FastGene® Scriptase II cDNA Kit (100 rxns)

Cat. No.	Product
LS63	FastGene® Scriptase II cDNA Kit (100 rxns)

1. Identity of the substance and the manufacturer

1.1. Name of the substance or preparation
FastGene® Scriptase II cDNA Kit

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 28a
52349 Düren
Germany

1.4. Emergency telephone contact
+49 2421/554960

2. Hazards identification

2.1. Classification of Hazards and dangerousness
No information available.

2.2. Warning article including prevention methods

2.2.1. Pictograms
No information available

2.2.2. Signal word
No information available

2.2.3. Harmful/dangerous phrases
No information available

2.2.4. Precautionary statements

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.

3. Composition/information about the components

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 runningwater 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
Move to fresh air. Take medical action immediately. CPR when there is no breathing.

4.4. Ingestion
Do not give anything by mouth to an unconscious person. If swallowed, seek medical attention immediately. Wash out your mouth. If the substance is ingested or inhaled, do not perform artificial respiration using themouth-to-mouth method, but use appropriate respiratory medical equipment.

4.5. Note to physicians
Make sure medical personnel know about the substance and take protectivemeasures.

5. In case of fire

5.1. Proper (improper) fire extinguishing agents
When extinguishing fires involving this material, use alcohol foam, carbon dioxide orwater spray. When extinguishing asphyxiation, use dry sand or soil.

5.2. Specific hazards from chemical compounds
Containers may explode when heated. May decompose at high temperatures and produce toxic gases. Some may burn but do not ignite easily. Non-flammable, the material itself does not burn, but may decompose when heated,generating corrosive/toxic fumes.

5.3. Protective equipment and precautions for fire fighting
Extinguish the fire by leaving the area and maintaining a safe distance. Be careful as it may melt and be transported. Dig a trench to dispose of fire water, contain it, and prevent material from scattering. Move containers from fire area if you can do it without risk. In case of a tank fire, extinguish it from the maximum distance or use unmanned fireextinguishing equipment. In case of a tank fire, cool the container with plenty of water even after the fire isextinguished. In case of a tank fire, if there is a high-pitched sound from the pressure relief deviceor if the tank changes color, leave immediately. In case of a tank fire, move away from the engulfed tank. In case of a large-scale tank fire, use unmanned fire extinguishing equipment and, ifnot possible, step aside and let it burn.

6. In case of spillage

6.1. Personal precautions, protective equipment and emergency procedures
Stop leak if it is not dangerous. Wipe up spills immediately and follow precautions in the protective equipment section. Isolate contaminated area. Anyone who does not need to enter or is not wearing protective equipment shouldnot enter. Eliminate all ignition sources. Do not touch broken containers or spills without wearing appropriate protectiveclothing. Cover with plastic sheeting to prevent spread. Be aware of substances and conditions to avoid.

6.2. Environmental precautions
Prevent entry into waterways, drains, basements and confined spaces.

6.3. Containment and cleaning up
Absorb spill with inert material (e.g. dry sand or earth) and place in chemical wastecontainer. Absorb liquid and flush contaminated area with detergent and water.

7. Handling and storage

7.1. Precautions for safe handling

Wash handled area thoroughly after handling. Do not eat, drink or smoke when using this product. Follow all MSDS/label precautions as product residue may remain even aftercontainer is emptied. Use with caution when handling/storing. Open cap carefully before opening. Do not breathe vapors from heated material. Do not enter storage area without adequate ventilation. Be aware of substances and conditions to avoid. Work with reference to engineering controls and personal protective equipment.

7.2. Conditions for safe storage

Store in a locked storage location. Empty drums should be completely drained, properly plugged, and immediately returned to the drum regulator or placed appropriately. Keep away from food and drinks.

8. Exposure controls/personal protection

8.1. Exposure standard of chemical compound, biological exposure standard

8.1.1. Domestic regulations

Glycerin - TWA - 10 mg/m3 glycerin mist

8.1.2. ACGIH regulation

Glycerin - No information applicable

8.1.3. Biological release regulation

Glycerin - No information applicable

8.1.4. Other exposure standards

Glycerin - No information applicable

8.1.5. Appropriate engineering controls

Use process isolation, local exhaust, or other engineering controls to keep air levelsbelow exposure limits. Facilities storing or using this material should be equipped with eyewash facilitiesand safety showers.

8.2. Individual protection equipment

8.2.1. Respiratory protection - Glycerin Mist

Use respiratory protection equipment certified by Korea occupational safety andhealth agency in a release of gas/liquid according to their chemical physicalproperties.

Use proper filter or half-circled respiratory protection cartridge equipment if theconcentration of release material is lower than 100mg/m^3.

Use proper filter or loose-fitting respiratory protection cartridge equipment such ashood/helmet shape motor operated equipment or continuous flow protection mask ifthe concentration of release material is lower than 250mg/m^3.

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

Use proper filter or full faced respiratory protection cartridge equipment orhood/helmet type, pressurized mask if the concentration of release material is lowerthan 10000mg/m^3.

Use proper filter or auto air supply (SCBA) equipment or pressurized auto air supply(SCBA) respiratory protection equipment if the concentration of release material islower than 100000mg/m^3.

8.2.2. Eye Protection

Wear safety glasses or breathable safety glasses to protect your eyes fromvaporous organic substances that can cause eye irritation or other health problems. Install emergency washing facilities (shower type) and eye washing facilities in alocation that is easily accessible to workers.

8.2.3. Body Protection

Wear protective clothing made of appropriate material considering the physical andchemical properties of the chemical.

9. Physical and chemical properties

Appearance	
State	Liquid (viscous)
Colour	No information available
Odour	Unscented
Odor threshold	No information available
pH	Neutral (litmus paper)
Melting point/freezing poin	18.17 °C (about 101.3 kPa, no decomposition)
Early boiling point and range	290 °C (760mmHg)
Flashing Point	199 °C (approx. 101.3 kPa, equilibrium method closed, ISO 2719)
Evaporation rate	No information available
Evaporation rate (solid/liquid)	Not flammable
Maximum/minimum evaporation or explosion range	19 / 2.7%
Steam pressure	0.003 mmHg (50°C)
Solubility	1000000 mg/l (25°C)
Vapor density	1.261 g/mL (20°C, density)
Specific gravity	3.17
n-octanol/ distribution coefficient	-1.75 (log Pow, 25°C)
Self-ignition temperature	370°C
Disassemble temperature	290°C
Viscosity	1412 mPa S (20°C, dynamic viscosity)
Molecular weight	92.09

10. Stability and reactivity

10.1. Chemical stability and possibility of hazardous reactions - Glycerin

May decompose at high temperatures and produce toxic gases. Containers may explode when heated. Some may burn but do not ignite easily. Non-flammable, the material itself does not burn, but may decompose when heated,generating corrosive/toxic fumes.

10.2. Situation to avoid - Glycerin

Ignition sources such as heat, sparks, flames, etc.

10.3. Materials to avoid - Glycerin

Combustible substances, reducible substances

10.4. Harmful material produce by degradation - Glycerin
Corrosive/toxic fumes, Irritating, corrosive, toxic gas

11. Toxicological information

11.1. Information on likely routes of exposure
Glycerin - No informatino available

11.2. Health maleficence information

11.2.1. Acute poison

11.2.1.1. Oral
Glycerin - LD50 27000 mg/kg Rat

11.2.1.2. Ingestion
Glycerin - LD50 45 mg/kg Guinea pig

11.2.1.3. Inhalation
Glycerin - Steam LC50 > 2.75 mg/l 4 hr Rat

11.2.2. Skin corrosion or irritant agent
Glycerin - No irritation as a result of skin corrosion/irritation test using rabbits

11.2.3. Serious eye damage or irritation
Glycerin - Non-irritating, Rabbit, fully reversible

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 - Glyceirn
in vitro - Reverse mutation test using bacteria: negative (*S. typhimurium* TA1535,TA1537, TA98, TA100, regardless of metabolic activity)

11.2.8. Reproduction toxicity test - Glycerin
Glycerin was administered to male and female rats by oral gavage over twogenerations. As a result, there was no effect on growth, reproduction, andreproductive functions through two generations. Glycerin administered to femalerats had no effect on the developmental toxicity of their offspring, rats.

11.2.9. Special target poison (1 time exposer) - Glycerin
Oral: Muscle spasms and epileptic convulsions before death; survivors appearednormal within 2.5 hours after administration. / Hyperemia of the pylorus and smallintestine; pulmonary congestion; Pale Zira; Three animals showed meningealhyperemia. Transdermal: After about 12 hours, the experimental animals (guineapigs) became accustomed to the restrictions of the bandage and began feeding asusual. The group of experimental animals to which large amounts of experimentalsubstances were applied were weakened and dying as their body temperaturedropped. There appears to be no effect at small doses of the test substanceapplied. In conclusion, no skin irritation was observed with the experimental amountapplied to this cotton pad. Inhalation: Acute toxicity (produced by passing airthrough a test substance heated to 200 °C) was determined after 1 or 2 h of exposure to saturated vapors of glycerin. Under study conditions, acute inhalation exposure of rats for 2 hours to saturated vapor generated at 200 °C produced 100% mortality, whereas no mortality was observed for a 1-hour exposure. The nominal concentration is 11.0 mg/L and this study is a condensed aerosol. Therefore, the 1hour LC50 based on nominal concentration was >11.0 mg/L. According to the OECD GHS guidelines, the 1-hour LC50 can be determined by dividing by 4 hoursto determine the 4-hour LC50. Therefore, the calculated 4-hour LC50 value basedon the nominal concentration is > 2.75 mg/L. Additionally, L(Ct) 50 was measuredafter exposure to 1100 mg/L. The L(Ct) 50 of glycerin was 4655 mg min/L.

11.2.10. Special target poison (long exposer) - Glycerin
Oral (chronic): NOAEL=8000~10,000 mg/kg bw, Rat Dermal (subchronic): Result ofdermal exposure in rabbits at a dose level of 4.0 ml/kg for 8 hours/day, 5 days/weekfor 45 weeks, No significant effect, Rabbit Inhalation (subchronic): NOAEL is 167mg/kg based on local irritant effect in the upper respiratory tract, Rat

11.2.11. Absorption injurious - Glycerin
No information available.

11.2.12. Other Hazardous effects - Glycerin
No information available.

12. Ecological information

12.1. Ecotoxicity

12.1.1. Fish - Glycerin
LC50 54000 mg/l 96 hr *Oncorhynchus mykiss* (Static, fresh water, GLP)

12.1.2. Crustacean - Glycerin
LC50 1955 mg/l 48 hr *Daphnia magna* (exponential, fresh water)

12.1.3. Algae - Glycerin
EC3 > 10000 mg/l 8 day *Scenedesmus quadricauda* (exponential, fresh water)

12.2. Residual fungicide and resolvability

12.2.1. Residual fungicide - Glycerin
01 -1.75 log Kow (log Pow, 25°C)

12.2.2. Resolvability - Glycerin
BOD5/COD COD, TOC 0%, 0% at 0 hours, 14%, 18% at 2 hours, 32%, 38% at 4hours, 24 hours: 92%, 93%

12.3. Life enrichment

12.3.1. Enrichment - Glycerin
Glycerin - 01 3 BCF

12.3.2. Biodegradability - Glycerin
Glycerin - 60 01 2hr (TOC removal)

12.4. Soil - Glycerin
No information available.

12.5. Other harmful influences - Glycerin
No information available.

13. Disposal considerations

13.1. Disposal method - Glycerin
If specified in the Waste Management Act, dispose of contents and containers inaccordance with regulations.

13.2. Precautions for disposal
Dispose of container contents (according to relevant laws and regulations).

14. Transport information

14.1. UN No. - Gylcerin
UN classification information for hazardous substances for transport is not available

14.2. Proper shipping name - Gylcerin
ALUMINUM ZIRCONIUM TETRACHLOROHY

14.3. Container grade - Glycerin
Not applicable

14.4. Marine pollutants - Glycerin
No information available

14.5. Special safety measures that the user needs to know about or require regarding transportation or means of transportation.

14.5.1. Emergency measures in case of fire- Glycerin
Not applicable

14.5.2. Emergency measures in case of leak - Glycerin
Not applicable

15. Regulatory information

15.1. Regulations of occupational safety and health act - Glycerin

Substances for which exposure standards are set

15.2. Regulations of toxic chemicals regulation act - Glycerin

No information available.

15.3. Regulations of safety control of dangerous substances act - Glycerin

Class 4: Class 3 petroleum (water-soluble) 4000 l

15.4. Regulations of waste control act - Glycerin

No information available.

15.5. Regulations of other domestic and international act

15.5.1. Domestic act - Glycerin

No information applicable.

15.5.2. Other domestic regulations - Glycerin

No information applicable.

15.5.3. Foreign act

15.5.3.1. U.S. OSHA Regulations- Glycerin

Not applicable

15.5.3.2. U.S. CERCLA Regulations- Glycerin

Not applicable

15.5.3.3. EPCRA 302 Regulations - Glycerin

Not applicable

15.5.3.4. EPCRA 304 Regulations - Glycerin

Not applicable

15.5.3.5. EPCRA 313 Regulations - Glycerin

Not applicable

15.5.3.6. U.S. Rotterdam Convention Substances - Glycerin
Not applicable

15.5.3.7. U.S. Stockholm Convention Substances - Glycerin
Not applicable

15.5.3.8. U.S. Montreal Protocol Substances - Glycerin
Not applicable

15.5.3.9. EU Confirmed Classification - Glycerin
Not applicable

15.5.3.10. EU Hazard Statements - Glycerin
Not applicable

15.5.3.11. EU Hazard Statements - Glycerin
Not applicable

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.

16.1 Source of data

16.1.1. Glycerin

ECHA (characteristics)
ECHA (b. smell)
HSDB (d. pH)
ECHA (E. Melting point/freezing point)
ECHA (f. Initial boiling point and boiling point range)
ECHA (flash point)
ECHA (i. Flammability (solid, gas))
ECHA (K. Vapor pressure)
ECHA (T. Solubility)
ECHA (F. Vapor Density)
GESTIS (lower specific gravity)
ECHA (n-octanol/water partition coefficient (Kow))
ECHA (N. Auto ignition temperature)
HSDB (the. decomposition temperature)
ECHA (Rus. Viscosity)
GESTIS (mer. molecular weight)
ECHA (oral)
ECHA (transdermal)
ECHA (inhalation)
ECHA (skin corrosion/irritation)
ECHA (serious eye damage/irritation)
ECHA (germ cell mutagenicity)
ECHA (reproductive toxicity)
ECHA (specific target organ toxicity (single exposure))
ECHA (specific target organ toxicity (repeated exposure))
ECHA (fish)
ECHA (crustaceans)
ECHA (Algae)
ECHA (persistence)
ECHA (degradable)
HSDB (concentrate)
ECHA (biodegradable)

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