

# Magnesium D-gluconate hydrate

sc-221868



The Power to Question

## Material Safety Data Sheet

Hazard Alert Code  
Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

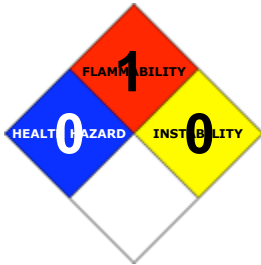
### PRODUCT NAME

Magnesium D-gluconate hydrate

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

C<sub>12</sub>H<sub>22</sub>MgO<sub>14</sub>·xH<sub>2</sub>O, "gluconic acid, magnesium salt", "D-gluconic acid, magnesium salt", "D-gluconic acid, hemimagnesium", "magnesium D-gluconate", Almora, Erimag, GYN, Menesia, "Mikroplex Magnesium", "Ultra Mg"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	
Toxicity	2	
Body Contact	0	
Reactivity	1	
Chronic	0	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4

## CANADIAN WHMIS SYMBOLS

None

## EMERGENCY OVERVIEW RISK

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident.

■ Accidental ingestion of the material may be damaging to the health of the individual.

■ Magnesium salts are generally absorbed so slowly that oral administration causes few toxic effects, as the dose is readily expelled via the bowel.

If evacuation fails, mucosal irritation and absorption may result.

##### EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).

Slight abrasive damage may also result.

##### SKIN

■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models).

Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

■ Solution of material in moisture on the skin, or perspiration, may increase irritant effects.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

##### INHALED

■ The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified using animal models).

Nevertheless, adverse effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

■ Not normally a hazard due to non-volatile nature of product.

#### CHRONIC HEALTH EFFECTS

■ Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
magnesium gluconate (C12-H22-O14.Mg)	3632-91-5	>99

## Section 4 - FIRST AID MEASURES

##### SWALLOWED

■

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open

airway and prevent aspiration.

#### **EYE**

■ If this product comes in contact with the eyes

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### **SKIN**

■ If skin or hair contact occurs

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

#### **INHALED**

■

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

#### **NOTES TO PHYSICIAN**

■ Magnesium is present in the blood, as a normal constituent, at concentrations between 1.6 to 2.2 meq/l. Some 30% is plasma bound.

### **Section 5 - FIRE FIGHTING MEASURES**

Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.
Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available.

#### **EXTINGUISHING MEDIA**

- Water spray or fog.
- Foam.

#### **FIRE FIGHTING**

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.

#### **GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

Combustion products include carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), metal oxides, other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

#### **FIRE INCOMPATIBILITY**

Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

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**Section 6 - ACCIDENTAL RELEASE MEASURES**

**MINOR SPILLS**

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

**MAJOR SPILLS**

Moderate hazard.

- CAUTION Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

**Section 7 - HANDLING AND STORAGE**

**PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

**RECOMMENDED STORAGE METHODS**

‡ Glass container.

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

**STORAGE REQUIREMENTS**

- Store in original containers.
- Keep containers securely sealed.

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE CONTROLS**

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
Canada - Ontario Occupational Exposure Limits	magnesium gluconate (C12-H22-O14.Mg) (Particles (Insoluble or Poorly Soluble) Not Otherwise)								10 (I)

Canada - British Columbia Occupational Exposure Limits	magnesium gluconate (C12-H22-O14.Mg) (Particles (Insoluble or Poorly Soluble) Not Otherwise Classified (PNOC))	10 (N)	
Canada - Ontario Occupational Exposure Limits	magnesium gluconate (C12-H22-O14.Mg) (Specified (PNOS) / Particules (insolubles ou peu solubles) non précisées par ailleurs)	3 (R)	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	magnesium gluconate (C12-H22-O14.Mg) (Particulates not otherwise regulated Respirable fraction)	5	
US - California Permissible Exposure Limits for Chemical Contaminants	magnesium gluconate (C12-H22-O14.Mg) (Particulates not otherwise regulated Respirable fraction)	5	(n)
US - Oregon Permissible Exposure Limits (Z-1)	magnesium gluconate (C12-H22-O14.Mg) (Particulates not otherwise regulated (PNOR) (f) Total Dust)	10	Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means "particles not otherwise regulated."
US - Michigan Exposure Limits for Air Contaminants	magnesium gluconate (C12-H22-O14.Mg) (Particulates not otherwise regulated, Respirable dust)	5	
US - Oregon Permissible Exposure Limits (Z-1)	magnesium gluconate (C12-H22-O14.Mg) (Particulates not otherwise regulated (PNOR) (f) Respirable Fraction)	5	Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means "particles not otherwise regulated."

US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	magnesium gluconate (C12-H22-O14.Mg) (Particulates not otherwise regulated (PNOR)(f)- Respirable fraction)	5
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Canada - Prince Edward Island Occupational Exposure Limits	magnesium gluconate (C12-H22-O14.Mg) (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)	10	See Appendix B current TLV/BEI Book
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**PERSONAL PROTECTION**



**RESPIRATOR**

•Particulate. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

**EYE**

- Safety glasses with side shields
- Chemical goggles.

**HANDS/FEET**

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

- Overalls.
- P.V.C. apron.

- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

#### ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

#### PHYSICAL PROPERTIES

Solid.

Mixes with water.

State	Divided solid	Molecular Weight	414.60 (anhydrous basis)
Melting Range (°F)	Not available.	Viscosity	Not Applicable
Boiling Range (°F)	Not available.	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not available	pH (1% solution)	Not available.
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available.	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

#### APPEARANCE

Tasteless crystals or powder, fine needles or granules; mixes with water.

### Section 10 - CHEMICAL STABILITY

#### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

#### STORAGE INCOMPATIBILITY

‡ Avoid strong acids.

Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

### Section 11 - TOXICOLOGICAL INFORMATION

magnesium gluconate (C12-H22-O14.Mg)

#### TOXICITY AND IRRITATION

MAGNESIUM GLUCONATE (C12-H22-O14.MG)

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Intravenous (mouse) LD50 321 mg/kg	Nil Reported

### Section 12 - ECOLOGICAL INFORMATION

No data

### Section 13 - DISPOSAL CONSIDERATIONS

#### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

‡ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

### Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

### Section 15 - REGULATORY INFORMATION

**magnesium gluconate (C12-H22-O14.Mg) (CAS: 3632-91-5,59625-89-7) is found on the following regulatory lists;**

"Canada Domestic Substances List (DSL)", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "US Food Additive Database", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

### Section 16 - OTHER INFORMATION

#### LIMITED EVIDENCE

■ Ingestion may produce health damage\*.

\* (limited evidence).

#### Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
magnesium gluconate (C12- H22- O14.Mg)	3632- 91- 5	Xn; R22
magnesium gluconate (C12- H22- O14.Mg)	59625- 89- 7	Xn; R22

#### Ingredients with multiple CAS Nos

Ingredient Name	CAS
magnesium gluconate (C12-H22-O14.Mg)	3632-91-5, 59625-89-7

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: [www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Oct-13-2009

Print Date: Sep-29-2011