

Material Safety Data Sheet

Version 1.0

Revision date 02.01.2018

1. DETAILS OF THE CHEMICAL AND SUPPLIER

Product name	FastGene Scriptase II
Product code	LS53, LS53s
Recommended use of the chemical and restrictions on use	
Recommended use	Research and development only
Restrictions on use	Research and development only
Details of the supplier	
Company name	Nippon Genetics Europe
Address	Binsfelderstr. 77 52351 Düren Germany
Emergence contact number	+49 2421 554960

2. HAZARDS AND DANGEROUSNESS

Classification of Hazards and dangers	No relevant classification
warning article including prevention methods	
Pictorial symbol	No information available
Category	No information available
Hazards and dangers	No information available
Prevention methods	
Prevention	No information available
Action	No information available
Store	No information available
Discard	No information available
Other hazards and dangers (NFPA) not included in classification	
Health	1
Fire	1
Reactivity	0

3. CONSTITUENT TITLE AND AMOUNT

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

4. FIRST AID MEASURES

Eye contact	Consult a physician Immediately rinse skin and eyes thoroughly with plenty of running water for at least 20 minutes.
Skin contact	Consult a physician Remove contaminated clothes and shoes and isolate contaminated area Immediately rinse skin and eyes thoroughly with plenty of running water for at least 20 minutes.
Inhalation	Fire risk when drying contaminated clothes Remove to fresh air CPR when there is no breathing Provide Oxygen when breathing is difficult Provide warm and stability
Ingestion	Emergency medical measurers
Note to physicians	Take protective action according to the material

5. FIRE FIGHTING MEASURES

Proper (improper) fire extinguishing agents	Use Alcohol foam, carbon dioxide or water spray to extinguish fire with this product Use dry sand or soil to extinguish choking digestion
Specific hazards from chemical compounds	Make strong fire; oxidizing agent Fire when contact with other combustible materials Residuary material can act as oxidizing agents after drying Intense chain reaction give raise to fire and explosion Ignite combustibles (wood, paper, oil, clothing) Heating may explode vessel Leak material may cause fire/explosion Accelerate burn in a fire Portion may explode in a fire or high heat May explode by heat or contaminates Portion may explode in a reaction with hydrocarbon Portion may ignite combustible materials as oxidizing agent May generate Irritation, corrosive, toxic gas in a fire
Protective equipment and precautions for fire fighting Glycerin	No information available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Micro particles can ignite fire or explosion therefore remove all the sources of fire. Separate combustibles from leaked material Stop leak if it is not dangerous Do not contact with leaked materials without wearing proper protective equipments Give attention to materials and conditions that should be avoided
Environmental precautions Containment and cleaning up	No information available Build a dike and pool water for fire extinguish Do not use flammable materials such as sawdust Make a ditch to contain large leak Pool released material by clean shovel into clean and dry container, tie it and then remove from released area After probation clean contaminated area with water

7. HANDLING AND STORAGE

Precautions for safe handling	Take measure not to mix with combustibles Do not expose to pressure, cut, weld, solder, inoculate, drill, grind or expose to heat, chemical flame, fire, electricity or other ignition sources Explosion can cause injury or death Residue of the product may remain in the container even after cleaning therefore follow all the MADS/label precautionary steps Pay attention to materials and conditions that should be avoided Refer to engineered management and personal protection while working
Conditions for safe storage	Store far from heat, spark, flame, high heat - no smoking Isolated storage from combustibles

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure standard of chemical compound, biological exposure standard	
Domestic regulations	
Glycerin	TWA - 10 mg/m ³
ACGIH regulation	
Glycerin	TWA - 10 mg/m ³
Biological release regulation	
Glycerin	Not related
Individual protection equipments	
Respiratory system protection	No information available
Glycerin	Use certified respiratory protection equipments in a release of gas/liquid according to their chemico-physical properties. Use proper filter or half-circled respiratory protection cartridge equipments if the concentration of released material is lower than 100 mg/m ³ Use proper filter or loose-fitting respiratory protection cartridge equipments such as hood/helmet shape motor operated equipments or continuous flow protection mask if the concentration of released material is lower than 250 mg/m ³ Use proper filter or full face cartridge or motor operated half-circled equipments or half circled continuous flow air supply respiratory protection equipments if the concentration of released material is lower than 500 mg/m ³ Use proper filter or full faced respiratory protection cartridge equipments or hood/helmet type, pressurized mask if the concentration of released material is lower than 10000 mg/m ³

Use proper filter or auto air supply (SCBA) equipments or pressurized auto air supply (SCBA) respiratory protection equipments if the concentration of released material is lower than 100000 mg/m³

9. CHEMICOPHYSICAL PROPERTIES

Appearance	
State	Liquid
Color	Dark color to yellow color
Smell	Dull
Smell liminometer	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 (at 50 °C)
Solubility	water solubility :1000 g/l at 25 °C 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

Chemical stability and possibility of hazardous reactions	
Glycerin	No information available
Situation to avoid	
Glycerin	No information available
Materials to avoid	
Glycerin	No information available
Harmful material produced by degradation	
Glycerin	No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Glycerin Irritation, difficult to breath, area, vomit, diarrhoea, headache, dizziness, dyssomnia, kidney problem, paralysed

Health maleficence information

Acute poison

Oral

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

Dermal

Glycerin LD50 > 10000 mg/kg Rat

Inhalation

Glycerin No information available

Skin corrosivity or irritant agent

Glycerin No irritation on skin

Serious eye damage or irritation

Glycerin No irritation on eyes

Respiratory organ hypersensitiveness

Glycerin No information available

Skin hypersensitiveness

Glycerin No information available

Carcinogenic

Occupational safety and health acts

Glycerin No information available

Employment announcement

Glycerin No information available

IARC

Glycerin No information available

OSHA

Glycerin No information available

ACGIH

Glycerin No information available

NTP

Glycerin No information available

EU CLP

Glycerin No information available

Germ cell mutagenicity

Glycerin Many color mammal red blood cell/negative

Reproduction toxicity test

Glycerin No information available

Special target poison (1 time exposer)

Glycerin No information available

Special target poison (long exposer)

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

Absorption injurious

Glycerin No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity	
Fish	
Glycerin	LC50 5000 mg/l 24 h Carassius auratus
Crustacean	
Glycerin	EC50 > 10000 mg/l 24 h Daphnia magna (Daphnia magna EC50 (24 h)10000 mg/l (US EPA ECOTOX); Daphnia magna EC50 (24 h) >10000 mg/l (EUIUCLID))
Algae	
Glycerin	(LC50 (96 h) 77712.039 mg/l)
Residual fungicide and resolvability	
Residual fungicide	
Glycerin	No information available
Resolvability	
Glycerin	No information available
Life enrichment	
Enrichment	
Glycerin	No expected life enrichment
Biodegradability	
Glycerin	63 % 14 day Fast biodegradability (OECD SIDS), 93 % biodegradability in 30 days (OECD TG 301D) (IUCLID))
Soil	
Glycerin	No information available
Other harmful influences	
Glycerin	Environmental summary: No information on toxicity on aquatic organisms

13. DISPOSAL CONSIDERATIONS

Waste treatment method	
Glycerin	No information available
Material that require attention for disposal	
Glycerin	Dispose container and content according to the waster control act

14. TRANSPORT INFORMATION

IATA	
Proper shipping name	
Glycerin	No dangerous good in sense of these transport regulations
Hazard class	
Glycerin	No information available
Subsidiary class	
Glycerin	No information available
Packing group	
Glycerin	No information available
UN-No	
Glycerin	No information available
Environmental hazards	
Glycerin	No information available

15. CONTINGENCY ACTION IN A SPILL

Regulations of occupational safety and health act Glycerin	No information available Exposure standard materials
Regulations of toxic chemicals regulation act Glycerin	No information available
Regulations of safety control of dangerous substances act Glycerin	4th class The third kind Petroleum (Receptivity) 4000 I
Regulations of waste control act Glycerin	Designated waste
Regulations of other domestic and international act Domestic act Persistent organic pollutants control act Glycerin	No information applicable
Foreign act American supervision information Glycerin	No information applicable
CERCLA Glycerin	No information applicable
EPCRA 302 Glycerin	No information applicable
EPCRA 304 Glycerin	No information applicable
EPCRA 313 Glycerin	No information applicable
American supervision information (Rotterdam agreement material) Glycerin	No information applicable
American supervision information (Stockholm agreement material) Glycerin	No information applicable
American supervision information (Montreal protocol material) Glycerin	No information applicable
EU Classification information (Confirmed classification results) Glycerin	No information applicable
EU Classification information (Danger expression) Glycerin	No information applicable
EU Classification information (Safety expression) Glycerin	No information applicable

16. OTHER INFORMATION

Prepared by

International Chemical Safety Cards (ICSC)
National Library of Medicine/Hazardous Substances Data Bank (NLM/HSDB)(Odour)
National Library of Medicine/Hazardous Substances Data Bank (NLM/HSDB)(pH)
International Chemical Safety Cards (ICSC)(melting point/freezing point)
OECD Screening Information Data Set (Early boiling point and range)
OECD Screening Information Data Set (Steam pressure)
OECD Screening Information Data Set (Solubility)
International Chemical Safety Cards (ICSC)(Specific gravity)
OECD Screening Information Data Set (n-octanol/ distribution coefficient)
OECD Screening Information Data Set (Molecular weight)
International Programme on Chemical Safety (IPCS INCHEM)(Epigram)
International Uniform Chemical Information Database (IUCLID)(Epigram)
National Library of Medicine (NLM)(Epigram)
National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB)(Epigram)
OECD Screening Information Data Set (Skin corrosivity or irritant agent)
Corporate Solution From Thomson Micromedex (Serious irritation)
International Uniform Chemical Information Database (IUCLID)(Germ cell mutagenicity)
OECD Screening Information Data Set (Reproduction toxicity test)
International Chemical Safety Cards (ICSC)(Special target poison (1 time exposer))OECD
Screening Information Data Set(Special target poison (long exposer))
OECD Screening Information Data Set(Fish)
OECD Screening Information Data Set(Crustacean)
OECD Screening Information Data Set(Residual fungicide)
International Uniform Chemical Information Database(IUCLID)(Enhancement)
14303Chemical products (Japan)

This information is only intended to describe the safety requirements of the product and is based on the present state of our knowledge. They do not constitute a guarantee for the characteristics of the product described in the sense of the statutory warranty regulations. Please refer to the respective product data sheets for the delivery properties. If the product mentioned in this Material Safety Data Sheet is blended, mixed or processed with other materials, the data in this Material Safety Data Sheet may not be transferred to the new material, unless otherwise specified.

End of Material Safety Data Sheet