



Safety Data Sheet

1. IDENTIFICATION

Product identifier

Product Name Aluminum Oxide

Other means of identification

SDS # CMC-030

Recommended use of the chemical and restrictions on use

Recommended Use Abrasive.

Details of the supplier of the safety data sheet

Supplier Address

Composition Materials Co., Inc.
249 Pepes Farm Road
Milford, CT 06460
1-203-874-6500 (Business)
1-203-874-6505 (Fax)

Emergency telephone number

Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Red powder and grains

Physical state Solid

Odor Odorless

Classification

Combustible dust

Signal Word

Warning

Hazard statements

May form combustible dust concentrations in air

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Aluminum Oxide	1344-28-1	90-95
Iron(III) oxide	1309-37-1	1-5
Aluminum Orthophosphate	7784-30-7	0.1-1

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice	Get medical attention if any discomfort develops.
Eye Contact	Flush eyes thoroughly with water for at least 15 minutes. Get medical attention if irritation develops or persists.
Skin Contact	Wash with soap and water. Get medical attention if irritation develops or persists.
Inhalation	Move to fresh air. Get medical attention if any discomfort continues.
Ingestion	Immediately rinse mouth and drink plenty of water. Get medical attention if irritation develops or persists.

Most important symptoms and effects, both acute and delayed

Symptoms	Causes mild skin irritation. Irritation of eyes and mucous membranes. Irritation of nose and throat.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	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 No restrictions known.

Specific Hazards Arising from the Chemical

Dust can form an explosive mixture with air.

Explosion Data

Sensitivity to Static Discharge AVOID GENERATING DUST. Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

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. Avoid inhalation of dust and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.

Environmental precautions

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. 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 Clean-Up	Carefully sweep, scoop or vacuum and place in suitable container. Avoid generating dust or accumulating dust. Avoid dust dispersal in the air (i.e. cleaning dust surfaces with compressed air). Spilled material can be a slipping hazard. Eliminate flames, sparks, excessive temperatures and oxidizing agents. Non-sparking tools should be used.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling	Provide adequate ventilation. Use work methods which minimize dust production. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Do not add wet alumina to electrolysis cells. Observe good industrial hygiene practices. Avoid generation of dust. Avoid breathing dusts. Avoid contact with skin and eyes. Minimize dust generation and accumulation. Ensure that dust does not accumulate on surfaces.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Store in closed, properly labeled containers in a cool, ventilated area. Do not transfer contents to bottles or other unlabeled containers. Keep away from heat, open flames and oxidizing agents.
Incompatible Materials	Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum Oxide 1344-28-1	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	-
Iron(III) oxide 1309-37-1	TWA: 5 mg/m ³ respirable particulate matter	TWA: 10 mg/m ³ fume TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ fume and total dust Iron oxide (vacated) TWA: 5 mg/m ³ respirable fraction regulated under Rouge	IDLH: 2500 mg/m ³ Fe dust and fume TWA: 5 mg/m ³ Fe dust and fume
Aluminum Orthophosphate 7784-30-7	TWA: 1 mg/m ³ respirable particulate matter	-	-

Appropriate engineering controls

Engineering Controls	Explosion-proof general and local exhaust ventilation. Use explosion proof electrical equipment for very high dust levels. Ensure ventilation and dust-handling systems prevent the escape of dust into work areas and there is no leakage from equipment. Eyewash stations. Showers.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear goggles/face shield. Refer to 29 CFR 1910.133 for eye and face protection regulations.
Skin and Body Protection	Wear protective gloves and protective clothing. Wear appropriate thermal protective clothing, when necessary. Refer to 29 CFR 1910.138 for appropriate skin and body protection.
Respiratory Protection	Nuisance dust mask 3M type 8710 or equivalent. (Recommended). Refer to 29 CFR 1910.134 for respiratory protection requirements.
General Hygiene Considerations	Wash hands thoroughly after handling. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice. Follow up on any medical surveillance requirements.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Odorless
Appearance	Red powder and grains	Odor Threshold	Not determined
Color	Red		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	9		
Melting point / freezing point	2040 °C / 3704 °F		
Initial boiling point and boiling range	No data available		
Flash point	No data available		
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	Not determined		
Flammability Limit in Air			
Upper flammability or explosive limits	No data available		
Lower flammability or explosive limits	No data available		
Vapor Pressure	Not determined		
Vapor Density	No data available		
Relative Density	3.97 g/cm ³	(20°C/68°F)	
Water Solubility	Insoluble in water		
Solubility in other solvents	Not determined		
Partition Coefficient	Not determined		
Autoignition temperature	No data available		
Decomposition temperature	Not determined		
Kinematic viscosity	Not determined		
Dynamic Viscosity	Not determined		
Explosive Properties	Dust can form an explosive mixture with air		
Oxidizing Properties	Not determined		

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Moisture.

Incompatible materials

Oxidizing agents.

Hazardous decomposition products

Metallic oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Avoid contact with eyes.

Skin Contact Avoid contact with skin.

Inhalation Do not inhale.

Ingestion Do not ingest.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Oxide 1344-28-1	> 5000 mg/kg (Rat)	-	-
Iron(III) oxide 1309-37-1	> 10000 mg/kg (Rat)	-	-
3-aminopropyltriethoxysilane 919-30-2	= 1780 mg/kg (Rat)	= 4290 mg/kg (Rabbit)	> 16 ppm (Rat) 6 h > 5 ppm (Rat) 6 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

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

Skin corrosion/irritation Causes mild skin irritation.

Carcinogenicity Group 3 IARC components are "not classifiable as human carcinogens".

Chemical name	ACGIH	IARC	NTP	OSHA
Iron(III) oxide 1309-37-1		Group 3		

Legend

*IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"*

Numerical measures of toxicity

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

Oral LD50 5,402.50 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea
Iron(III) oxide 1309-37-1		LC50: =100000mg/L (96h, Danio rerio)	
3-aminopropyltriethoxysilane 919-30-2		LC50: >934mg/L (96h, Danio rerio)	

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Not determined

Other adverse effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods**Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AIC
Aluminum Oxide	X	ACTIVE	X	X	X	X	X	X	X
Iron(III) oxide	X	ACTIVE	X	X	X	X	X	X	X
3-aminopropyltriethoxysilane	X	ACTIVE	X	X	X	X	X	X	X
Aluminum Orthophosphate	X	ACTIVE	X	X	X	X	X	X	X

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*
- ENCS - Japan Existing and New Chemical Substances*
- IECSC - China Inventory of Existing Chemical Substances*
- KECL - Korean Existing and Evaluated Chemical Substances*
- PICCS - Philippines Inventory of Chemicals and Chemical Substances*
- AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

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).

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Aluminum Oxide - 1344-28-1	1344-28-1	90-95	1.0

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)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Aluminum Oxide 1344-28-1	X	X	X
Iron(III) oxide 1309-37-1	X	X	X
Aluminum Orthophosphate 7784-30-7	X		

16. OTHER INFORMATION

Additional Product Information Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

<u>NFPA</u>	Health hazards 1	Flammability 0	Instability 0	Special hazards -
<u>HMIS</u>	Health hazards 1	Flammability 0	Physical hazards 0	Personal Protection Not determined

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Disclaimer
 The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet