



Product Guide for
LudgerZyme
Ceramide Glycanase Kit

Product # LZ-CER-HM-KIT



Ludger Document # LZ-CER-HM-KIT-v2.1

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Specifications for LZ-CER-HM-KIT

Application	Ceramide glycanase can be used to deglycosylate a variety of glycosphingolipids by cleaving the β -glycosyl linkage.
Description	Ceramide glycanase allows the identification of glycosylation patterns of glycosphingolipids through cleaving the glycan moiety and making it accessible to LudgerTag labelling technology.
Number of Samples	Sufficient for up to 25 samples.
Amount of Sample	Up to 1nmol glycolipid sample.
Suitable Samples	Isolated glycolipids containing a ceramide backbone.
Storage	Long term storage – over 14 days - store at -20°C. Protect from sources of heat and light. Short term storage – up to 14 days - store at 4°C. Protect from sources of heat and light. Avoid multiple freeze thaw cycles.
Shipping	The product should be shipped at 4°C.
Handling	Ensure that any glass, plastic ware or solvents used with this item are free of environmental carbohydrates. Use powder-free gloves for all sample handling procedures and avoid contamination with environmental carbohydrate.
Safety	For research use only. Not for human or drug use Please read the Safety Data Sheets (SDS's) for all chemicals used. All processes involving labeling reagents should be performed using appropriate personal safety protection – safety glasses, chemically resistant gloves (e.g. nitrile), lab coat, and when appropriate, in a laboratory fume cupboard.

Kit Contents

Each kit contains the following materials and reagents:

Cat. #	Item	Quantity
LZ-CER-HM-10	LudgerZyme Ceramide Glycanase	1 vial of 55 μ L
LZ-CER-BUFFX4	LudgerZyme Ceramide Glycanase RXN buffer (4 x concentrate)	1 vial of 150 μ L
GLIP-GM1-01	GM1 glycolipid	1 vial of 10 μ L (approx. 2 nMol)

Additional Reagents and Equipment Required

- Pure water: resistivity above 18 M Ω -cm, particle free (>0.22 μ m), TOC <10 ppb.
- Eppendorf tubes for reaction.
- Waterbath or oven with constant temperature maintenance at 37°C.
- Pipettes and tips.

Time Line for Procedure

Procedure	Approx Time
Preparing assay mixture	5min
Incubation	24h

Method

1 Preparing assay mixture

Pipette 5 μ l of LZ-CER-BUFFX4 into an Eppendorf tube, followed by 5 μ l of approximately 1nmol of the glycolipid sample to be tested.

For the positive control reaction, add 5 μ l of GLIP-GM1-01 substrate to 5 μ l of LZ-CER-BUFFX4 into an Eppendorf tube

Add 2 μ l of LZ-CER-HM-10 (the enzyme) to the reaction mixture and mix gently by tapping the Eppendorf tube with your finger. Make total reaction mix up to 20 μ l with water.

2 Incubation

Incubate your samples in a water bath, oven or any other constant heating source at 37°C for 24 hrs. *Samples can be stored frozen at this point.*

The samples are now ready for procainamide, 2-AB or 2-AA labeling (kits available from Ludger) and subsequent analysis by HPLC.

Warranties and liabilities

Ludger warrants that the above product conforms to the attached analytical documents. Should the product fail for reasons other than through misuse Ludger will, at its option, replace free of charge or refund the purchase price. This warranty is exclusive and Ludger makes no other warrants, expressed or implied, including any implied conditions or warranties of merchantability or fitness for any particular purpose.

Ludger shall not be liable for any incidental, consequential or contingent damages.

This product is intended for *in vitro* research only.

Document Revision Number

Document # LZ-CER-HM-KIT, version v2.1

Appendix 1: Troubleshooting Guide

The following is a guide to the most likely problems associated with the use of the ceramide glycanase kit for the separation of glycans from glycosphingolipids.

The positive control gives negative results.

The fluorophore labeling was inefficient

It is possible that labelling of the released glycans occurred insufficiently. For optimal results use LudgerTag Procainamide, 2-AB or 2-AA glycan labelling kits.

The enzyme became inactive

Multiple freeze-thaw cycles can render the enzyme inactive. To avoid multiple freeze-thaw cycles aliquot the enzyme into smaller volumes before re-freezing.

The isolated glycolipids are released inefficiently.

The glycolipids are not dissolved

For optimal activity of ceramide glycanase, detergents are required to solubilize the lipophilic substrates. All components of this kit contain 1% Taurodeoxycholate (TDC) as a detergent. If solubilization is insufficient, use other detergents to assay for optimal activity

The sample contained contaminants that interfered with ceramide glycanase activity

Please ensure that the glycosphingolipids are free from contaminants (e.g. SDS) before deglycosylation.

The incubation condition was incorrect.

Please ensure that the oven or heating block is equilibrated to the incubation temperature and that the reaction tube is subjected to this temperature for the entire period.

There was less starting glycosphingolipids than was originally estimated.

Please ensure sufficient amount of sample is used.

SAFETY DATA SHEET

Version: 1.0

Date written: 15 Jul 14

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Name **Ceramide Glycanase (in Sodium Acetate, Sodium Taurodeoxycholate Hydrate and Bovine Serum Albumin) and Reaction Buffer (Sodium Acetate and Sodium Taurodeoxycholate Hydrate)**

Product Catalogue Name **LZ-CER-HM-10 and LZ-CER-BUFFX4**

Company: Ludger Ltd
 Culham Science Centre
 Abingdon
 Oxfordshire
 OX14 3EB

Telephone: 01865 408554

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SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Sodium Acetate: Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008. This substance is not classified as dangerous according to Directive 67/548/EEC.

Sodium Taurodeoxycholate Hydrate: Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008

This substance is not classified as dangerous according to Directive 67/548/EEC.

Bovine Serum Albumin: Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xn Harmful R22

2.2 Label elements

Sodium Acetate: The product does not need to be labelled in accordance with EC directives or respective national laws

Sodium Taurodeoxycholate Hydrate The product does not need to be labelled in accordance with EC directives or respective national laws

Bovine Serum Albumin: **According to European Directive 67/548/EEC as amended.**

Hazard symbol(s) Xn Harmful



R-phrases(s)

R22 Harmful if swallowed.

S-phrases(s) none

Signal Word: Harmful

Hazard Statement(s)

None

Precautionary Statement(s)

None

2.3 Other hazard information:

None

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Bovine Serum Albumin

Synonyms: BSA solution

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Name Sodium azide	Acute Tox. 2; Acute Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310, H410, EUH032	0.1 - 0.25 %
CAS-No. 26628-22-8		
EC-No. 247-852-1		
Hazardous ingredients according to Directive 1999/45/EC		
Name Sodium azide	T+, N, R27 - R28 - R32 - R50/53	0.1 - 0.25 %
CAS-No. 26628-22-8		
EC-No. 247-852-1		
Index-No.		

Sodium Acetate:

Substances

Synonyms: Acetic acidsodium salt

Formula: C₂H₃NaO₂

Molecular Weight: 82.03 g/mol

CAS-No. : 127-09-3

EC-No. : 204-823-8

No components need to be disclosed according to the applicable regulations.

Sodium Taurodeoxycholate Hydrate

Substances

Synonyms: 2-([3 α ,12 α -Dihydroxy-24-oxo-5 β -cholan-24-yl]amino)ethanesulfonic acid
Taurodeoxycholic acidsodium salhydrate

Formula: C₂₆H₄₄NNaO₆S·xH₂O

Molecular Weight: 521.69 g/mol

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Consult a physician if exposure causes ill effects and if in any doubt. Show this safety data sheet to the physician/ first responder in attendance.

If Ingested

Never give anything by mouth to an unconscious person. Rinse mouth with water

If skin is exposed

Wash off with soap and plenty of water.

If eyes are exposed

Flush eyes with water as a precaution.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration..

4.2 Most important symptoms and effects, both acute and delayed

4.3 Indication of immediate medical attention and special treatment needed

no data available

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Bovine Serum Albumin Nature of decomposition products not known.

Sodium Taurodeoxycholate Hydrate Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Sodium oxides

Sodium Acetate Carbon oxides, Sodium oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Bovine Serum Albumin Avoid breathing vapours, mist or gas. Ensure adequate ventilation

Sodium Taurodeoxycholate Hydrate Avoid breathing vapours, mist or gas. Ensure adequate ventilation

Sodium Acetate Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust

6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal

6.4 Reference to other sections

For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Bovine Serum Albumin Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C

Sodium Taurodeoxycholate Hydrate Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Sodium Acetate Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Bovine Serum Albumin

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Sodium azide	26628-22-8	STEL	0.3 mg/m ³	UK. EH40 WEL - Workplace Exposure Limits
	Remarks	Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		TWA	0.1 mg/m ³	UK. EH40 WEL - Workplace Exposure Limits
		Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		TWA	0.1 mg/m ³	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
		Identifies the possibility of significant uptake through the skin Indicative		
		STEL	0.3 mg/m ³	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
		Identifies the possibility of significant uptake through the skin Indicative		

Sodium Taurodeoxycholate Hydrate

Contains no substances with occupational exposure limit values.

Sodium Acetate

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal Protective Equipment

Eye / face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard

EN 374 derived from it.

Body Protection

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK(EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Bovine Serum Albumin

Appearance Liquid

Sodium Taurodeoxycholate Hydrate

Appearance Solid

Sodium Acetate

Appearance Solid

Odour no data available

Odour threshold no data available

Bovine Serum Albumin

pH no data available

Sodium Taurodeoxycholate Hydrate

pH no data available

Sodium Acetate

pH 8.5 - 9.9 at 246 g/l at 25 °C

Bovine Serum Albumin

Freezing/Melting Point no data available

Sodium Taurodeoxycholate Hydrate

Freezing/Melting Point Melting point/range: 168 °C

Sodium Acetate

Freezing/Melting Point Melting point/range: > 300 °C

Initial boiling point and boiling range no data available

Sodium Acetate Flash Point > 250 °C - closed cup

Bovine Serum Albumin Flash Point no data available

Sodium Taurodeoxycholate Hydrate Flash Point no data available

Evaporation rate no data available

Flammability no data available

Upper/lower flammability or explosive limits no data available

Vapour Pressure, Pa at temperature degree C no data available

Sodium Acetate

 Relative Density 1.528 g/cm³

Solubility in water and solvents (mg/l) no data available

Partition coefficient no data available

Autoignition temperature no data available

Decomposition temperature no data available

Viscosity no data available

Explosive properties no data available

Oxidising properties no data available

9.2 Other information

No data available

SECTION 10. STABILITY AND REACTIVITY
Sodium Acetate
10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Exposure to moisture.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

Bovine Serum Albumin**10.1 Reactivity**

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Acid chlorides, Halogenated hydrocarbon, Metals, Do not store near acids.

10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

Sodium Taurodeoxycholate Hydrate**10.1 Reactivity**

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - no data available

SECTION 11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**Sodium Acetate**Acute toxicity**

LD50 Oral - rat - 3,530 mg/kg

LC50 Inhalation - rat - 1 h - > 30,000 mg/m³

LD50 Dermal - rabbit - > 10,000 mg/kg

Skin corrosion/irritation

Skin - rabbit

Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - rabbit

Result: Mild eye irritation

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

RTECS: AJ4300010

Abdominal pain, Nausea, Vomiting

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Bovine Serum Albumin

Acute toxicity

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

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Additional Information

RTECS: Not available

Sodium azide/ hydrazoic acid causes a profound lowering of blood pressure and inhibits cellular respiration., Laboratory experiments in animals have shown sodium azide to produce a profound hypotensive effect, demyelination of myelinated nerve fibers in the central nervous system, testicular damage, blindness, attacks of rigidity, and hepatic and cerebral effects.

Sodium Taurodeoxycholate Hydrate**Acute toxicity**

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Additional Information

RTECS: Not available

SECTION 12. ECOLOGICAL INFORMATION

Sodium Acetate

12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 13,330 mg/l - 120 h

LC50 - Lepomis macrochirus (Bluegill) - 5,000 mg/l - 24 h

Toxicity to daphnia and

other aquatic

invertebrates

EC50 - Daphnia magna (Water flea) - > 1,000 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability Result: 99 % - Readily biodegradable.

12.3 Bioaccumulative potential

no data available

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12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

Bovine Serum Albumin

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

Harmful to aquatic life.

Sodium Taurodeoxycholate Hydrate

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Sodium Acetate

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

Bovine Serum Albumin

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

Sodium Taurodeoxycholate Hydrate

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATIONSodium Acetate**14.1 UN number**

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

no data available

Bovine Serum Albumin**14.1 UN number**

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

no data available

Sodium Taurodeoxycholate Hydrate**14.1 UN number**

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

no data available

SECTION 15. REGULATORY INFORMATION**Sodium Acetate**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

Bovine Serum Albumin

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

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15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

Sodium Taurodeoxycholate Hydrate

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

no data available

SECTION 16. OTHER INFORMATION

The advice offered is derived from the current available information on the hazardous materials in this product and its component(s). Consideration has been made regarding the quantities offered in the pre-dispensed container. The advice offered is, therefore, not all-inclusive nor should it be taken as the descriptive of the compound generally.

SAFETY DATA SHEET

Version: 1.0

Date written: 12 Feb 15

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Name **Asialoganglioside GM1, from bovine brain**

Product Catalogue Name **GLIP-GM1-01**

CAS-No. **71012-19-6**

Company: Ludger Ltd
 Culham Science Centre
 Abingdon
 Oxfordshire
 OX14 3EB

Telephone: 01865 408554

Emergency Telephone: 01865 408554

Email: info@ludger.com

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

This substance is not classified as dangerous according to Directive 67/548/EEC.

2.2 Label elements

This substance is not classified as dangerous according to Directive 67/548/EEC.

Signal Word: None

Hazard Statement(s)

None

Precautionary Statement(s)

None

2.3 Other hazard information:

None

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Ceramide tetrahexoside
 Gangliotetraosyl ceramide
 Ganglioside GM1, asialo

Formula: None

No components need to be disclosed according to the applicable regulations.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Consult a physician if exposure causes ill effects and if in any doubt. Show this safety data sheet to the physician/ first responder in attendance.

If Ingested

Never give anything by mouth to an unconscious person. Rinse mouth with water.

If skin is exposed

Wash off with soap and plenty of water.

If eyes are exposed

Flush eyes with water as a precaution.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2)

4.3 Indication of immediate medical attention and special treatment needed

No data available.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Nature of decomposition products not known.

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing vapors, mist or gas.

For personal protection see section 8.

6.4 Environmental Precautions

Do not let product enter drains.

6.5 Methods and material for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: -20 °C

7.3 Specific end uses

A part from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.3 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal Protective Equipment

Eye / face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards

Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: powder,
Colour: white	
Odour	No data available
Odour threshold	No data available
pH	No data available
Freezing/Melting Point	No data available
Initial boiling point and boiling range	No data available
Flash Point	No data available
Evaporation rate	No data available
Flammability	No data available
Upper/lower flammability or explosive limits	No data available
Vapour Pressure, Pa at temperature degree C	No data available
Relative Density	No data available
Solubility in water and solvents (mg/l)	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2 Other information

No data available

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to Avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products-no data available.

In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity**

No data available.

Skin corrosion/irritation

No data available.

Serious eye damage/irritation

No data available.

Respiratory or skin sensitisation

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

ARC:No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available.

STOT-single exposure

No data available.

STOT-repeated exposure

No data available.

Aspiration hazard.

No data available.

Potential Health Hazards

No data available.

Signs and symptoms of exposure

No data available.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6. Other adverse effects

No data available.

SECTION 13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION**14.1 UN Number**

ADR/RID: -

IMDG: -

IATA: -

14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods
goods

IMDG: Not dangerous goods

IATA: Not dangerous

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packing group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user

No data available.

SECTION 15. REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

No data available.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. OTHER INFORMATION

The advice offered is derived from the current available information on the hazardous materials in this product and its component(s). Consideration has been made regarding the quantities offered in the pre-dispensed container. The advice offered is, therefore, not all inclusive nor should it be taken as the descriptive of the compound generally.