

SECTION 1 - IDENTIFICATION

COMPANY ADDRESS:

The Virtual Foundry, LLC
211 S Water St
Stoughton, WI 53589
USA

PRODUCT NAME: Al₂O₃ Aluminum Oxide

PRODUCT USE: Sintering Refractory Ballast

SECTION 2 - HAZARDS IDENTIFICATION SUMMARY

Emergency Overview: Dust irritating to eyes and respiratory tract.

ROUTES OF ENTRY & SYMPTOMS:

Eye: Mechanical eye irritant. May cause tearing and redness.

Skin: Mechanical skin irritant. Prolonged contact may cause skin abrasion, redness, itching.

Sensitization: No data available.

Ingestion: May cause nausea and vomiting. No long-term health effects are anticipated.

Inhalation: Dust may be slightly irritating to respiratory tract. May cause coughing or shortness of breath.

Target Organs: Eyes, skin, respiratory system.

Acute Effects of Exposure: Exposure may include persistent cough, shortness of breath.

Chronic Effects of Exposure: N/A

Signs & Symptoms of Exposure: Coughing, shortness of breath

HMIS

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
Personal Protection	E

SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS

Chemical Name	CAS No.	EINECS	% by Weight	OSHA PEL (Exposure Guidelines)	
				Total (TWA)	Respirable (TWA)
Aluminum Oxide ¹	1344-28-1	215-691-6	92.0 – 99.0	15 mg/m ³	5 mg/m ³
Titanium Dioxide	13463-67-7	236-675-5	1.0 – 4.0		
Silicon Dioxide ²	7631-86-9	231-545-4	0.2 – 1.7	<u>80 mg/m³</u> %SiO ₂	
Iron Oxide	1309-37-1	215-168-2	0.1 – 1.5	10 mg/m ³	
Impurities	Other total oxides (trace amounts)		< 1.0 %		
¹ Non-fibrous ² Amorphous					

SECTION 4 - FIRST AID MEASURES

EYES: Flush eyes with large amounts of water. If signs/symptoms persist, seek medical attention.

SKIN: Wash affected area with soap and water. If signs/symptoms persist, seek medical attention.

INHALATION: Remove person to fresh air. If signs/symptoms develop, seek medical attention.

INGESTION: Ingestion is an unlikely route of exposure. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABLE/COMBUSTIBLE PROPERTIES: None

EXTINGUISHING MEDIA: Extinguisher suitable for ordinary combustible materials. Class A extinguishing agents.

SPECIAL FIRE FIGHTING PROCEDURES: In fire conditions, fire-fighters should wear appropriate respiratory protection and full protective gear.

FIRE & EXPLOSION HAZARDS: Not applicable. None inherent in this product.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL SAFETY PRECAUTIONS: Avoid creating dust. Avoid contact with skin and eyes. Use with adequate ventilation.

ENVIRONMENTAL PRECAUTIONS: Ensure material is properly disposed of.

CLEANUP MEASURES: Collect spilled material mechanically and place in a suitable, compatible, properly labeled container. Avoid creating any dust. Ensure adequate ventilation and dispose of material in accordance with all applicable local, state and federal laws.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Avoid contact with skin and eyes. Wash hands before eating. Prevent the formation of dust. Handle with adequate ventilation.

STORAGE: Normal Storage: Store in the original container in a cool, dry, well ventilated area. Keep containers tightly sealed.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide sufficient mechanical ventilation to reduce airborne concentrations and minimize exposure. Maintain employee exposure below applicable permissible exposure limits.

HYGIENIC MEASURES: Do not inhale dust/smoke/mist. Avoid contact with skin and eyes. Wash hands before eating.

RESPIRATORY PROTECTION: Avoid breathing dust. Assess exposure concentrations of all materials involved in the workplace. If concentrations exceed the exposure limits listed in Section 2, Exposure Guidelines, or irritation or other symptoms are experienced, follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard 149 approved respirator.

EYE PROTECTION: Avoid eye contact. To minimize the risk of injury to eyes, always wear appropriate protective safety glasses or chemical safety goggles.

SKIN PROTECTION: Avoid skin contact. Wear appropriate protective clothing to minimize risk of injury to skin from contact with dust or physical abrasion.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Formula:	Al ₂ O ₃
Appearance:	Brown to Black
Physical State:	Solid-granular
Odor:	Odorless
Boiling Point	N/A
Flash Point:	N/A
Melting Point:	N/A
Decomposition Temperature:	N/A
pH at 20°:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A
Oxidizing Properties:	N/A
Explosive Properties:	None
Specific Gravity:	3.95
Solubility:	Insoluble
Bulk Density:	N/A

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

THERMAL DECOMPOSITION: N/A

INCOMPATIBILITY: N/A

CONDITIONS TO AVOID: None known

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

DANGEROUS REACTIONS: None known

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11 - TOXICOLOGICAL INFORMATION

CAS # 1344-28-1	
Component Analysis LD50/LC50	Data Not Available
Carcinogenicity	
Epidemiology	
Teratogenicity	
Neurotoxicity	
Mutagenicity	
Reproductive Effects	

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: Not Available

SECTION 13 - DISPOSAL CONSIDERATIONS

Solid or chemical waste generators must determine whether a discarded waste is classified as a hazardous waste. U.S. EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local waste regulations to ensure complete and accurate classification.

SECTION 14 - TRANSPORT INFORMATION

U.S. DOT	This product is not regulated by USDOT as a Hazardous Material (49 CFR 172.101). No UN code assigned. No placard required for transportation.
IMDG	Not regulated as a Hazardous Material.
ACAO/IATA	Not regulated as a Hazardous Material.
EU (ADR, RID)	Not regulated as a Hazardous Material.

SECTION 15 - REGULATORY INFORMATION

TSCA: Aluminum Oxide is listed on the TSCA inventory under CAS# 1344-28-1

RCRA: Aluminum Oxide is not classified as a hazardous material under RCRA or its regulations, 40 CFR 261.

CERCLA: Aluminum Oxide is not classified as a hazardous substance under CERCLA regulations, 40 CFR 302.

SARA: Aluminum Oxide is not an extremely hazardous substance in Section 302 and is not a toxic chemical subject to the requirements of 313.

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