

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING****Product identifier**

**Product Name** Aluminum Oxide Powder

**Product Code(s)** 40-6425-400-080, 40-6430-600-080, 40-6603-030-080, 40-6605-050-080,  
40-6609-095-080, 40-6612-125-080

**(M)SDS Number** 1339775\_A

**Other means of identification**

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Laboratory Use Only

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Manufacturer** Buehler

**Manufacturer Address** 41 Waukegan Rd  
Lake Bluff, IL 60044  
www.buehler.com

**Phone number** +1 847 295 6500

**E-mail Address** custserv@buehler.com

**Emergency telephone number**

Global Access Code: 334545  
Americas: +1 760 476 3962 Asia Pacific: +1 760 476 3960  
Middle East/Africa: +1 760 476 3959 Europe: +1 760 476 3961


**2. HAZARDS IDENTIFICATION****Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Carcinogenicity	Category 2
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**GHS Label elements, including precautionary statements**

Emergency Overview

<b>Signal word</b>	<b>Warning</b>		
<b>Hazard Statements</b>	Suspected of causing cancer		
			
<b>Appearance</b>	Gray	<b>Physical state</b>	Powder(s)
			<b>Odor</b> Odorless

**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Unknown Toxicity**

6 % of the mixture consists of ingredient(s) of unknown toxicity

**Other information**

No information available

**Interactions with Other Chemicals**

No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%	Trade Secret
Aluminum oxide	1344-28-1	90 - 100%	*
Titanium dioxide	13463-67-7	0 - 10%	*
Iron oxide	1309-37-1	0 - 10%	*
Magnesium oxide	1309-48-4	< 0.5%	*
Calcium oxide	1305-78-8	< 0.6%	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret

## 4. FIRST AID MEASURES

### First aid measures

<b>Eye contact</b>	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
<b>Skin contact</b>	Wash with soap and water.
<b>Inhalation</b>	Remove to fresh air.
<b>Ingestion</b>	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person.

### Most important symptoms and effects, both acute and delayed

<b>Most Important Symptoms and Effects</b>	No information available.
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### Indication of any immediate medical attention and special treatment needed

<b>Notes to Physician</b>	Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

### Specific hazards arising from the chemical

No information available.

### Explosion Data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal precautions**                      Ensure adequate ventilation.

**Other Information**                         Refer to protective measures listed in Sections 7 and 8.

### Environmental precautions

**Environmental precautions**             See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

**Methods for containment**                Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**                 Pick up and transfer to properly labeled containers.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Handling**                                      Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage**                                        Keep containers tightly closed in a dry, cool and well-ventilated place.

**Incompatible Products**                    None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

**Exposure Guidelines**                      This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum oxide 1344-28-1	TWA: 1 mg/m <sup>3</sup> respirable particulate matter	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 10 mg/m <sup>3</sup> total dust	IDLH: 5000 mg/m <sup>3</sup>
Iron oxide 1309-37-1	TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> fume TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> fume and total dust Iron oxide (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	IDLH: 2500 mg/m <sup>3</sup> Fe dust and fume TWA: 5 mg/m <sup>3</sup> Fe dust and fume

		regulated under Rouge	
Magnesium oxide 1309-48-4	TWA: 10 mg/m <sup>3</sup> inhalable fraction	TWA: 15 mg/m <sup>3</sup> fume, total particulate (vacated) TWA: 10 mg/m <sup>3</sup> total particulate	IDLH: 750 mg/m <sup>3</sup> fume
Calcium oxide 1305-78-8	TWA: 2 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> (vacated) TWA: 5 mg/m <sup>3</sup>	IDLH: 25 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

**Appropriate engineering controls**

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** No special protective equipment required.

**Skin and body protection** Wear protective gloves and protective clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures** Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Physical and Chemical Properties**

<b>Physical state</b>	Powder(s)	<b>Odor</b>	Odorless
<b>Appearance</b>	Gray	<b>Odor Threshold</b>	No information available
<b>Color</b>	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
<b>pH</b>	No data available	None known	
<b>Melting / freezing point</b>	>2000°C (>3632°F)	None known	
<b>Boiling point / boiling range</b>	>2900°C (>5252°F)	None known	
<b>Flash Point</b>	No data available	None known	
<b>Evaporation Rate</b>	No data available	None known	
<b>Flammability (solid, gas)</b>	No data available	None known	
<b>Flammability Limit in Air</b>			
<b>Upper flammability limit</b>	No data available		
<b>Lower flammability limit</b>	No data available		
<b>Vapor pressure</b>	No data available	None known	
<b>Vapor density</b>	No data available	None known	
<b>Specific Gravity</b>	3.9 g/cm <sup>3</sup>	None known	
<b>Water Solubility</b>	Insoluble		
<b>Solubility in other solvents</b>	No data available	None known	
<b>Partition coefficient: n-octanol/water</b>	No data available	None known	
<b>Autoignition temperature</b>	No data available	None known	
<b>Decomposition temperature</b>	No data available	None known	

<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Explosive properties</b>	No data available	
<b>Oxidizing properties</b>	No data available	

**Other Information**

<b>Softening Point</b>	No data available
<b>VOC Content (%)</b>	No data available
<b>Particle Size</b>	No data available
<b>Particle Size Distribution</b>	

## 10. STABILITY AND REACTIVITY

**Reactivity**

No data available.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

None known based on information supplied.

**Incompatible materials**

None known based on information supplied.

**Hazardous Decomposition Products**

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available.

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum oxide 1344-28-1	> 5000 mg/kg ( Rat )	-	-
Titanium dioxide 13463-67-7	> 10000 mg/kg ( Rat )	-	-
Iron oxide 1309-37-1	> 10000 mg/kg ( Rat )	-	-
Calcium oxide 1305-78-8	= 500 mg/kg ( Rat )	-	-

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**Mutagenic Effects** No information available.

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Titanium dioxide 13463-67-7		Group 2B		X
Iron oxide 1309-37-1		Group 3		

*IARC (International Agency for Research on Cancer)*

*Group 2B - Possibly Carcinogenic to Humans*

*Group 3 - Not Classifiable as to Carcinogenicity in Humans*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

*X - Present*

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Chronic Toxicity** Contains a known or suspected carcinogen. Titanium dioxide has been classified by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B) by inhalation.

**Target Organ Effects** Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Lungs.

**Aspiration Hazard** No information available.

**Numerical measures of toxicity Product Information**

The following values are calculated based on chapter 3.1 of the GHS document

Not applicable

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Calcium oxide 1305-78-8		96h LC50: = 1070 mg/L (Cyprinus carpio)		

### Persistence and Degradability

No information available.

### Bioaccumulation

No information available

### Other adverse effects

No information available.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### **Disposal methods**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

#### **Contaminated Packaging**

Dispose of contents/containers in accordance with local regulations.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste
Calcium oxide 1305-78-8	Corrosive

## 14. TRANSPORT INFORMATION

**DOT**  
Proper Shipping Name  
Hazard Class

NOT REGULATED  
NON REGULATED  
N/A

**TDG**

NOT REGULATED

**MEX**

NOT REGULATED

**ICAO**

NOT REGULATED

**IATA**  
Proper Shipping Name

NOT REGULATED  
NON REGULATED

**IMDG/IMO**

NOT REGULATED



**RID** NOT REGULATED**ADR** NOT REGULATED**ADN** NOT REGULATED**15. REGULATORY INFORMATION****International Inventories**

TSCA Complies  
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Aluminum oxide - 1344-28-1	1344-28-1	90 - 100%	1.0%

**SARA 311/312 Hazard Categories**

Acute Health Hazard	No
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**US State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Aluminum oxide 1344-28-1	X	X	X	X	
Titanium dioxide 13463-67-7	X	X	X		
Iron oxide 1309-37-1	X	X	X		

Magnesium oxide 1309-48-4	X	X	X		
Calcium oxide 1305-78-8	X	X	X		

**International Regulations**

**Mexico**

**National occupational exposure limits**

Component	Carcinogen Status	Exposure Limits
Aluminum oxide 1344-28-1 ( 90 - 100% )		Mexico: TWA= 10 mg/m <sup>3</sup>
Titanium dioxide 13463-67-7 ( 0 - 10% )		Mexico: TWA= 10 mg/m <sup>3</sup> : STEL= 20 mg/m <sup>3</sup>
Iron oxide 1309-37-1 ( 0 - 10% )		Mexico: TWA 5 mg/m <sup>3</sup> : STEL 10 mg/m <sup>3</sup>
Magnesium oxide 1309-48-4 ( < 0.5% )		Mexico: TWA 10 mg/m <sup>3</sup>
Calcium oxide 1305-78-8 ( < 0.6% )		Mexico: TWA 2 mg/m <sup>3</sup>

Mexico - Occupational Exposure Limits - Carcinogens

**Canada**

**WHMIS Hazard Class**

Not determined

**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazards 1</b>	<b>Flammability 0</b>	<b>Instability 0</b>	<b>Physical and Chemical Hazards - Personal Protection</b>
<b>HMIS</b>	<b>Health Hazards 1*</b>	<b>Flammability 0</b>	<b>Physical Hazard 0</b>	

**Chronic Hazard Star Legend** \* = Chronic Health Hazard

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**Revision Note** No information available

**Disclaimer**

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**End of Safety Data Sheet**