



## Safety Data Sheet

#### 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name Ligation high Ver.2

Product Code LGK-201

**SUPPLIER** 

Name TOYOBO Co., Ltd.

Address 2-2-8 Dojima Hama Kita-ku Osaka, 530-8230 Japan

Department Biotech support Department

Emergency Telephone No. +81-6-6348-3786
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Recommended use and Ligation reagent restrictions on use (Reagent for research)

### 2 HAZARDS IDENTIFICATION

Important Hazards Few adverse human health effects are anticipated.

**GHS** Classification

Hazard class and category

Physical Hazards Not classified.

Health Hazards Acute toxicity - oral Classification not possible.

Skin corrosion/Irritation Category 3
Serious eye damage/Eye irritation Category 2B

Environmental Hazards Classification not possible.

Label elements

Pictograms or symbols –

Signal word Warning

Hazard statements Causes mild skin irritation.

Causes eye irritation.

Precautionary statement(s)

Prevention Avoid substance contact. After handling, wash hands with clean Response If skin irritation occurs: Get medical advice / attention. If in eyes:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation

persists: Get medical advice / attention.

#### 3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Product Mixture

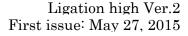
(Substance/Preparation)

Chemical Nature Aqueous solution

Parts Name Main components CAS No. (EC NO.)

Ligation high Ver.2 T4 DNA Ligase (EC 6.5.1.1)

Tris(Hydroxymethyl)aminomethane 77-86-1
Glycerol 56-81-5
Magnesium chloride 7786-30-3
Sodium chloride 7647-14-5
Dithiothreitol 3483-12-3





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Components Contributing to the Hazard

Common Chemical Name

(or Generic Name) Glycerol

Synonyms Glycerin

Chemical formula CH<sub>2</sub>OHCHOHCH<sub>2</sub>OH

CAS No. 56-81-5

Concentration approximately 10%

#### 4 FIRST-AID MEASURES

Inhalation Remove person to fresh air. Call a doctor if you feel unwell.

Skin Contact Wash with clean water, immediately.

Eye Contact Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice  $\slash$  attention.

Ingestion If swallowed: Rinse mouth. Do NOT induce vomiting.

If indisposition continues, seek medical attention.

#### 5 FIRE-FIGHTING MEASURES

Extinguishing Media Water, Carbon Dioxide, Foam, Dry Chemical Powder.

Protection of fire-fighters Fire-fighting should be done from the windward side of fire area.

Fire-fighters should wear proper protective equipment in case of large

scale fire.

### 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions Wear protective gear to avoid eye/skin contact and inhalation.

Environmental Precautions Avoid disposition to the environment.

Methods for Cleaning up Use cloth, paper or anything similar to soak up the solution leaking

out of the container. Take up under vacuum using dust collecting

filter.

#### 7 HANDLING AND STORAGE

HANDLING

Technical Measures Wear protective equipments and avoid contact with eyes and skin.

Precautions Always keeping things tidy and in order, and keep laboratory Clean.

Safe Handling Advice

Avoid substance contact. After handling, wash hands with clean water.

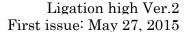
STORAGE

Technical Measures Store in the laboratory bottle.

Storage Conditions Store at about -20°C.

Incompatible Products Oxidizers

Packaging Materials Store in the original package.





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### 8 EXPOSURE CONTROLS/ PERSONAL PROTECTION

ENGINEERING Set up good ventilation and exhaust system in the work area.

Control Parameter

 $\begin{array}{ccc} Limit\ Values & Glycerol \\ JSOH & OEL & Not\ established \\ ACGIH\ TLV & 10mg/m^3 \end{array}$ 

OSHA PEL total dust:15mg/m<sup>3</sup>TWA

respirable fr.: 5mg/m<sup>3</sup>TWA

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection Wear a dust mask.
Hand Protection Chemical safety gloves.
Eye Protection Chemical safety goggles.

Skin and Body Protection Long sleeves to prevent contact with skin.

### 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid over -20°C.

Colour Colourless
Odour None
pH 6.0-9.0

Flash Point Not flammable due to aqueous solution.

Explosion limit Not explosible.

Specific Gravity 1.0-1.2

Soluble in water.

### 10 STABILITY AND REACTIVITY

Stability Stable at -20°C

Possible Hazardous None

Reactions

Conditions to Avoid Strong heat and direct sunlight.

Material to Avoid Strong oxidizers and strong reducers.

Hazardous Decomposition No information available.

Product

## 11 TOXICOLOGICAL INFORMATION

Acute Toxicity No data available.

Local Effects May cause eye and skin irritation. May cause respiratory tract

irritation.

Toxicological information on the component of this product

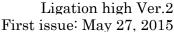
Glycerol

Acute toxicity (LD50) Oral-mouse: 4090mg/kg

Oral-rat: 12.6g/kg

Skin corrosion/Irritation rabbit:500mg/24hr:Mild (Category 3)
Serious eye damage/Eye rabbit:500mg/24hr:Mild (Category 2B)

irritation



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#### 12 ECOLOGICAL INFORMATION

Mobility Soluble in water and diffusible into water environment.

Persistence/Degradability Not available. Bioaccumulation Not available.

#### 13 DISPOSAL CONSIDERATIONS

Waste from Residues Dispose of in accordance with all applicable local and national laws and

regulations.

Contaminated Packaging Dispose of in accordance with all applicable local and national laws and

regulations.

#### 14 TRANSPORT INFORMATION

**International Regulations** 

UN Classification Number Not classified.

Follow all of the laws and regulations in your respective country.

Specific Precautions To prevent packages from breaking, handle with care. Store at about -20°

C when it is transported.

#### 15 REGULATORY INFORMATION

Follow all of the laws and regulations in your country.

#### 16 OTHER INFORMATION

Notice The information in this SDS, to the best of our knowledge, is accurate

and correct. However, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information. The information shall not be taken as being all inclusive and is to be used only a guide. All materials and mixtures may be present unknown hazards and should be used with caution. The SDS is subject to revision

as new information becomes available.