

## 1. IDENTIFICATION

### 1.1 Product Identifier

**Product Name:** Sintered Ferrite Permanent Magnets

**Other Means of Identification:** N/A

### 1.2 Intended Use of Product

**Product Use:** Permanent Magnet, various forms and uses, manufacture of articles.

### 1.3 Name, Address, and Telephone of the Responsible Party

**Supplier:** Adams Magnetic Products  
888 Larch Avenue  
Elmhurst, IL 60126  
Tel: 1(360) 617-8880

### 1.4 Emergency Telephone Number

**Emergency Contact Number:** 1(360) 617-8880

## 2. HAZARD IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

**Classification (GHS-US)** Not classified

### 2.2 Label Elements

**GHS-US Labeling** No labeling applicable

### 2.3 Other Hazards

Solid ceramic products are generally considered "articles" and do not constitute hazardous materials in solid form under the definitions of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Any articles manufactured from these solid alloys would generally be classified as non-hazardous. However some hazardous elements contained in these alloys can be emitted under certain processing conditions such as but not limited to: grinding, machining, milling, sawing, cutting and melting. The alloy in a bulk state presents no fire or explosion hazard.

### 2.4 Unknown Acute Toxicity (GHS-US)

No data available

## 3. COMPOSITION/INFORMAITON ON INGREDIENTS

### 3.1 Classification of Mixture

Name	Product Identifier	%	Classification (GHS-US)
Iron	(CAS No) 1317-61-9	Bal	Comb. Dust Flam. Sol. 1, H228 Self-heat. 1, H251
Strontium	(CAS No) 1314-11-0	8-10	Skin Corr. 1B, H314 Eye Dam. 1, H318
Aluminum	(CAS No) 7429-90-5	LT 1.0	Comb. Dust Flam. Sol. 1, H228 Water-react. 2, H261

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

Silicon	(CAS No) 7440-21-3	LT 1.0	Not Classified
---------	--------------------	--------	----------------

## 4. FIRST AID MEASURES

### 4.1 Description of First Aid Measures

- General Information:** If concerned regarding exposure seek professional medical advice. Have product SDS on hand. Never give anything by mouth to an unconscious person.
- Inhalation:** If symptoms develop remove to fresh air and ventilate suspect area. Keep at rest in a position most comfortable for breathing. Obtain medical attention if breathing difficulty persists.
- Skin Contact:** If symptoms develop wash affected area immediately with soap and water. Rinse with water. Remove and wash affected clothing. Obtain medical attention if skin irritation persists.
- Eye Contact:** If symptoms develop immediately rise with water (at least 15 minutes) while holding eyelids open. If present and easy to do so, remove contact lenses. Recommence rinsing. Obtain medical attention if eye irritation persists.
- Ingestion:** Immediately rinse mouth with water. Do NOT induce vomiting. Contact a poison control center or doctor/physician.

### 4.2 Most Important Symptoms and effects, both acute and delayed

- Symptoms, General:** Ceramic Ferrite as a bulk solid is not likely to present any acute or chronic health effects. However during processing (cutting, grinding, milling, or sawing) emitted byproducts or particulate may cause irritations to the eyes (itching/burning), respiratory tract (coughing/ wheezing), and/ or skin.
- Symptoms, Inhalation:** Inhalation of particulate may cause coughing, and shortness of breath.
- Symptoms, Skin Contact:** May cause skin reaction. Particulate from physical alteration of this product can cause skin irritation. Contact with heated material will cause thermal burns. Dust may cause irritation in skin folds or by contact in combination with tight fitting clothing. Abrasion via flying particles is possible.
- Symptoms, Eye Contact:** Particulate may cause irritation to eyes, nose throat and lungs. Processing may produce slivers which could cause mechanical injure to the eye.
- Symptoms, ingestion:** If large amounts are ingested: Gastrointestinal irritation.
- Symptoms, Chronic:** In bulk form, no hazards exist. If physically altered to present slivers, ribbons, or particulate: Aluminum: Inhalation of finely divided aluminum powder may cause pulmonary fibrosis.

### 4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

If concerned regarding exposure seek professional medical advice. Have product SDS on hand.

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing Media

- Suitable Extinguishing Media:** Not flammable. Use extinguishing media suitable for surrounding fire, including but not limited to water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

**Unsuitable Extinguishing Media:** No data available

## 5.2 Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Not explosive.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

## 5.3 Advice for Firefighters

**Precautionary Measures Fire:** Observe precautions relevant to surrounding fire.

**Firefighting Instructions:** Firefighting measures should be appropriate for surrounding fire.

**Protection during Firefighting:** Firefighters should use full bunker gear including NIOSH-approved positive-pressure self-contained breathing apparatus if necessary

**Hazardous Combustion Products:** No data available

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Do not handle until all safety precautions have been read and understood. Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. For personal protection see section 8

### 6.2 Environmental Precautions

Prevent entry into sewers and public waters

### 6.3 Methods and Material for Containment and Cleaning Up

**For Containment:** Contain and collect as any solid

**Methods for Cleaning Up:** Clear up spill immediately and dispose of waste safely. For particulates and dust: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use PPE described in Section 8. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

### 6.4 Reference to Other Sections

See section 8, Exposure controls and personal protection. Concerning disposal elimination after cleaning see item 13

## 7. HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

**Additional Hazards When Processed:** Use care during processing to minimize generation of dust. Employ wet machining techniques to reduce particulate proliferation. Where excessive dust may result, use approved respiratory protection equipment. Ensure proper ventilation is employed, proper precautions are enforced, and applicable regulations are followed.

**Precautions for Safe Handling:** Avoid creating or spreading dust. Avoid breathing dust. Do not eat drink or smoke while handling this product. Always wash hands after handling product. Always wear proper PPE. Ensure adequate ventilation.

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

**Advice on General Occupational Hygiene:** Handle in accordance with good industrial hygiene and safety procedures. Do not eat drink or smoke when handling this product. Wash hands and other exposed areas with soap and water before eating drinking or smoking. Wash contaminated clothing before reuse.

## 7.2 Conditions for Safe Storage, Including Any Incompatibilities

**Storage Conditions:** Store in a cool, dry well-ventilated area.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers, alkalis, and corrosive atmospheres.

## 7.3 Specific End Uses

Permanent magnet products

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), or Mexican government.

Aluminum (7429-90-5)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
Silicon (7440-21-3)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust)
USA IDLH	US IDLH (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (dust & fume)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)

### 8.2 Exposure Controls

**Appropriate Engineering Controls:** Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection device. Ensure all national/ local regulations are observed.

**Personal Protective Equipment:** For general product handling no PPE is required. When processing material protective clothing, gloves, safety glasses, dusk masks, or other respiratory protection should be used as necessary.

**Materials for Protective Clothing:** Wear chemically resistant materials and fabrics. With hot material wear thermally proactive clothing.

**Hand Protection:** Wear chemically resistant protective gloves. If material is hot, wear thermally resistant protective gloves.

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

<b>Eye Protection:</b>	Chemical goggles, or safety glasses
<b>Respiratory Protection:</b>	Use a NOISH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

<b>Physical State</b>	: Solid
<b>Appearance</b>	: Metallic
<b>Color</b>	: Matte dark grey
<b>Odor</b>	: Odorless
<b>Odor Threshold</b>	: No data available
<b>pH</b>	: No data available
<b>Evaporation Rate</b>	: No data available
<b>Melting Point</b>	: No data available
<b>Freezing Point</b>	: No data available
<b>Boiling Point</b>	: No data available
<b>Auto-ignition Temperature</b>	: No data available
<b>Decomposition Temperature</b>	: No data available
<b>Flammability (solid, gas)</b>	: No data available
<b>Vapor Pressure</b>	: No data available
<b>Relative Vapor Density at 20 °C</b>	: No data available
<b>Relative Density</b>	: No data available
<b>Specific Gravity</b>	: 4.5 – 4.9
<b>Solubility</b>	: Water: Insoluble
<b>Partition Coefficient: N-octanol/water</b>	: No data available
<b>Viscosity</b>	: No data available
<b>Explosive Properties</b>	: None
<b>Oxidation Properties</b>	: None

### 9.2 Other Information

No additional information available

## 10. STABILITY AND REACTIVITY

<b>10.1 Reactivity:</b>	Hazardous reactions will not occur under normal conditions.
<b>10.2 Chemical Stability:</b>	Stable under recommended handling storage conditions (see section 7).
<b>10.3 Possibility of Hazardous Reactions:</b>	Hazardous polymerization will not occur.
<b>10.4 Conditions to Avoid:</b>	Avoid creating or spreading dust.
<b>10.5 Incompatible Materials:</b>	Strong acids, strong bases, strong oxidizers, alkalis, corrosive substances.
<b>10.6 Hazardous Decomposition Products:</b>	Metal oxides.

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects - Product

Acute Toxicity:	Not classified
LD50 and LC50 Data	: Not available
Skin Corrosion/Irritation	: Not classified
Serious Eye Damage/Irritation	: Not classified
Respiratory Skin Sensitization	: Not classified
Germ Cell Mutagenicity	: Not classified
Teratogenicity	: Not classified
Carcinogenicity	: Not classified
Specific Target Organ Toxicity (Repeated Exposure)	: Not classified
Reproductive Toxicity	: Not classified
Specific Target Organ Toxicity (Single Exposure)	: Not classified
Aspiration Hazard	: Not classified

**Symptoms/Injuries after Inhalation** Inhalation of particulate may cause coughing, throat irritation, and shortness of breath.

**Symptoms/Injuries after Skin Contact:** May cause an allergic skin reaction. Dust from physical alteration of this product can cause skin irritation. Contact with powder will irritate skin. Contact with hot material will cause thermal burns. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Mechanical damage via flying particles is possible.

**Chronic Symptoms:** In bulk form no hazard exists. Tissue Damage of the mucous membranes may follow chronic dust exposure.

### 11.2 Information on Toxicological Effects - Ingredients

LD50 and LC50 Data:

Iron (7439-89-6)	
LD50 Oral Rat	98.6 g/kg
ATE (Oral)	98,600.00 mg/kg

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No data available

### 12.2 Persistence and Degradability

Ceramic Ferrite All Grades	
Persistence and Degradability	Not readily biodegradable

### 12.3 Bioaccumulative Potential

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

## Ceramic Ferrite All Grades

Bioaccumulative Potential	Not established
---------------------------	-----------------

### 12.4 Mobility in Soil

Not available

### 12.5 Other Adverse Effects

**Additional Information:** Avoid release to the environment, recycle whenever possible.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

**Waste Treatment Methods:** Recycle products or dispose properly.

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, and international regulations.

## 14. TRANSPORT INFORMATION

**14.1 In Accordance with DOT:** Not regulated for transport

**14.2 In Accordance with IMDG:** Not regulated for transport

**14.3 In Accordance with IATA:** See IATA dangerous goods regulations, section 3.9.2.2 – magnetized material. See also packing instruction 953; section 9.3.11, loading of magnetized materials; and section 7.4.1, Class 9 magnetized material labeling.

**14.4 In Accordance With TDG:** Not regulated for transport

## 15. REGULATORY INFORMATION

### 15.1 US Federal Regulations

#### Iron (7439-89-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Aluminum (7429-90-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on United States SARA Section 313

#### SARA Section 313 - Emission Reporting

1.0 % (dust or fume only)

#### Strontium (1314-11-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Silicon (7440-21-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2 US State Regulations

#### Aluminum (7429-90-5)

# Ceramic Ferrite Permanent Magnets, All Grades

Safety Data Sheet  
Revision Date: 02-16-18

Rev. 2

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

## Strontium (1314-11-0)

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

## Silicon (7440-21-3)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

## 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LATEST REV

**Revision Date:** 02/16/2018

**Other Information:** This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

### GHS Full Text Phrases:

Comb. Dust	Combustible Dust
Flam. Sol. 1	Flammable solids Category 1
Self-heat. 1	Self-heating substances and mixtures Category 1
Skin Corr. 1B	Skin corrosion/ irritation Category 1B
Eye Dam. 1	Serious eye damage /eye irritation Category 1
Water-react. 2	Substances and mixtures which, in contact with water, emit flammable gases Category 2
H228	Flammable solid: May form combustible dust concentrations in air
H251	Self-heating: may catch fire
H261	In contact with water releases flammable gases
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Cause serious eye damage

**Prepared by:** **Adams Magnetic Products**  
888 Larch Avenue  
Elmhurst, IL 60126  
Tel: (360) 617-8880  
[www.adamsmagnetic.com](http://www.adamsmagnetic.com)

**Disclaimer:** The information and recommendations contained herein are based upon data believed to be correct. However no guarantee or warranty of any kind, expressed or implied, is made with respect to the accuracy of this data or results obtained from the use thereof. Adams Magnetic Products accepts no responsibility and disclaims all liability for any harmful effects which may be caused by exposure to products described herein.