contact | Flush eyes with water. |
| Ingestion | Rinse mouth with water. |

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

Recommendations for medical care Treat symptomatically.

5.FIRE-FIGHTING MEASURES

Suitable extinguishing equipment

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide, as indicated by local circumstances and the surrounding environment.

Specific hazards arising from the chemical

No information available.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

6.ACCIDENTAL RELEASE MEASURES

Personal precautions and emergency procedures

Enzyme: Avoid breathing vapors.

Enzyme and Buffer: Use of standard laboratory Personal Protective Equipment (PPE) such as a lab coat, gloves, and safety glasses is recommended. No evacuation, expert consultation, or additional PPE is required for dealing with accidental release.

Environmental precautions

Do not flush this product down the drain.

Containment and cleanup

Absorb with inert absorbent material and dispose with dry waste.

7.HANDLING AND STORAGE

Precautions for safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage

| | |
|-------------------------------|--|
| Storage temperature | -20° F |
| Storage Conditions | Store in original containers with lids closed. |
| Incompatible materials | unknown |

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

All ingredients with occupational exposure limits are listed below.

| Ingredient | Basis | Control Parameters (TWA PEL) | Concentration in this product (Enzyme) |
|--|-------|---|--|
| Glycerol HOCH ₂ CH(OH)CH ₂ OH CAS 56-81-5 | OSHA | 3 5 mg/m ³ mist, total particulate 5 mg/m ³ mist, respirable fraction | 3 5 mg/m |
| 2-Mercaptoethanol HSCH ₂ CH ₂ OH β-mercaptoethanol, BME CAS 60-24-2 | WEEL | 0.2 ppm Skin | 780 ppm |

Engineering controls

Standard lab safety components such as showers, eyewash stations, and standard ventilation systems are recommended.

Personal protection measures

Use of standard laboratory Personal Protective Equipment (PPE) such as a lab coat, gloves, and safety glasses is recommended. Keep laboratory well ventilated. Handle product in accordance with good industrial hygiene and safety practice.

9.PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------------|--------------------------------------|
| Physical state | liquid |
| Appearance | colorless/cloudy |
| Odor | none/mild |
| Vapor pressure | No information available |
| pH | Enzymes 8.5, Buffers Variable |
| Relative density | No information available |
| Melting point / freezing point | No information available |
| Water solubility | No information available |
| Solubility in other solvents | No information available |
| Boiling point / boiling range | No information available |
| Flash point | No information available |
| Evaporation rate | No information available |
| Flammability (solid, gas) | No information available |
| Partition coefficient | No information available |
| Auto-ignition temperature | No information available |
| Decomposition temperature | No information available |
| Viscosity | No information available |

10.STABILITY AND REACTIVITY

Reactivity No data available.

Chemical stability Stable under recommended storage conditions.

Other **Possibility of hazardous reactions**
No hazardous reactions are known or expected. The product is not known to react or polymerize resulting in excess pressure, heat, or any other hazardous conditions.

Conditions to avoid

None

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

None are known or expected.

11. TOXICOLOGICAL INFORMATION**Likely routes of exposure****Inhalation** Avoid breathing vapors or mists. May cause irritation of respiratory tract.**Ingestion** Avoid ingestion.**Skin contact** Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.**Eye contact** Avoid eye contact. May cause redness and irritation.**Delayed, immediate, or chronic effects from short and long-term exposure** None are known or expected.**Numerical measures of toxicity****Enzymes**

| Ingredient | % by weight | CAS # | LD50 |
|--|-------------|-----------|--|
| Glycerol HOCH ₂ CH(OH)CH ₂ OH | 63 | 56-81-5 | Oral (rat) 27,200 mg/kg Dermal (rabbit) > 10,000 mg/kg |
| Ammonium sulfate (NH ₄) ₂ SO ₄ | 1.9 | 7783-20-2 | Oral (rat) 4,250 mg/kg Dermal (rat) 2,000 mg/kg |
| Tris HCl NH ₂ C(CH ₂ OH) ₃ · HCl Tris(hydroxymethyl)aminomethane hydrochloride | <1 | 1185-53-1 | Oral (rat) >5,000 mg/kg Dermal (rat) >5,000 mg/kg |
| 2-Mercaptoethanol HSCH ₂ CH ₂ OH β-mercaptoethanol, BME | <1 | 60-24-2 | Oral (mouse) 190 mg/kg Inhalation (rat) 2.05 mg/L at 4 hours Dermal (rabbit) 112-224 mg/kg |
| Brij® 58 HO(CH ₂ CH ₂ O) ₂₀ C ₁₆ H ₃₃ Polyethylene glycol hexadecyl ether | <1 | 9004-95-9 | Oral (rat) 2,500 mg/kg |
| EDTA (HO ₂ CCH ₂) ₂ NCH ₂ CH ₂ N(CH ₂ CO ₂ H) ₂ Ethylenediaminetetraacetic acid | <1 | 60-00-4 | Oral (rat) 4,500 mg/kg |
| Variable DNA Polymerases | <1 | N/A | No information |

10x Klentaq1, Taq Mutant, and Klentaq Mutant Reaction Buffers

| Ingredient | % by weight | CAS # | LD50 |
|--|-------------|-----------|--|
| Tris HCl NH ₂ C(CH ₂ OH) ₃ · HCl Tris(hydroxymethyl)aminomethane hydrochloride | 6.1 | 1185-53-1 | Oral (rat) >5,000 mg/kg Dermal (rat) >5,000 mg/kg |
| Ammonium sulfate (NH ₄) ₂ SO ₄ | 1.4 | 7783-20-2 | Oral (rat) 4,250 mg/kg Dermal (rat) 2,000 mg/kg |
| Brij® 58 HO(CH ₂ CH ₂ O) ₂₀ C ₁₆ H ₃₃ Polyethylene glycol hexadecyl ether | <1 | 9004-95-9 | Oral (rat) 2,500 mg/kg |
| Magnesium Chloride MgCl ₂ | <1 | 7786-30-3 | Oral (rat) >5,000 mg/kg Dermal (rat) >2,000 mg/kg |

10x ZipTaq Reaction Buffer

| Ingredient | % by weight | CAS # | |
|--------------|-------------|--------------|--|
| Trade Secret | 6.1 | Trade Secret | Oral (rat) >5,000 mg/kg Dermal (rat) >5,000 mg/kg |
| Trade Secret | 1.4 | Trade Secret | Oral (rat) 4,250 mg/kg Dermal (rat) 2,000 mg/kg |
| Trade Secret | <1 | Trade Secret | Oral (rat) 2,500 mg/kg |
| Trade Secret | <1 | Trade Secret | Oral (rat) >5,000 mg/kg Dermal (rat) >2,000 mg/kg |

Symptoms of exposure

No information available.

Potential carcinogen status

| | |
|----------------------------------|---|
| NTP Report on Carcinogens | Not a known or anticipated carcinogen |
| IARC Monographs | Not a probable, possible, or confirmed carcinogen |
| OSHA | Not listed |

12.ECOLOGICAL INFORMATION

Ecotoxicity

Marine pollutant: Components of this product known to be toxic to fish, aquatic invertebrates, algae, and/or bacteria are listed below.

| Component | Fish | Aquatic Invertebrates | Fresh water Algae | Bacteria |
|--|--|--|-----------------------------|--|
| Ammonium sulfate (NH ₄) ₂ SO ₄ CAS 7783-20-2 | LC50 (rainbow trout) 53 mg/L at 96 hours | EC50 (water flea) 121.7 mg/L at 48 hours | ErC50 2,700 mg/L at 18 days | EC50 (activated sludge) 1,618 mg/L at 30 minutes |
| Glycerol HOCH ₂ CH(OH)CH ₂ OH CAS 56-81-5 | LC50 (rainbow trout) 54,000 mg/L at 96 hours | -- | -- | -- |

| | | | | |
|---|---|--|---------------------------|--|
| 2-Mercaptoethanol HSCH ₂ CH ₂ OH β-mercaptoethanol, BME, CAS 60-24-2 | LC50 (golden orfe) 37 mg/L at 96 hours | EC50 (water flea) 0.4 mg/L at 48 hours | ErC50 19 mg/L at 72 hours | EC50 (Pseudomonas putida) 113 mg/L at 17 hours |
| EDTA (HO ₂ CCH ₂) ₂ NCH ₂ CH ₂ N(CH ₂ CO ₂ H) ₂ Ethylenediaminetetraacetic acid CAS 60-00-4 | LC50 (bluegill sunfish) 41 mg/L at 96 hours | EC50 (Water flea) 625 mg/L at 24 hours | -- | -- |

Persistence and degradability

Glycerol (CAS 56-81-5) is 90% readily biodegradable.
2-Mercaptoethanol (CAS 60-24-2) is 69% biodegradable in 60 days
EDTA (CAS 60-00-4) is 0-20% biodegradable in 20 days
No information available about other components.

Bioaccumulation

EDTA (CAS 60-00-4) 80 ug/L Bluegill sunfish in 28 days
No information available about other components

Mobility from soil to groundwater

No information available

Other adverse effects

No information available

13.DISPOSAL CONSIDERATIONS

Disposal guidelines Dispose with dry waste, do not flush down drains. Refer to Section 8 for PPE recommendations.

14.TRANSPORT INFORMATION

DOT Not regulated

15.REGULATORY INFORMATION

US Federal Regulations

SARA 311/312 Hazards

| Chemical Name | CAS # | SARA 311/312 Hazards |
|---|---------|----------------------------------|
| 2-Mercaptoethanol HSCH ₂ CH ₂ OH β-mercaptoethanol, BME | 60-24-2 | Fire Hazard, Acute Health Hazard |

SARA 313

The following product components are subject to reporting requirements:

| Chemical Name | CAS # | SARA 313 Threshold Value | Concentration in this product (Enzyme) |
|------------------|-----------|--------------------------|--|
| Ammonium sulfate | 7783-20-2 | 1.00% | 1.90% |

US State Regulations

California Proposition 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts Right To Know Components

Ammonium sulphate CAS-No. 7783-20-2

Pennsylvania Right To Know Components

Polyethylene glycol hexadecyl ether CAS-No. 9004-95-9

Ammonium sulphate CAS-No. 7783-20-2

Magnesium chloride CAS-No. 7786-30-3

New Jersey Right To Know Components

Polyethylene glycol hexadecyl ether CAS-No. 9004-95-9

Ammonium sulphate CAS-No. 7783-20-2

Magnesium chloride CAS-No. 7786-30-3

16.OTHER INFORMATION

This document was prepared on 30May2024

Disclaimer

IMPORTANT: The information in this SDS is provided in good faith based on our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind and we make no warranties or merchantability or fitness for a particular purpose. This information relates only to the designated product as shipped and may not be valid if the product is used in combination with any other materials or is not used in accordance with our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since conditions of use of the product are not under the control of DNA Polymerase Technology, it is the duty of the buyer/user to determine the necessary conditions for the safe use of the product. DNA Polymerase Technology will not be liable for any damages resulting from handling or contact with the product.

**End of Safety
Data Sheet**