

Revision Date: 16.11.2007

Former date:

1. Identification of the Chemical and of the Manufacturer, Importer or Other Undertaking

Identification of the substance or preparation

Trade name: **MuA Transposase, concentrated**Code of the preparation: **F-750C**

Use of the substance or preparation

***In vitro* transposition reactions**

Identification of the manufacturer, importer or other undertaking

Manufacturer, importer, other undertaking: **Finnzymes Oy**

Street address: Keilaranta 16 A

Postcode and post office: 02150 Espoo

Telephone number: +358-9-584121

Telefax: +358-9-58412200

E-mail: fz@finnzymes.fi

Emergency telephone number

HUS 09-471977 HUS Poison Information Centre, or +358-9-4711 (operator), Helsinki, Finland, or your local centre for detoxification.

2. Hazards Identification

Health hazard of the chemical mixture as a whole: No information available. However it is recommended to prevent ingestion and skin contact.

- Tris-HCl: Harmful if swallowed. May cause irritation to skin, eyes and respiratory tract.
- Glycerol: Irritating to eyes, skin and respiratory system.

3. Composition and Information on Ingredients

Description

The concentrations of the following ingredients in the purchased product exceed the limits for which notification is needed according to Regulation (EC) N:o 1907/2006 of the European Parliament and Council. Glycerol is not classified hazardous according to Regulation (EC) N:o 1907/2006 EPC.

Hazardous ingredients:

CAS number or other code	Name of the ingredient	Concentration % w/w	Warning symbol, R phrases and S phrases	Tube containing the ingredient
56-81-5	Glycerol	<56		Buffer solution, Enzyme solution
1185-53-1	Tris-HCl	<2	X _i R: 36,37,38 S: 26,36	Buffer solution

Full chemical name of the ingredient (CAS number: name):

Other information: R and S phrases: see section 16.

4. First Aid Measures

Special instructions: Wearing of gloves and other protective clothing are advised.**Inhalation:** Remove from exposure immediately. Get medical attention if needed.**Skin:** Wash the area of exposure with plenty of water for at least 15 minutes. Remove contaminated clothing, jewellery and shoes immediately. Wash clothing before reuse. Get medical attention if needed.

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Splashes in eyes: Wash the eyes for at least 15 minutes, lifting upper and lower eyelids occasionally until no evidence of chemical remains. Get medical attention if needed.

Ingestion: Seek medical advice. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side.

Information to doctor or other trained persons giving first aid:

5. Fire-Fighting Measures

Suitable extinguishing media: Alcohol resistant foam, CO₂ dry chemical.

Extinguishing media which must not be used for safety reasons:

Special exposure hazards in a fire: Toxic gases and vapors heavier than air may be released if glycerol is involved in a fire. Glycerol decomposes upon heating above 290°C forming corrosive gas (acrolein). Tris-HCl may produce toxic fumes upon decomposition (HCl gas).

Special protective equipment for a fire: Wear full protective clothing and approved self-contained breathing apparatus with full face piece operated in the pressure demand.

Other instructions: Stay upwind and keep away from low areas.

6. Accidental Release Measures

Personal precautions: Wear appropriate personal protective equipment.

Environmental precautions: Avoid heat, flames and other sources of ignition.

Methods for cleaning up:

Tris-HCl: Sweep up, place in sealed container, and hold for waste disposal.

Glycerol: Absorb liquid spills with a dry absorbent.

Other instructions: Ventilate area.

7. Handling and Storage

Handling: Handling and storage in accordance with all current regulations and standards

Storage: Keep separated from incompatible substances. Store in a tightly closed container, in a cool, dry, ventilated area.

8. Exposure Controls/Personal Protection

Technical measures for exposure controls: Use adequate ventilation. Provide access to a safety shower and eye-wash in the immediate work area.

Limit values for workplace air:

TLV values: Glycerol TLV (mist): 10 mg/m³ (TWA) (ACGIH 2006).
HTP 20 mg/m³ / 8h (Finland)

Other information on limit values:

Personal protective equipment

Special instructions for protection and hygiene:

Respiratory protection: If mist or vapors are present above TLV use an approved respirator.

Hand protection: Wear protective, impervious, chemical resistant gloves.

Eye protection: Safety glasses with side shields or goggles.

Skin protection: Wear chemical resistant clothing.

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9. Physical and Chemical Properties

Physical state, color and odor:

Liquid, colorless, odorless. Glycerol: hygroscopic, viscous.

pH: Glycerol: 7.0

Information on changes in the physical state

Boiling point/boiling range: n.a.

Melting point/melting range: n.a.

Decomposition temperature: n.a.

Flash point: n.a.

Flammability (solid/gas): Glycerol: combustible

Autoflammability: n.a.

Explosion hazard: n.a.

Explosive limits
a) lower: n.a.
b) upper: n.a.

Oxidizing properties: n.a.

Vapor pressure: Glycerol: 0.0025 at 50 °C

Relative density: n.a.

Solubility
a) water solubility: soluble
b) fat solubility: n.a.

Partition coefficient (for ingredients): n-octanol/water:

Viscosity:

Other information:

10. Stability and Reactivity

Conditions to avoid:

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Materials to avoid:

Glycerol: Strong oxidizers and concentrated acids. Glycerol has been reported to react violently or explosively with many oxidizers. It can react violently with acetic anhydride, calcium oxychloride, chromium, oxides, alkali metal hydrides and potassium permanganate.

Tris-HCl: Copper, brass, aluminum and oxidizing agents.

Hazardous decomposition products:

Glycerol: Toxic gases and vapors may be released if glycerol is involved in a fire. Glycerol decomposes upon heating above 290°C forming corrosive gas (acrolein).

Tris-HCl: Burning may produce carbon monoxide, carbon dioxide and nitrogen oxides.

11. Toxicological Information

Acute toxicity:

Glycerol LD50 (oral, rat) 12.600 mg/kg

Tris-HCl n.a.

Irritancy and corrosiveness:

Liquid and vapors are irritating to eyes, skin, mucous membranes and by inhalation.

Sensitization:

Subacute, subchronic and prolonged toxicity:

Glycerol: Repeated excessive exposures may cause increased fat levels in the blood. Observations in animals include liver and kidney effects.

Empirical data on effects on humans:

Other information on health effects:

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12. Ecological Information

Persistence in the environment

Biodegradation:

Chemical degradation:

Bioaccumulation:

Mobility:

Toxic effects on organisms

Aquatic toxicity: Glycerol: Substance generally non-hazardous to the water supply.

Other toxicity:

Other information: Keep out of water supplies and sewers.

13. Disposal Conditions

Dispose in accordance with all applicable regulations. Keep out of water supplies and sewers.

14. Transport Information

UN number:

Packaging category:

Land transport

Transport class:

Risk code:

Name according to bill of freight:

Other information:

Sea transport

IMDG class:

Correct technical name:

Other information:

Air transport

ICAO/IATA class:

Correct technical name:

Other information:

15. Regulatory Information

Chemical Safety Assessment: Not required.

Information on the warning label

Letter code of the warning symbol and indications of danger for the preparation:

Names of the ingredients given on the warning label:

R phrases:

S phrases:

Special regulations on certain preparations:

National regulations:

16. Other Information

R phrases used

36: Irritating to eyes

37: Irritating to respiratory system

38: Irritating to skin

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S phrases used

26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

36: Wear suitable protective clothing

Directions for use**Other information**

The information here is believed to be correct as of the date hereof but is provided without warranty of any kind. The recipient of our products is responsible for observing any laws and guidelines applicable.

Additional information available from

Finnzymes Oy

Sources of information used in the compilation of the safety data sheet

MSDS Canadian Centre for Occupational Health and Safety

MSDS US Centre for Occupational Health and Safety

International Chemical Safety Cards

Revisions

16.11.2007: Updated to meet REACH regulation requirements.