

## SAFETY DATA SHEET

---

### 1. SUBSTANCE AND SOURCE IDENTIFICATION

---

#### Product Identifier

**SRM Number:** 929a

**SRM Name:** Magnesium Gluconate

**Other Means of Identification:** Not applicable.

#### Recommended Use of This Material and Restrictions of Use

The certified values delivered by this Standard Reference Material (SRM) are intended for validating methods for magnesium analysis and for the routine critical evaluation of daily working standards used in these procedures. A unit of SRM 929a consists of 5 g of magnesium gluconate dihydrate:  $\text{Mg}(\text{C}_6\text{H}_{11}\text{O}_7)_2 \cdot 2\text{H}_2\text{O}$ .

#### Company Information

National Institute of Standards and Technology  
Standard Reference Materials Program  
100 Bureau Drive, Stop 2300  
Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200

E-mail: [SRMMSDS@nist.gov](mailto:SRMMSDS@nist.gov)

Website: <https://www.nist.gov/srm>

Emergency Telephone ChemTrec:

1-800-424-9300 (North America)

+1-703-527-3887 (International)

---

### 2. HAZARDS IDENTIFICATION

---

#### Classification

**Physical Hazard:** Not classified.

**Health Hazard:** Not classified.

#### Label Elements

##### Symbol

No symbol/No pictogram.

##### Signal Word

No signal word.

**Hazard Statement(s):** Not applicable.

**Precautionary Statement(s):** Not applicable.

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients(s) with Unknown Acute Toxicity:** Not applicable.

---

### 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

---

**Substance:** Magnesium gluconate dihydrate

**Other Designations:** D-Gluconic acid, magnesium salt (2:1), dihydrate; magnesium D-gluconate dihydrate

Components are listed in compliance with OSHA's 29 CFR 1910.1200.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Magnesium gluconate dihydrate	59625-89-7	not applicable	100

---

## 4. FIRST AID MEASURES

---

### Description of First Aid Measures

**Inhalation:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**Skin Contact:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:** If a large amount is swallowed, get medical attention.

**Most Important Symptoms/Effects, Acute and Delayed:** May cause mild or mechanical eye, skin, or respiratory tract irritation.

**Indication of any immediate medical attention and special treatment needed, if necessary:** If any of the above symptoms are present, seek immediate medical attention.

---

## 5. Fire Fighting Measures

---

**Fire and Explosion Hazards:** Negligible fire hazard. Dust/air mixtures may ignite or explode. See Section 9, "Physical and Chemical Properties" for flammability properties.

### Extinguishing Media

Suitable: Regular dry chemical, carbon dioxide, water, or alcohol-resistant foam.

Unsuitable: None listed.

**Specific Hazards Arising from the Chemical:** Not applicable.

**Special Protective Equipment and Precautions for Fire-Fighters:** Move container from fire area if it can be done without personal risk. Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

---

## 6. ACCIDENTAL RELEASE MEASURES

---

**Personal Precautions, Protective Equipment and Emergency Procedures:** Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection". Keep out of waters supplies and sewers.

**Methods and Materials for Containment and Clean up:** Collect in appropriate container for disposal.

---

## 7. HANDLING AND STORAGE

---

**Safe Handling Precautions:** Avoid dust formation. Negligible fire hazard. See Section 8, "Exposure Controls and Personal Protection".

**Storage:** Store in a well-ventilated area. Keep separated from incompatible substances (see Section 10, "Stability and Reactivity").

---

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

---

**Exposure Limits:** This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. No occupational exposure limits have been established for magnesium gluconate dihydrate. The exposure limits for Particulates Not Otherwise Regulated are applicable.

OSHA (PEL): 15 mg/m<sup>3</sup> (TWA, total dust)  
5 mg/m<sup>3</sup> (TWA, respirable fraction)

NIOSH (REL): 15 mg/m<sup>3</sup> (TWA, total dust)  
5 mg/m<sup>3</sup> (TWA, respirable fraction)

**Engineering Controls:** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Personal Protection Measures:** In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

**Respiratory Protection:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye Protection:** Splash resistant safety goggles and emergency eyewash are recommended.

**Skin and Body Protection:** Chemical resistant clothing and gloves are recommended.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

Properties	Magnesium gluconate dihydrate
Molar Mass (g/mol)	452.67
Molecular Formula	$\text{Mg}(\text{C}_6\text{H}_{11}\text{O}_7)_2 \cdot 2\text{H}_2\text{O}$
Appearance (physical state, color, etc.)	white to off-white, colorless powder
Odor	odorless
Odor threshold	not available
pH	not available
Evaporation rate	not available
Melting point/freezing point	200 °C (392 °F)
Density	not available
Vapor Pressure	not available
Vapor Density (air = 1)	not available
Viscosity	not available
Solubilities	water: 16 % at 25 °C; insoluble in ether
Partition coefficient (n-octanol/water)	not available
Particle Size	not available

### Thermal Stability Properties

Autoignition Temperature	>1200 °C (2192 °F)
Thermal Decomposition	not available
Initial boiling point and boiling range	not available
Explosive Limits, LEL (Volume %)	not available
Explosive Limits, UEL (Volume %)	not available
Flash Point (Closed Cup)	not available
Flammability (solid, gas)	not available

---

## 10. STABILITY AND REACTIVITY

---

**Reactivity:** Stable at normal temperatures and pressure.

**Stability:**   X   Stable        Unstable

**Possible Hazardous Reactions:** Not applicable.

**Conditions to Avoid:** None reported.

**Incompatible Materials:** Oxidizing materials.

**Hazardous Decomposition:** Miscellaneous decomposition products.

**Hazardous Polymerization:**        Will Occur   X   Will Not Occur

---

## 11. TOXICOLOGICAL INFORMATION

---

**Route of Exposure:**   X   Inhalation   X   Skin   X   Ingestion

**Symptoms Related to the Physical, Chemical and Toxicological Characteristics:** May cause mild or mechanical eye, skin, or respiratory tract irritation.

**Potential Health Effects (Acute, Chronic, and Delayed)**

**Inhalation:** May cause irritation.

**Skin Contact:** May cause irritation.

**Eye Contact:** May cause irritation.

**Ingestion:** No data available.

**Numerical Measures of Toxicity**

**Acute Toxicity:** Not classified; no data available.

**Skin Corrosion/Irritation:** Not classified; no data available.

**Serious Eye Damage/Eye Irritation:** Not classified; no data available.

**Respiratory Sensitization:** Not classified; no data available.

**Skin Sensitization:** Not classified; no data available.

**Germ Cell Mutagenicity:** Not classified; no data available.

**Carcinogenicity:** Not classified; no data available.

**Listed as a Carcinogen/Potential Carcinogen** \_\_\_\_\_ **Yes** \_\_\_\_\_ **X** **No**

Magnesium gluconate dihydrate is not listed by IARC, NTP or OSHA as a carcinogen/potential carcinogen.

**Reproductive Toxicity:** Not classified; no data available.

**STOT, Single Exposure:** Not classified; no data available.

**STOT, Repeated Exposure:** Not classified; no data available.

**Aspiration Hazard:** Not applicable.

---

**12. ECOLOGICAL INFORMATION**

---

**Ecotoxicity Data:** No data available.

**Persistence and Degradability:** No data available.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other Adverse effects:** No data available.

---

**13. DISPOSAL CONSIDERATIONS**

---

**Waste Disposal:** Dispose in accordance with all applicable federal, state, and local regulations.

---

**14. TRANSPORTATION INFORMATION**

---

**U.S. DOT and IATA:** This material is not regulated by DOT or IATA.

---

**15. REGULATORY INFORMATION**

---

**U.S. Regulations**

CERCLA Sections 102a/103 (40 CFR 302.4):

SARA Title III Section 302 (40 CFR 355.30):

SARA Title III Section 304 (40 CFR 355.40):

SARA Title III Section 313 (40 CFR 372.65):

OSHA Process Safety (29 CFR 1910.119):

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

ACUTE HEALTH: No.  
 CHRONIC HEALTH: No.  
 FIRE: No.  
 REACTIVE: No.  
 PRESSURE: No.

**State Regulations:**

California Proposition 65: Not regulated.

**U.S. TSCA Inventory:** Not listed.

**TSCA 12(b), Export Notification:** Not listed.

**Canadian Regulations:**

WHMIS Information: Not provided for this material.

---

**16. OTHER INFORMATION**

---

**Issue Date:** 10 February 2025

**Sources:** ChemADVISOR, Inc., *SDS Magnesium Gluconate, Dihydrate*, 22 September 2015.

CDC; NIOSH; *NIOSH Pocket Guide to Chemical Hazards*; Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), National Institute for Safety and Health; *Particulates Not Otherwise Regulated*, 30 October 2019; available at <https://www.cdc.gov/niosh/npg/npgd0480.html> (accessed Feb 2025).

**Key of Acronyms:**

ACGIH	American Conference of Governmental Industrial Hygienists	NIST	National Institute of Standards and Technology
ALI	Annual Limit on Intake	NRC	Nuclear Regulatory Commission
CAS	Chemical Abstracts Service	NTP	National Toxicology Program
CEN	European Committee for Standardization	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
CPSU	Coal Mine Dust Personal Sample Unit	REL	Recommended Exposure Limit
DOT	Department of Transportation	RM	Reference Material
EC50	Effective Concentration, 50 %	RQ	Reportable Quantity
EINECS	European Inventory of Existing Commercial Chemical Substances	RTECS	Registry of Toxic Effects of Chemical Substances
EPCRA	Emergency Planning and Community Right-to-Know Act	SARA	Superfund Amendments and Reauthorization Act
IARC	International Agency for Research on Cancer	SCBA	Self-Contained Breathing Apparatus
IATA	International Air Transport Association	SDS	Safety Data Sheet
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
ISO	International Organization for Standardization	STEL	Short Term Exposure Limit
LC50	Lethal Concentration, 50 %	TDLo	Toxic Dose Low
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
MSHA	Mine Safety and Health Administration	TWA	Time Weighted Average
NIOSH	National Institute for Occupational Safety and Health	UEL	Upper Explosive Limit
		WHMIS	Workplace Hazardous Materials Information System

**Disclaimer:** The NIST SDS information is specific to the NIST product and is believed to be correct, based upon our current knowledge. The SDS may not necessarily be all inclusive and should be used only as a guide. NIST does not guarantee the accuracy or completeness of this information. The only official source for specific values and uncertainties is the certificate or report.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; e-mail [srmmsds@nist.gov](mailto:srmmsds@nist.gov); or via the Internet at <https://www.nist.gov/srm>.