



# FastGene Restriction Enzyme Rsa I

| Cat. No. | Product                           | Content    |
|----------|-----------------------------------|------------|
| FG-RsaI  | FastGene Restriction Enzyme Rsa I | 1000 Units |

## 1. Identity of the substance and the manufacturer

### 1.1. Name of the substances or preparations

FastGene Restriction Enzyme Rsa I

### 1.2. Recommended use of the chemical and restrictions on use

Laboratory research use only.

### 1.3. Name and address of the manufacturer

NIPPON Genetics EUROPE GmbH  
Mariaweilerstraße 28 a  
52349 Düren  
Germany

### 1.4. Emergency telephone contact

+49 2421/554960

## 2. Hazards identification

### 2.1 Classification of Hazards and dangerousness

No relevant classification

### 2.2 Warning article including prevention methods



### **2.2.1 Pictorial symbol**

No information available

### **2.2.2 Category**

No information available

### **2.2.3 Hazards and dangerousness**

No information available

### **2.2.4 Prevention methods**

#### **2.2.4.1 Prevention**

No information available

#### **2.2.4.2 Action**

No information available

#### **2.2.4.3 Store**

No information available

#### **2.2.4.4 Discard**

No information available

## **2.3 Other hazards and dangerousness (NFPA) not included in classification**

### **2.3.1 Health**

1

### **2.3.2 Fire**

1

### **2.3.3 Reactivity**

0



### 3. Composition/information on ingredients

| Material name | Usual name | CAS No. | Amount (%) |
|---------------|------------|---------|------------|
| Glycerin      | Glycerol   | 56-81-5 | 40 ~ 60    |

### 4. First-aid measures

#### 4.1 Eye contact

Take medical action immediately.

Immediately rinse skin and eyes thoroughly with plenty of running water for at least 20 minutes.

#### 4.2 Skin contact

Take medical action immediately.

Immediately rinse skin and eyes thoroughly with plenty of running water for at least 20 minutes.

Remove contaminated clothes and shoes and isolate contaminated area.

Completely wash clothes and shoes before reuse.

#### 4.3 Inhalation

Remove to fresh air.

CPR when there is no breathing

Provide Oxygen when breathing is difficult.

Take medical action immediately.

#### 4.4 Ingestion

Do not provide any food for unconscious person.

#### 4.5 Note to physicians

Take protective action according to the material.

Do not inject adrenalin.



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## 5. Firefighting measures

### 5.1 Proper (improper) fire extinguishing agents

Small fire: dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO<sub>2</sub> (suitable extinguishing agent).

Large fires: water spray / mist, regular foam (suitable extinguishing agent).

High pressure water (improper extinguishing agent).

### 5.2 Specific hazards from chemical compounds

Can be ignited by heat, spark, flame.

Container may explode on heating.

Some can ride, but not easily ignite.

May cause irritation and poisonous gas in case of fire Inhalation of the substance may be harmful.

Some fluids may cause dizziness, suffocation-inducing vapors.

### 5.3 Protective equipment and precautions for fire fighting

Glycerin: No information available.

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Micro particles can ignite fire or explosion therefore remove all the sources of fire.

Stop leaking if it is not dangerous.

Give attention to materials and conditions that should be avoided.

Do not enter the space without proper respirator or respirator until proper air (oxygen concentration 18 ~ 23.5%) is available.

### 6.2 Environmental precautions

Prevent entry into waterways, sewers, basements, and confined spaces.

### 6.3 Containment and cleaning up

In case of small leakage, flush contaminated areas with large amounts of water.



In case of small leakage, absorb with sand and non-combustible material and place in container.

In case of large leakage, make a ditch away from liquid spills.

Put spills into a clean, dry container with clean shovel, loosely closed, then transfer container from leak area.

In case of powder leakage, cover with plastic sheet to prevent spread and keep dry.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Note the substances and conditions to avoid.

Wash thoroughly after handling.

Note the high temperature.

In case of material leakage, reduce the oxygen concentration in the air and cause suffocation in an enclosed space, so be careful not to spill.

Check the oxygen concentration before entering the place because there is a risk of loss of consciousness or death due to oxygen deficiency at high concentration in the air.

Keep this temperature below 20°C because this material evaporates slowly and reaches hazardous concentrations.

Do not spray because it will evaporate faster if sprayed.

### 7.2 Conditions for safe storage

Keep it tightly closed.

Store in a cool, dry place.

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## 8. Exposure controls/personal protection

### 8.1 Exposure standard of chemical compound, biological exposure standard

#### 8.1.1 Domestic regulations

Glycerin: TWA - 10 mg/m<sup>3</sup>



### 8.1.2 ACGIH regulation

Glycerin: TWA - 10 mg/m<sup>3</sup>

### 8.1.3 Biological release regulation

Glycerin: No information applicable

## 8.2 Individual protection equipment

### 8.2.1 Respiratory protection

Use respiratory protection equipment certified by Korea occupational safety and health agency in a release of gas/liquid according to their chemical physical properties.

Use proper filter or half-circled respiratory protection cartridge equipment if the concentration of release material is lower than 100mg/m<sup>3</sup>.

Use proper filter or loose-fitting respiratory protection cartridge equipment such as hood/helmet shape motor operated equipment or continuous flow protection mask if the concentration of release material is lower than 250mg/m<sup>3</sup>.

Use proper filter or full-face cartridge or motor operated half-circled equipment or half circled continuous flow air supply respiratory protection equipment if the concentration of release material is lower than 500mg/m<sup>3</sup>.

Use proper filter or full faced respiratory protection cartridge equipment or hood/helmet type, pressurized mask if the concentration of release material is lower than 10000mg/m<sup>3</sup>.

Use proper filter or auto air supply (SCBA) equipment or pressurized auto air supply (SCBA) respiratory protection equipment if the concentration of release material is lower than 100000mg/m<sup>3</sup>.

### 8.2.2 Eye protection

Use chemical protection glasses and safety glasses.

Install eyewash and emergency shower near work area.

### 8.2.3 Hand protection

Wear suitable chemical resistant gloves.

### 8.2.4 Body protection

Wear suitable chemical resistant clothing.



## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                  |                                                                                                                                                                                    |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appearance - State                               | liquid                                                                                                                                                                             |
| Appearance - Color                               | Dark color to yellow color                                                                                                                                                         |
| Odor                                             | Dull                                                                                                                                                                               |
| Odor Threshold                                   | No information available                                                                                                                                                           |
| pH                                               | Neutral                                                                                                                                                                            |
| Melting point/freezing point                     | 20 °C                                                                                                                                                                              |
| Early boiling point and range                    | 171 °C                                                                                                                                                                             |
| Flashing point                                   | 160 °C ((c.c.))                                                                                                                                                                    |
| Evaporation rate                                 | No information available                                                                                                                                                           |
| Evaporation rate (solid/liquid)                  | Liquid                                                                                                                                                                             |
| Maximum / minimum evaporation or explosion range | 19 / 2.7%                                                                                                                                                                          |
| Steam pressure                                   | 0.0025 mmHg (50°C)                                                                                                                                                                 |
| Solubility                                       | water solubility: 1000 g/L at 25 °C<br>solvent solubility: alcohol, ethyl acetate, ether insolubility, benzene, chloroform, carbon tetrachloride, carbon disulfide, oil ether, oil |
| Vapor density                                    | 3.1 (air=1)                                                                                                                                                                        |
| Specific gravity                                 | 1.2613 (water=1)                                                                                                                                                                   |
| n-octanol/ distribution coefficient              | No information available                                                                                                                                                           |
| Self-ignition temperature                        | 370 °C                                                                                                                                                                             |
| Disassemble temperature                          | 290 °C                                                                                                                                                                             |
| Viscosity                                        | 954 cP (at 25 °C)                                                                                                                                                                  |
| Molecular weight                                 | 92.09                                                                                                                                                                              |

## 10. Stability and reactivity

### 10.1 Chemical stability and possibility of hazardous reactions

Glycerin: No information available



## 10.2 Situation to avoid

Glycerin: No information available

## 10.3 Materials to avoid

Glycerin: No information available

## 10.4 Harmful material produce by degradation

Glycerin: No information available

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# 11. Toxicological information

## 11.1 Information on likely routes of exposure

Glycerin:

Irritation, difficult to breathe, area, vomit, diarrhea, headache, dizziness, Sleep disorder, kidney problem, paralyzed.

Can absorb body by suction.

Can be absorbed by suction and extinguisher.

Through skin, digestive system, can absorb body by inhalation of aerosol.

Able to absorb body by suction of steam.

Can be absorbed by inhalation, skin and digestive system.

## 11.2 Health maleficence information

### 11.2.1 Acute poison

#### 11.2.1.1 Oral

Glycerin: LD50 27200 mg/kg Rat  
rat/LD50/12600mg/kg(IUCLID))

#### 11.2.1.2 Ingestion

Glycerin: LD50 > 10000 mg/kg Rat

#### 11.2.1.3 Inhalation

No information available



### **11.2.2 Skin corrosion or irritant agent**

Glycerin: No irritation on skin

### **11.2.3 Serious eye damage or irritation**

Glycerin: No irritation on eyes

### **11.2.4 Respiratory organ hypersensitiveness**

Glycerin: No information available

### **11.2.5 Skin hypersensitiveness**

Glycerin: No information available

### **11.2.6 Carcinogenic**

#### **11.2.6.1 Occupational safety and health acts**

Glycerin: No information available

#### **11.2.6.2 Employment announcement**

Glycerin: No information available

#### **11.2.6.3 IARC**

Glycerin: No information available

#### **11.2.6.4 OSHA**

Glycerin: No information available

#### **11.2.6.5 ACGIH**

Glycerin: No information available

#### **11.2.6.6 NTP**

Glycerin: No information available

#### **11.2.6.7 EU CLP**

Glycerin: No information available

### **11.2.7 Germ cell mutagenicity**

Glycerin: Many color mammal red blood cell/negative.

### **11.2.8 Reproduction toxicity test**

Glycerin: No information available



#### 11.2.9 Special target poison (1 time exposer)

Glycerin: No information available

#### 11.2.10 Special target poison (long exposer)

Glycerin: rat(inhale): 1-4mg/l epiglottis epithelium

#### 11.2.11 Absorption injurious

Glycerin: No information available

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## 12. Ecological information

### 12.1 Ecotoxicity

#### 12.1.1 Fish

Glycerin: LC50 5000 mg/l 24 h *Carassius auratus*

#### 12.1.2 Crustacean

Glycerin: EC50 > 10000 mg/l 24 h *Daphnia magna* (*Daphnia magna* EC50(24HR)

10000mg/L (US EPA ECOTOX); *Daphnia magna* EC50(24HR) >10000 mg/L (EUIUCLID))

#### 12.1.3 Algae

(LC50(96hr) 77712.039 mg/L)

### 12.2 Residual fungicide and resolvability

#### 12.2.1 Residual fungicide

Glycerin: No information available

#### 12.2.2 Resolvability

Glycerin: No information available

### 12.3 Life enrichment

#### 12.3.1 Enrichment

Glycerin: No expected life enrichment



### **12.3.2 Biodegradability**

Glycerin:

63 % 14-day Fast biodegradability (OECD SIDS),

93 % biodegradability in 30 days (OECD TG 301D) (IUCLID))

## **12.4 Soil**

Glycerin: No information available

## **12.5 Other harmful influences**

Glycerin: Environmental summary - No information on toxicity on aquatic organisms

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# **13. Disposal considerations**

## **13.1 Disposal method**

No information available

## **13.2 Precautions for disposal**

Dispose container and content according to the water control act.

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# **14. Transport information**

## **14.1 IATA**

Glycerin: UN classification information for hazardous substances for transport is not available.

### **14.1.1 Propriety shipping name**

Glycerin: No dangerous good in sense of these transport regulations

### **14.1.2 Hazard class**

Glycerin: No information available

### **14.1.3 Subsidiary class**



Glycerin: No information available

#### **14.1.4 Packing group**

Glycerin: No information available

#### **14.1.5 UN-No**

Glycerin: No information available

#### **14.1.6 Environmental hazards**

Glycerin: No information available

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## **15. Regulatory information**

### **15.1 Regulations of occupational safety and health act**

Glycerin: Exposure standard materials

### **15.2 Regulations of toxic chemicals regulation act**

Glycerin: No information available

### **15.3 Regulations of safety control of dangerous substances act**

Glycerin: 4th class The third kind Petroleum(Receptivity) 4000 L

### **15.4 Regulations of waste control act**

Glycerin: Designated waste

### **15.5 Regulations of other domestic and international act**

#### **15.5.1 Domestic act**

##### **15.5.1.1 Persistent organic pollutants control ac**

Glycerin: No information applicable

#### **15.5.2 Foreign act**

##### **15.5.2.1 American supervision information**



Glycerin: No information applicable

#### **15.5.2.2 CERCLA**

Glycerin: No information applicable

#### **15.5.2.3 EPCRA 302**

Glycerin: No information applicable

#### **15.5.2.4 EPCRA 304**

Glycerin: No information applicable

#### **15.5.2.5 EPCRA 313**

Glycerin: No information applicable

#### **15.5.2.6 American supervision information (Rotterdam agreement material)**

Glycerin: No information applicable

#### **15.5.2.7 American supervision information (Stockholm agreement material)**

Glycerin: No information applicable

#### **15.5.2.8 American supervision information (Montreal protocol material)**

Glycerin: No information applicable

#### **15.5.2.9 EU Classification information (Confirmed classification results)**

Glycerin: No information applicable

#### **15.5.2.10 EU Classification information (Danger expression)**

Glycerin: No information applicable

#### **15.5.2.11 EU Classification information (Safety expression)**

Glycerin: No information applicable



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## 16. Other information

This information is based on our present knowledge. Its objective is to describe the product from the point of view of safety, and no warranty is made other than its characteristics. This information does not absolve the user in any circumstances from observing other Legislative, Regulatory and Administrative requirements applying to the product, and to safety, hygiene and the well-being of the people in the workplace.



**NIPPON GENETICS EUROPE GmbH**  
**Mariaweilerstraße 28 a, 52349 Düren**  
Amtsgericht Düren HRB 4672,  
Bank data UFJ bank Limited: Identification code: 30130700  
Account number: 610762  
Managing Director: Dr. Jürgen Lünzer, Kazuo Yamazaki  
**Value Tax ID: DE 239977252**