

Material Safety Data Sheet

Product: 10X TG Buffer (Tris-Glycine Buffer)

Date: 12/26/2013

Product code: GB04-1/GB04-4

1 IDENTIFICATION OF SUBSTANCE

Application of the substance / the preparation: Laboratory chemicals

Manufacturer/Supplier:

GMbiolab Co., Ltd.

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2 COMPOSITION, INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Description: Solution, consisting of the following components.

Component	CAS No.	Percent
Tris	77-86-1	3-5
Glycine	56-40-6	10-15

3 HAZARDS IDENTIFICATION

Hazard description (European Union)

Irritant

Information pertaining to particular dangers for man and environment

Irritating to eyes, skin and respiratory tract.

National Fire Protection Association (NFPA ratings scale 0-4)

Health = 1

Fire = 0

Reactivity = 0

4 FIRST AID MEASURES

Eye: Flush with water in an eyewash for at least 15 minutes, holding eyelids open. Remove contact lenses, clean before re-use. Obtain medical attention if symptoms develop (redness, itching, etc.).

Skin: Wash with plenty of soap and water. Obtain medical attention if symptoms develop (redness, itching, etc.). Remove contaminated clothes, wash before re-use.

Inhalation: Remove person to fresh air. Obtain medical attention unless effects are mild and temporary.

Ingestion: Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Get medical aid if irritation or symptoms occur.

Note To Physician: Treat symptomatically.

5 FIRE FIGHTING MEASURES

Flammable: Not flammable.

Flashpoint Deg C: Not available.

Autoignition Temperature Deg C: Not available.

Extinguishing Media: Use means appropriate for surrounding materials.

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Firefighting Techniques/Equipment: Standard turnout gear ("bunker gear"). Positive-pressure self-contained breathing apparatus.

Hazardous Combustion Products: When Sodium Chloride heated to decomposition it emits toxic fumes of Cl^- and Na_2O . When Sodium Citrate heated to decomposition it emits toxic fumes of Na_2O .

6 ACCIDENTAL RELEASE MEASURES

Accidental releases may be subject to special reporting requirements and other regulatory mandates. Refer to Section 8 for personal protection equipment recommendations.

Measures for environmental protection: Dilute with plenty of water. Do not allow to enter sewers/surface or ground water.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

Dispose contaminated material as waste according to item 13.

7 HANDLING AND STORAGE

Storage of some materials is regulated by federal, state, and/or local laws.

Handling Procedures: Provide appropriate exhaust ventilation.

Storage Procedures: Keep receptacle tightly sealed. Stored in a cool, dry, ventilated area.

8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits: No hazardous components

Engineering Controls: Area ventilation is generally adequate. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment:

Skin: Gloves should be used as minimum hand protection.

Eye: Wear appropriate protective eyeglasses or chemical safety goggles

Respiratory: No respiratory protection will be needed under normal industrial operating conditions.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/physical state: Clear to yellowish liquid.

Odor: No odor.

Melting point/Melting range: no data available

Boiling point/Boiling range: 100 °C (212 °F).

Flash point: Not applicable

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Density at 20°C (68°F): Undetermined.

Solubility in / Miscibility with Water: Fully miscible

10 STABILITY AND REACTIVITY

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Dangerous reactions: No dangerous reactions known.

Dangerous products of decomposition: No dangerous decomposition products known.

11 TOXICOLOGICAL INFORMATION

Acute toxicity:

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Primary irritant effect on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: Sensitization possible through inhalation and skin contact.

Additional toxicological information: Irritant, harmful.

12 Ecological Information

No data available. Although not classified as environmentally hazardous, harmful effects cannot be excluded in the event of improper handling or disposal.

13 DISPOSAL CONSIDERATIONS

Water Disposal: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14 TRANSPORT INFORMATION

RID/ADR: Non-hazardous for road transport.

IMDG: Non-hazardous for sea transport.

IATA: Non-hazardous for air transport.

15 REGULATORY INFORMATION

SARA (Superfund Amendment and Reauthorization Act):

Section 313(Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substance Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity:

None of the ingredients is listed.

Carcinogen categories

EPA (Environmental Protection Agency):

None of the ingredients is listed.

IARC (International Agency for Research on Cancer):

None of the ingredients is listed.

NTP (National Toxicology Program):

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH):

None of the ingredients is listed.

MAK (German Maximum Workplace Concentration):

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health):

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients is listed.

Product related hazard informations: The product has been classified and marked in accordance with directives on hazardous materials.

Hazard designation of product:

Harmful

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Risk phrases:

May cause sensitization by inhalation and skin contact.

Safety phrases:

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.

National regulations

Water hazard class: Water hazard class 1 (Self-assessment):

slightly hazardous for water.

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.