Material Safety Data Sheet

According to Directives 91/155/EEC and 1999/45/EC

Issue date: November 2010

Alkaline Phosphatase (*E. coli*), 200 U

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance or preparation

Catalogue references: MB01801

Product name: **Alkaline Phosphatase (*E. coli*), 200 U**

Company/undertaking identification

NZYTech, Lda., Estrada do Paço do Lumiar, Campus do Lumiar, Edifício E – R/C,

1649-038 Lisboa, Portugal, Tel. +351.213643514, Fax +351.217151168, www.nzytech.com

Emergency telephone number

INEM, Centro de Informação Anti-Venenos, Rua Infante D. Pedro, 8

1749-075 Lisboa, Portugal, Tel. +351.217950143/44/46

Outside Portugal (PT): Call your regional Poisons Information Service or call local Life Saving Service.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: Solution, consisting of the following ingredients:

Ingredient name	CAS number	EC number	Classification
Glycerol	56-81-5	200-289-5	Xi; R36/37/38

Other ingredients: Ingredients not listed here are not dangerous or their concentrations do not exceed the limits specified in the EU directive 1999/45/EC.

See section 16 for the full text of the R phrases.

Occupational exposure limits, if available, are listed on section 8.

3. HAZARDS IDENTIFICATION

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification: Xi; R36/37/38.

Human health hazards: Irritating to eyes, respiratory system and skin.

See section 11 for more detailed information on health effects and symptoms.

4. FIRST-AID MEASURES

Inhalation: Follow standard care for a respiratory emergency as necessary. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion: If swallowed, get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Skin contact: Follow standard care for skin contact as needed. Immediately wash thoroughly with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms develop. Wash clothing and shoes before reuse, or discard in a manner which limits further exposure.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation persists.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to mouth resuscitation.

See section 11 for more detailed information on health effects and symptoms.

5. FIRE-FIGHT MEASURES

Extinguishing media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Special exposure hazards: No risks are involved.

Special protective equipment for fire-fighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Put on appropriate personal protective equipment (see section 8).

Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soils, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up: Remove spillages by mopping with an absorbent cloth. Flush remainder with plenty of water. Disposal though sanitation landfill or incineration in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

Handling: The substances should be handled with care and under precautions to avoid inhalation. Airborne dusts can develop during spillage, material transfer or vigorous stirring of solutions. Any operation which might create dust should take place in areas that are provided with adequate exhaust or other forms of mechanical control system. Avoid direct contact with skin.

Storage: The product should be stored at -20 °C, and it will remain stable up to 3 years if stored as specified.

Packaging materials – recommended: Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection: Respirator approved for solid and liquid particulates, including dusts and mists.

Hand protection: Wear appropriate protective gloves (rubber or vinyl) to prevent skin exposure.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Clothing: Wear lab coat or overalls

Other information: Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state: Liquid.

Colour: Colourless.

Odour: Odourless.

Odour threshold: The lowest known value is 4400 pp (Glycerol).

Important health, safety and environmental information

pH: 7.5 [Conc. (% w/w): 100%].

Boiling point: The lowest known value is 100 °C (212 °F) (Water). Weighted average: 195.48 °C (383.9 °F).

Melting point: May start to solidify at 20 °C (68 °F): glycerol. Weighted average: 10.05 °C (50.1 °F).

Explosive properties: Not considered to be a product presenting a risk of explosion.

Vapour pressure: The highest known value is 3.2 kPa (23.8 mm Hg) (at 20 °C) (Water). Weighted average: 1.59 kPa (11.93 mm Hg) (at 20 °C).

Relative density: The only known value is 1.261 (Water = 1) (Glycerol).

Solubility: Easily soluble in cold and hot water, methanol and acetone.

Viscosity: Kinematics: the highest known value is 1412 cSt (Glycerol).

Vapour density: the highest known value is 3.1 (air = 1) (Glycerol).

Evaporation rate (butyl acetate = 1): 0.36 (water) compared with Butyl acetate.

10. STABILITY AND REACTIVITY

Stability: The product is stable at -20 °C for three years.

Materials to avoid: None.

11. TOXICOLOGICAL INFORMATION

Potential acute health effects

Inhalation: Irritating to respiratory system.

Ingestion: No known significant effects or critical hazards.

Skin contact: Irritating to skin.

Eye contact: Irritating to eyes.

Acute toxicity

Product/Ingredient name: Glycerol

Result	species	dose
LD50 Oral	Rat	12600 mg/kg
LD50 Oral	Mouse	4090 mg/kg
LD50 Oral	Guinea pig	7750 mg/kg
LD50 Dermal	Rabbit	>18700 mg/kg

Potential chronic health effects

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Reproductive toxicity: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation: No specific data.

Ingestion: No specific data.

Skin: Adverse symptoms may include the following – irritation and redness.

Eyes: Adverse symptoms may include the following – irritation, watering and redness.

Target organs: Contains material which causes damage to the following organs – kidneys, upper respiratory tract, skin, eye, lens and cornea.

12. ECOLOGICAL INFORMATION

Ecotoxicity data: **Product/Ingredient name:** Glycerol.

Result	Species	exposure
54000 mg/ml	*Oncorhynchus mykiss* (LC50)	96 hours
> 10000 mg/ml	*Daphnia magna* (EC50)	24 hours

Other ecological information

Persistence/Biodegradability: **Product/Ingredient name:** Glycerol.

Aquatic half-life	Photolysis	Biodegradability
-	> 60%; 28 day(s)	Readily

13. DISPOSAL CONSIDERATIONS

Spills and disposal: Spillages should be dealt with immediately. Remove large spillage by vacuum with a high efficiency filter. Flush remainder with plenty of water. Avoid splashing. Provide sufficient ventilation. Wash all contaminated clothing. The generation of waste should be avoided or minimised wherever possible.

Disposal: Sanitation landfill or incineration in accordance with local, state and federal regulations.

14. TRANSPORT INFORMATION

International transport regulations: Not classified.

15. REGULATORY INFORMATION

EU regulations:

Classification and labelling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Hazards symbols:

Xi - Irritant

Risk phrases: R36/37/38 – Irritating to eyes, respiratory system and skin.
Product use: Industrial applications.

Europe inventory: All components are listed or exempted.

Other EU regulations: Not available.

16. OTHER INFORMATION

Notice to reader: The information and recommendations contained herein are to the best of our knowledge reliable. However, nothing herein is to be construed as a warranty or representation in respect of safety in use, suitability efficiency or otherwise, including freedom from patent infringements. Users should make their own tests for their particular purpose. NZYTech cannot accept any liability for any loss, damage or infringement arising from the use of the information or recommendations contained herein.

Material Safety Data Sheet

According to Directives 91/155/CEE and 1999/45/EC

Issue date: November 2010

10× reaction buffer for Alkaline Phosphatase

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance or preparation

Catalogue references: MB01801

Product name: **10× reaction buffer for Alkaline Phosphatase**

Company/undertaking identification

NZYTech, Lda., Estrada do Paço do Lumiar, Campus do Lumiar, Edifício E – R/C,

1649-038 Lisboa, Portugal, Tel. +351.213643514, Fax +351.217151168, www.nzytech.com

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1749-075 Lisboa, Portugal, Tel. +351.217950143/44/46

Outside Portugal (PT): Call your regional Poisons Information Service or call local Life Saving Service.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: Preparation

Ingredient name	CAS number	EC number	Classification
Tris-HCl	77-86-1	201-064-4	Xi; R36/38

Other ingredients: Ingredients not listed here are not dangerous or their concentrations do not exceed the limits specified in the EU directive 1999/45/EC.

See section 16 for the full text of the R phrases.

Occupational exposure limits, if available, are listed on section 8.

3. HAZARDS IDENTIFICATION

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification: Xi; R36/38

Human health hazards: Irritating to eyes and skin.

See section 11 for more detailed information on health effects and symptoms.

4. FIRST-AID MEASURES

Inhalation: Follow standard care for a respiratory emergency as necessary. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion: If swallowed, get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Skin contact: Follow standard care for skin contact as needed. Immediately wash thoroughly with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms develop. Wash clothing and shoes before reuse, or discard in a manner which limits further exposure.

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation persists.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to mouth resuscitation.

See section 11 for more detailed information on health effects and symptoms.

5. FIRE-FIGHT MEASURES

Extinguishing media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Special exposure hazards: No risks are involved.

Special protective equipment for fire-fighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Put on appropriate personal protective equipment (see section 8).

Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soils, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up: Remove spillages by mopping with an absorbent cloth. Flush remainder with plenty of water. Disposal though sanitation landfill or incineration in accordance with local, state and federal regulations.

7. HANDLING AND STORAGE

Handling: The substances should be handled with care and under precautions to avoid inhalation. Airborne dusts can develop during spillage, material transfer or vigorous stirring of solutions. Any operation which might create dust should take place in areas that are provided with adequate exhaust or other forms of mechanical control system. Avoid direct contact with skin.

Storage: The product should be stored at room temperature, and it will remain stable up to 3 years if stored as specified.

Packaging materials – recommended: Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection: Respirator approved for solid and liquid particulates, including dusts and mists.

Hand protection: Wear appropriate protective gloves (rubber or vinyl) to prevent skin exposure.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Clothing: Wear lab coat or overalls

Other information: Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state: Liquid.

Colour: Colourless.

Odour: Odourless.

Important health, safety and environmental information

Explosive properties: Not considered to be a product presenting a risk of explosion.

Solubility: Fully miscible.

Explosive properties: Not considered to be a product presenting a risk of explosion.

10× reaction buffer for Alkaline Phosphatase

10. STABILITY AND REACTIVITY

Stability: The product is stable at room temperature for three years.

Materials to avoid: None.

11. TOXICOLOGICAL INFORMATION

Potential acute health effects

Inhalation: No irritant effect.

Ingestion: Not observed.

Skin contact: No irritant effect.

Eye contact: No irritant effect.

Sensitization: No sensitization effects known.

12. ECOLOGICAL INFORMATION

Environmental effects: Generally not hazardous for water.

13. DISPOSAL CONSIDERATIONS

Spills and disposal: Spillages should be dealt with immediately. Remove large spillage by vacuum with a high efficiency filter. Flush remainder with plenty of water. Avoid splashing. Provide sufficient ventilation. Wash all contaminated clothing. The generation of waste should be avoided or minimised wherever possible.

Disposal: Sanitation landfill or incineration in accordance with local, state and federal regulations.

14. TRANSPORT INFORMATION

International transport regulations: Not classified.

15. REGULATORY INFORMATION

EU regulations:

Classification and labelling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Hazards symbols:

Irritant

Risk phrases: R36/38 – Irritating to eyes and skin.

Product use: Industrial applications.

Other EU regulations: Not available.

16. OTHER INFORMATION

Notice to reader: The information and recommendations contained herein are to the best of our knowledge reliable. However, nothing herein is to be construed as a warranty or representation in respect of safety in use, suitability efficiency or otherwise, including freedom from patent infringements. Users should make their own tests for their particular purpose. NZYTech cannot accept any liability for any loss, damage or infringement arising from the use of the information or recommendations contained herein.