SAFETY DATA SHEET

Version: 1.1
Date written: 1st February 2012
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SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Name **Monosaccharide Standard mix**

Product Catalogue Name **CM-MONO-MIX-10, CM-MONOMIX-10, CM-MONOMIX-10X3**

Company: Ludger Ltd
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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]

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

2.2 Label elements

The substance does not require any labelling following EC directives or respective national laws.

Signal Word: None required

Hazard Statement(s)
None required

Precautionary Statement(s)
None required

2.3 Other hazard information:
None required

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms:	Glucosamine Hydrochloride:	D-Glucosamine hydrochloride, 2-amino-2-deoxy-D-glucose hydrochloric
	Galactosamine Hydrochloride:	D-galactosamine hydrochloride, 2-Amino-2-deoxy-D-galactose hydrochloride
	Galactose:	Galactose (alpha form), alpha-D-Galactopyranose

	Mannose:	D-(+)-Mannose, D-Mannose
	Fucose:	L-Fucose, L-Galactose,6-deoxy-
	Glucose:	Dextrose, Corn Sugar
Formula:	Glucosamine Hydrochloride:	$C_6H_{13}NO_5$.HCl
	Galactosamine Hydrochloride:	$C_6H_{13}NO_5$.HCl
	Galactose:	$C_6H_{12}O_6$
	Mannose:	$C_6H_{12}O_6$
	Fucose:	$C_6H_{12}O_5$
	Glucose:	$C_6H_{12}O_6$
Molecular Weight:	Glucosamine Hydrochloride:	215.63
	Galactosamine Hydrochloride:	215.64
	Galactose:	180.16
	Mannose:	180.16
	Fucose:	164.16
	Glucose:	180.16

Each vial of CM-MONO-MIX-10 contains 10nmols of each monosaccharide below.

Component		**Concentration**
Name	**Glucosamine Hydrochloride**	-
CAS-No.	66-84-2	
EC-No.	No data available	
Name	**Galactosamine Hydrochloride**	-
CAS-No.	1772-03-8	
EC-No.	No data available	
Name	**Galactose**	-
CAS-No.	3646-73-9	
EC-No.	No data available	
Name	**Mannose**	-
CAS-No.	3458-28-4	
EC-No.	No data available	
Name	**Fucose**	-
CAS-No.	2438-80-4	
EC-No.	No data available	
Name	**Glucose (Dextrose)**	-
CAS-No.	50-99-7	
EC-No.	No data available	

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
Rinse mouth well with water.

If the skin is exposed
Wash the exposed area(s) well with plenty of soap and water.

If eyes are exposed
Flush the eye(s) with plenty of water or eye wash solution. If possible and present, remove contact lenses and continue rinsing.
If inhaled
Remove the affected person(s) to a source of fresh air. If the person is not breathing give artificial respiration.

4.2 Most important symptoms and effects, both acute and delayed
No data available

4.3 Indication of immediate medical attention and special treatment needed
No data available

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Water spray, dry chemicals, carbon dioxide or foam, are appropriate media for extinguishing fire. Choose the most appropriate for the surrounding fire and materials.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for Firefighters
Fire fighters to wear self-contained breathing apparatus, if deemed necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing in any material. Wear laboratory gloves and protective clothing, such as a laboratory coat.

6.2 Environmental Precautions
No data available

6.3 Methods and material for containment and cleaning up
Collect the spillage with an absorbent material, such as a paper towel, vermiculite, or sand. Collect and store the spillage/waste material in an appropriately labelled container and arrange collection for disposal. Wash the spillage area with water.

6.4 Reference to other sections
More information on disposal of the product is in Section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin, inhalation of dust, mists and/or vapours associated with the material. Work with the material in a fume hood. Wear laboratory gloves, coat and glasses, follow good laboratory practice and wash your hands before and after handling the material.

7.2 Conditions for safe storage, including any incompatibilities
Store below - 18°C. The material is to be stored in original packaging or similar tightly closing packaging.

7.3 Specific end uses
No data available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
This product contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Users must wear personal protective equipment e.g. Laboratory gloves, glasses and coats. Wash hands and avoid contact with skin.

Personal Protective Equipment
Eye/face protection
Use Safety glasses or goggles, which have been tested and approved under appropriate government standards, such as NIOSH (US) or EN 166 (EU).

Skin protection
Handle with gloves. The wearer should check for holes/tears before use. Proper glove removal technique should be used, to avoid potential contact with skin. Gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Wash and dry your hands after handling the material.

Body Protection
Wear a laboratory coat or similar coverings.

Respiratory protection
Respiratory protection is not required. It is recommended where possible to handle the product under extraction when used as part of a kit.

Thermal hazards
No data available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Opaque crystalline powder
Odour	None
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	No data available
Relative Density	No data available
Solubility in water and solvents	Soluble
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 when stored at recommended temperature. Store at -18°C.

10.3 Possibility of Hazardous Reactions
No data available

10.4 Conditions to Avoid
Avoid exposure to sources of heat and humidity.

10.5 Incompatible materials
Strong oxidising agents.

10.6 Hazardous decomposition products
No data available

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Glucosamine Hydrochloride:
LD50 Oral - Mouse - 15,000 mg/kg
Remarks: Peripheral Nerve and Sensation: Sensory change involving peripheral nerve. (RTECS)

Galactosamine Hydrochloride:
LD50 Intraperitoneal - Mouse - 2,660 mg/kg
Remarks: Behavioral: Somnolence (general depressed activity). Liver: Other changes.
Skin corrosion/

Glucose
LD50 Oral - Rat - 25,800 mg/kg
Remarks: Behavioral: Coma. Cyanosis Diarrhoea

No data available for the rest of the monosaccharides

Skin corrosion/irritation
No data available

Serious eye damage/irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

Galactosamine Hydrochloride:
Rat
Liver
Other mutation test systems
Rat
Other mutation test systems

Glucose
Mouse
lymphocyte
Mutation in mammalian somatic cells.

No data available for the rest of the monosaccharides

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.

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

Inhalation	Possible allergic reaction to the material, reaction can be acute.
Ingestion	Possible allergic reaction to the material, reaction can be acute.
Skin	Possible allergic reaction to the material, reaction can be acute.
Eyes	Possible allergic reaction to the material, reaction can be acute.

Signs and symptoms of exposure
Possible hypersensitivity to material.

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

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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods
Any waste substances should be disposed of by a licensed professional disposal company.
Contaminated packaging
Dispose of as a used product/material.

SECTION 14. TRANSPORT INFORMATION

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 Packing 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

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

15.1. Safety, health and environmental regulations/legislation specific to the substance or mixture
No data available

15.2 Chemical Safety Assessment
No data available

Please note that the label elements that used to go in Section 15 are now in Section 2.

SECTION 16. OTHER INFORMATION

The advice offered is derived from the currently 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.