Material Safety Data Sheet

Version 1.0 Revision Date 10.01.2018

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name	FastGene BAC free HS TAQ
Product code	LS33, LS33S
Recommended use of the chemical and restrictions on use	
Recommended use	For research use only
Restrictions on use	For research use only
Details of the supplier	
Company name	Nippon Genetics Europe
Address	Binsfelderstr. 77 52351 Düren Germany
Emergence contact number	+49 2421 554960

2. HAZARDS IDENTIFICATION

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	
Glycerin	
Health	1
Fire	1
Reactivity	0
Ethylenediamine tetra acetic acid, disodium salt	
Health	2
Fire	1
Reactivity	0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material name	Usual name	CAS No.	Amount (%)
Glycerin	GLYCEROL	56-81-5	40 ~ 60
Ethylenediamine tetra acetic acid, disodium salt	EDTA, DISODIUM SALT	139-33-3	< 1

4. FIRST AID MEASURES

Eye contact	Take medical action immediately.
	Immediately rinse skin and eyes thoroughly with plenty of running water for at least 20 minutes.
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.
Inhalation	Remove to fresh air.
	CPR when there is no breathing.
	Provide oxygen when breathing is difficult.
Ingestion	Take medical action immediately.
	Do not provide any food for unconscious person.
Note to physicians	Take protective action according to the material.
	Do not inject adrenalin.

5. FIRE FIGHTING MEASURES

Proper (improper) fire extinguishing agents	Small fire: dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO_2 (suitable extinguishing agent)
	Large fires: water spray / mist, regular foam (suitable extinguishing agent)
	High pressure water (improper extinguishing agent)
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.
Protective equipment and precautions for fire fighting	
Glycerin	No information available.
Ethylenediamine tetra acetic acid, disodium salt	If it is not dangerous move container in fire area.
	Portion may transport at high temperature.
	Release may cause contamination.
	Contact may cause burn on skin or eyes.
	Digging trenches for disposal of water shut. Keep the substance does not disperse.
	In case of tank fire, cool containers with large amounts of water even after extended fire has extinguished.
	In case of tank fire, if there is a high sound level in the pressure relief device or if the tank is discolored, immediately withdraw it.
	Stand away from tank covered with flames.

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.
	Stop leak if it is not dangerous.
	Give attention to materials and conditions that should be avoid.
	Do not enter the space without proper respirator or until proper air (oxygen concentration 18 ~ 23.5 %) is available.
Environmental precautions	Prevent entry into waterways, sewers, basements and confined spaces.
Containment and cleaning up	In case of small leakage, flush contaminated area with large amount 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.

7. HANDLING AND STORAGE

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 ℃ because this material evaporates slowly and reaches hazardous concentrations. Do not spray because it will evaporate faster if sprayed.
Conditions for safe storage	Keep it tightly closed.
	Store in a cool, dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure standard of chemical compound, biological exposure standard

Domestic regulations	
Glycerin	TWA - 10 mg/m^3
Ethylenediamine tetra acetic acid, disodium salt	No information available
ACGIH regulation	
Glycerin	TWA - 10 mg/m^3
Ethylenediamine tetra acetic acid, disodium salt	No information available
Biological release regulation	
Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information available
Proper engineering management	Keep air levels below the exposure guidelines.

Individual protection equipment

Respiratory protection	No information available
Glycerin	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 100 mg/m^3.
	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 250 mg/m^3.
	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 500 mg/m^3.
	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 10000 mg/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 is lower than 100000 mg/m^3.
Ethylenediamine tetra acetic acid, disodium salt	Wear a certified respirator that matches the physicochemical properties of the material being exposed.
Eye protection	Use chemical protection glasses and safety glasses.
	Install eyewash and emergency shower near work area.
Hand protection	Wear suitable chemical resistant gloves.
Body protection	Wear suitable chemical resistant clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Glycerin

Appearance	
State	Liquid
Color	Dark color to yellow color
Odor	Dull
Odor threshold	No information available
pH	Neutral
Melting point/freezing point	20 ℃
Early boiling point and range	171 ℃
Flashing point	160 ℃ ((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 ℃)
Solubility	water solubility: 1000 g/l at 25 ℃ 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 ℃
Disassemble temperature	290 ℃
Viscosity	954 cP (at 25 °C)
Molecular weight	92.09

Ethylenediamine tetra acetic acid, disodium salt

Appearance	
State	Solid, crystalline powder (appearance change: hygroscopic)
Color	White
Odor	None
Odor threshold	None
pH	4.0-6.0 ((5% solution))
Melting point/freezing point	None
Early boiling point and range	Not applicable
Flashing point	160 ℃ ((c.c.))
Evaporation rate	No information available
Evaporation rate (solid/liquid)	No information available
Maximum / minimum evaporation or explosion range	- / -
Steam pressure	7.57 x 10^{-17} mmHg (at 25 ℃ (estimates))1000000 g/ml (at
Solubility	25 ℃ (estimates))
Vapor density	No information applicable
Specific gravity	No information available
n-octanol/ distribution coefficient	-11.70 (estimates))
Self-ignition temperature	No information available
Disassemble temperature	250 ℃
Viscosity	No information available
Molecular weight	336.21

10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions	
Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	Stable at normal temperature and pressure. 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.
Situation to avoid	
Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	Heat source, spark, flame, etc.
Materials to avoid	
Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	Combustible material
Ethylenediamine tetra acetic acid, disodium salt	Irritant, toxic gas
Harmful material produce by degradation	
Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Glycerin	Irritation, difficult to breath, area, vomit, diarrhea, headache, dizziness, dyssomnia, kidney problem, paralyzed Can be absorbed by suction and extinguisher. Can be absorbed by body, by skin, by digestive system and by inhalation of aerosol. Can be absorbed by body by inhalation of steam.
Ethylenediamine tetra acetic acid, disodium salt	Can be absorbed by inhalation, skin and digestive system. Stimulus, diarrhea, eye irritation, eye damage Can be absorbed by suction and extinguisher. Can be absorbed by body, by skin, by digestive system and by inhalation of aerosol. Can be absorbed by body by inhalation of steam.

Health maleficence information

Acute poison

Oral

Glycerin	LD50 27200 mg/kg rat (rat/LD50/12600mg/kg(IUCLID))
Ethylenediamine tetra acetic acid, disodium salt	LD50 2000 mg/kg rat

Ingestion

Glycerin	LD50 > 10000 mg/kg rat
Ethylenediamine tetra acetic acid, disodium salt	No information available

Inhalation

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Skin corrosion or irritant agent

Glycerin	No irritation on skin
Ethylenediamine tetra acetic acid, disodium salt	No information available

Serious eye damage or irritation

Glycerin	No irritation on eyes
Ethylenediamine tetra acetic acid, disodium salt	No information available

Respiratory organ hypersensitiveness

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Skin hypersensitiveness

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Carcinogenic

Occupational safety and health acts

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Employment announcement

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

IARC

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

OSHA

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

ACGIH

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

NTP

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

EU CLP

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt A216	No information available

Germ cell mutagenicity

Glycerin	Many color mammal red blood cell/negative
Ethylenediamine tetra acetic acid, disodium salt	No information available

Reproduction toxicity test

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Special target poison (1 time exposer)

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Special target poison (long exposer)

Glycerin	Rat (inhale): 1-4 mg/l epiglottis epithelium
Ethylenediamine tetra acetic acid, disodium salt	No information available

Absorption injurious

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Fish

Glycerin	LC50 5000 mg/l 24 h *Carassius auratus*
Ethylenediamine tetra acetic acid, disodium salt	LC50 320 mg/l 96 h *Poecilia reticulata*

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 (EU IUCLID))
Ethylenediamine tetra acetic acid, disodium salt	No information available

Algae

Glycerin	(LC50 (96 h) 77.712039 g/l)
Ethylenediamine tetra acetic acid, disodium salt	No information available

Residual fungicide and resolvability

Residual fungicide

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	log Kow -11.70 ((estimates))

Resolvability

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Life enrichment

Enrichment

Glycerin	No expected life enrichment
Ethylenediamine tetra acetic acid, disodium salt	BCF 3.162

Biodegradability

Glycerin	63 % in 14 days Fast biodegradability (OECD SIDS), 93 % biodegradability in 30 days (OECD TG 301D)
Ethylenediamine tetra acetic acid, disodium salt	(IUCLID))No information available

Soil

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Other harmful influences

Glycerin	Environmental summary: No information of toxicity on aquatic organisms
Ethylenediamine tetra acetic acid, disodium salt	No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment method

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	If specified in the waste management act, consider the precautions specified in the regulations.

Disposal considerations

Glycerin	If specified in the waste management act, consider the precautions specified in the regulations.
Ethylenediamine tetra acetic acid, disodium salt	If specified in the waste management act, consider the precautions specified in the regulations.

14. TRANSPORT INFORMATION

IATA

Proper shipping name

Glycerin	No dangerous good in sense of these transport regulations
Ethylenediamine tetra acetic acid, disodium salt	No information available

Hazard class

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Subsidiary class

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Packing group

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

UN-No

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Environmental hazards

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

15. REGULATORY INFORMATION

Regulations of occupational safety and health act

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Regulations of toxic chemicals regulation act

Glycerin	No information available
Ethylenediamine tetra acetic acid, disodium salt	No information available

Regulations of safety control of dangerous substances act

Glycerin	4th class, the third kind petroleum (receptivity) 4000 l
Ethylenediamine tetra acetic acid, disodium salt	No information available

Regulations of waste control act

Glycerin	Designated waste
Ethylenediamine tetra acetic acid, disodium salt	No information available

Regulations of other domestic and international act

Domestic act

Persistent organic pollutants control act

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

Foreign act

American supervision information

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

CERCLA

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

EPCRA 302

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

EPCRA 304

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

EPCRA 313

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

American supervision information (Rotterdam agreement material)

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

American supervision information (Stockholm agreement material)

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

American supervision information (Montreal protocol material)

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

EU Classification information (Confirmed classification results)

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

EU Classification information (Danger expression)

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

EU Classification information (Safety expression)

Glycerin	No information applicable
Ethylenediamine tetra acetic acid, disodium salt	No information applicable

16. OTHER INFORMATION

Source of material

Ethylenediamine tetra acetic acid, disodium salt

IUCLID (Fish)

QSAR (Concentration)

Glycerin

IUCLID (oral)

SIDS (oral)

SIDS (skin corrosive or irritant)

SIDS (severe eye damage or irritation)

NLM (Germ Cell Mutagenesis)

IUCLID (specific target organ toxicity (repeated exposure))

OECD SIDS (fish)

EU IUCLID (Crustaceans)

OECD SIDS (Crustaceans)

US EPA ECOTOX (Crustaceans)

ECOSAR (agar)

OECD SIDS (Enrichment)

IUCLDE (biodegradable)

OECD SIDS (biodegradable)

OECD TG 301C (biodegradable)

OEDC TG 301D (biodegradable)

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