

MSDS Number: **M0090** \* \* \* \* \* *Effective Date: 08/10/04* \* \* \* \* \* *Supersedes: 11/02/01*

# MSDS **Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



Mallinckrodt  
CHEMICALS



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

## MAGNESIUM METAL, TURNINGS AND RIBBON

### 1. Product Identification

**Synonyms:** Magnesium ribbon, magnesium clipping, magnesium turnings

**CAS No.:** 7439-95-4

**Molecular Weight:** 24.31

**Chemical Formula:** Mg

**Product Codes:**

J.T. Baker: 2418, 2420

Mallinckrodt: 5918, 5922

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
-----	-----	-----
Magnesium Metal	7439-95-4	99 - 100%
Yes		

### 3. Hazards Identification

#### Emergency Overview

-----

**WARNING! FLAMMABLE SOLID. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

**J.T. Baker SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

-----  
Health Rating: 1 - Slight

Flammability Rating: 3 - Severe (Flammable)

Reactivity Rating: 3 - Severe (Water Reactive)

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; CLASS D EXTINGUISHER

Storage Color Code: Red Stripe (Store Separately)  
-----

**Potential Health Effects**  
-----

**Inhalation:**

Inhalation of dusts or fumes may irritate the respiratory tract and may cause metal fume fever. Symptoms may include coughing, chest pain, fever, and leukocytosis.

**Ingestion:**

Magnesium metal does not have well-characterized toxicity. May cause abdominal pain and diarrhea.

**Skin Contact:**

Particles embedded in the skin may cause eruptions. Molten magnesium may cause serious skin burns.

**Eye Contact:**

High concentrations of dust may cause mechanical irritation. Watching a magnesium fire can cause eye injury.

**Chronic Exposure:**

No information found.

**Aggravation of Pre-existing Conditions:**

Existing wounds contaminated with magnesium are very slow to heal.

---

## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

**Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

---

## 5. Fire Fighting Measures

**Fire:**

Autoignition temperature: 473C (883F)

When heated in air to a temperature near its melting point, magnesium may ignite and burn. Dangerous in the form of dust or flakes, and when exposed to flame or by violent chemical reaction with oxidizing agents. Magnesium may

react with moisture or acids to evolve hydrogen gas, which is a highly dangerous fire or explosion hazard.

Autoignition temperature is for Magnesium turnings or ribbon.

**Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosible concentration 0.030 grams/liter. Water used on molten magnesium will produce hydrogen gas and may cause an explosion.

**Fire Extinguishing Media:**

Use metal extinguishing powders such as G-1® graphite powder, Met-L-X® powder, powdered talc, dry graphite, powdered sodium chloride, soda ash, or dry sand. Warning! Do not use foam, chlorinated products such as Halon®, carbon dioxide, or water to extinguish magnesium fires, because dangerous reactions will occur. Use of water on molten magnesium will produce hydrogen gas and may cause an explosion.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Fire fighters should protect their eyes and skin from flying particles. In order to prevent eye injury, do not look directly at magnesium fires.

---

## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate the area of the spill or leak. Wear appropriate personal protective equipment as specified in Section 8. Collect the spilled material and transfer to a clean, dry metal covered container for recovery or disposal. Do not use water in the collection process. If the spilled magnesium has come into contact with water, proceed with caution. Hydrogen gas may be generated, which may cause a fire or explosion. Evacuate the area, put on fire fighting protective equipment and proceed as with a metal fire.

---

## 7. Handling and Storage

Keep in tightly closed container. Store in a cool, dry, ventilated area. Protect against physical damage. Store finely divided powder, chips or shavings in detached fire-resistant building, protected from moisture and away from oxidizers, chlorine, bromine, iodine, acids, and all possible sources of ignition. Heavier sections may be stored in the open. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

---

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

None established.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine,

etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

---

## 9. Physical and Chemical Properties

**Appearance:**

Silver solid.

**Odor:**

Odorless.

**Solubility:**

Insoluble in water.

**Specific Gravity:**

1.74 @ 20C (68F) (solid)

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

1100C (2012F)

**Melting Point:**

649C (1200F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

1.0 @ 621C (1150F)

**Evaporation Rate (BuAc=1):**

No information found.

---

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage. Slowly oxidizes in moist air.

**Hazardous Decomposition Products:**

Toxic gases and vapors may be released if involved in a fire.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Magnesium reacts dangerously with many substances, including oxidizers, carbonates, cyanides, chlorinated hydrocarbons, sulfates, acids, and other metals. Please refer to the NFPA publication "Fire Protection Guide on Hazardous Materials" most recent edition for details. Reacts with acids to form hydrogen gas.

**Conditions to Avoid:**

Moisture, heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Magnesium Metal (7439-95-4)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

**Domestic (Land, D.O.T.)**

**Proper Shipping Name:** MAGNESIUM

**Hazard Class:** 4.1

**UN/NA:** UN1869

**Packing Group:** III

**Information reported for product/size:** 500G

**International (Water, I.M.O.)**

**Proper Shipping Name:** MAGNESIUM

**Hazard Class:** 4.1

**UN/NA:** UN1869

**Packing Group:** III

**Information reported for product/size:** 500G

## 15. Regulatory Information

```

-----\Chemical Inventory Status - Part 1\-----
Ingredient                               TSCA  EC   Japan  Australia
-----
Magnesium Metal (7439-95-4)             Yes  Yes   No

```

Yes

```

-----\Chemical Inventory Status - Part 2\-----
Ingredient                               Korea  DSL   NDSL  Phil.
-----
Magnesium Metal (7439-95-4)             Yes   Yes   No    Yes

```

```

-----\Federal, State & International Regulations - Part 1\-----
Ingredient                               -SARA 302-  -SARA 313-
RQ    TPQ    List  Chemical Catg.
-----
Magnesium Metal (7439-95-4)             No    No    No    No

```

```

-----\Federal, State & International Regulations - Part 2\-----
Ingredient                               CERCLA  -RCRA-  -TSCA-
                               261.33  8(d)
-----
Magnesium Metal (7439-95-4)             No      No      No

```

Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
 SARA 311/312: Acute: Yes      Chronic: No      Fire: Yes      Pressure: No  
 Reactivity: Yes      (Pure / Solid)

**Australian Hazchem Code:** 4[Y]

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: **0** Flammability: **1** Reactivity: **1** Other: **Water reactive**

**Label Hazard Warning:**

WARNING! FLAMMABLE SOLID. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

**Label Precautions:**

Keep away from heat, sparks and flame.  
 Avoid contact with eyes, skin and clothing.  
 Avoid breathing dust.  
 Use with adequate ventilation.  
 Keep container closed.

Wash thoroughly after handling.

**Label First Aid:**

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No Changes.

**Disclaimer:**

\*\*\*\*\*

**Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.**

\*\*\*\*\*

**Prepared by:** Environmental Health & Safety

Phone Number: (314) 654-1600 (U.S.A.)