
Section 1. PRODUCT IDENTIFICATION

Product Identifiers

Product Name: Alumina
CAS number: 1344-28-1

Product Part Numbers: 15100, 15130, 15160, 15200, 15230, 15260, 15300, 15400, 15430, 15460, 15530, 15560, 15600, 15640, 15740, 16000, 16050, 16200, 16230, 16260, 16310, 16320, 16330, 16340, 16350, 19600, 19650, 80570, 80580, 80590, 86013, 80730, 80800, 80950, 80960, 81000, 81200, 82000, 82010, 83030, 83063, 83070, 85800, 85801, 85802, 85812, 85813, 85815, 85825, 85827, 85850, 86014, 86028, 86028D, 86048, 86048D, 86049, 86100, 86200, 87004, 87005, 87008, 87014, 87014D, 87030, 88015, 88040, 90600AC, 90814, 91500, 91520, 92000, 92010, 92020, 92030, 93910.

Synonyms: Aluminum oxide, Alundum, Aloxide, Activated Alumina, Amorphous Alumina

Recommended use: Chromatography, Laboratory chemicals

Uses advised against: No information available

Details of the Supplier of the Safety Data Sheet:

Company: Sorbent Technologies
5955 Peachtree Corners East
Norcross, GA 30071 USA

Emergency Telephone Number: 1-866-767-2832

Section 2. HAZARD IDENTIFICATION

United States: According OSHA 29 CFR 1910.1200 HCS

Classification of the Substance or Mixture: Based on available data, the classification criteria are not met.

GHS Label Elements, including Precautionary Statements: None required

Emergency Overview: Odorless white powder.

Potential Health Effects: Medical conditions aggravated by exposure: Not expected to be a health hazard.

Response:

Eyes: May cause mild physical irritation.

Skin: May cause irritation with redness and pain. May cause allergic skin reaction.

Ingestion: No adverse effects expected.

Inhalation: May cause irritation of respiratory tract due to drying and abrasive actions of dust. Coughing or shortness of breath may occur in cases of excessive inhalation.

Chronic Effects: No adverse effects expected.

Carcinogenic Effects: IARC: Not listed NTP: Not listed OSHA: Not regulated

Other Hazards Not Otherwise Classified (HNOC): None identified

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization:

<u>Ingredient</u>	<u>CAS No.</u>	<u>EC No.</u>	<u>%</u>
Alumina, Al ₂ O ₃	1344-28-1	215-691-6	>95% (w/w)

Synonyms: Aluminum Oxide, Alundum, Aloxide, Activated Alumina, Amorphous Alumina

Formula: Al₂O₃

Molecular weight: 101.96 g/mol.

Section 4. FIRST AID MEASURES

Description of First Aid Measures

Skin: Wash material off skin with soap and water. Seek medical attention if irritation occurs.

Eyes: Flush with copious amounts of water for 15 minutes. Seek medical attention if irritation occurs.

Ingestion: Give one or two glasses of water to drink. Seek medical attention if gastrointestinal symptoms develop.

Inhalation: Remove to fresh air. Seek medical attention if cough or respiratory symptoms develop.

Most Important Symptoms and Effects, both acute and delayed

No information available

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Section 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: This product is not combustible

Unsuitable Extinguishing Media: Not applicable

Flash Point: Not applicable

Non-flammable: OSHA Method 16CFR1500.44 (Incorporated by reference in 29CFR1920.1200).

Flammability Limits in Air: LFL and UFL Not Applicable.

Auto ignition temperature: 590 deg. C (1094 deg. F)

Advice for Firefighters

General Hazard: Not considered to be a fire hazard.

Fire Fighting Instructions: Isolate large fires and allow to burn out. Extinguish fire using water fog, fine water spray, carbon dioxide or foam. Avoid stirring up dust clouds.

Fire Fighting Equipment: Fire fighting personnel should wear full protective equipment, including self-contained breathing apparatus (SCBA) for all inside fires and large outdoor fires.

Hazardous Combustion Products: Under certain conditions, any airborne dust be an explosion hazard. Hazard greater as fineness increases.

Special Fire Hazard: Chlorine trifluoride reacts violently with Alumina producing a flame.

NFPA rating: Health: 0, Flammability: 0, Reactivity: 0,

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Avoid dust formation. Avoid breathing vapors, mist or gas.

Environmental Precautions

No special environmental precautions required.

Methods and Material for Containment and Clean-up

If a Spill or Leak Occurs: Clean up spills in a manner that does not disperse dust into the air. Handle in accordance with industrial hygiene and safety practices. These practices include avoiding unnecessary exposure, and removal from eyes, skin, and clothing. Prevent product from entering drains.

Disposal Method: Sweep up and shovel into suitable containers for disposal. Dispose in a facility for non-hazardous wastes. Spent should be disposed of in accordance with State and Federal laws.

Container Disposal: Do not reuse empty bags or drums. Dispose of used bags in facility permitted for non-hazardous wastes.

Section 7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Avoid prolonged contact with eyes and skin. Do not breath dust. Keep away from ignition sources. Use in well ventilated areas. Protect containers from physical damage. Wash hands after handling.

Conditions for Safe Storage, Including any Incompatibilities

Storage: Store in cool, dry, ventilated area and in closed containers. Keep away form oxidizers, heat or flames. Store away form ignition sources. Do not store above 24 deg. C. Strongly hygroscopic.

Storage class (TRGS 510): Non-combustible Solids

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Exposure Guidelines: This product does not contain any hazardous materials with occupational exposure limits established by the region regulatory bodies.

Component	OSHA PEL	ACGIH TLV	NIOSHI DLH
Aluminum oxide (1344-28-1)	5 mg/m3 TWA respirable fraction 15 mg/m3	TWA 1 mg/m3 as Al	

Component	Canada Quebec	Canada Ontario TWAEV	Mexico OEL (TWA)
Aluminum oxide (1344-28-1)	TWA: 10 mg/m3	TWA: 1 mg/m3	TWA: 10 mg/m3

ACGIH is the American Conference of Governmental Industrial Hygienists

OSHA is the Occupational Safety and Health Administration

NIOSH is the National Institute of Occupational Safety and Health

PEL is the Permissible Exposure Limits established by OSHA.

TLV is the Threshold Limit Value a term ACGIH uses to express the maximum airborne concentration of a material to which most workers can be exposed during a normal daily and weekly work schedule without adverse effects.

MSHA is the Mine Safety and Health Administration

Exposure Controls

Engineering Controls: Use local exhaust to control emissions near the source. Ventilation systems should be configured to prevent exceeding the recommended or regulated exposure limits (i.e. OSHA PELs).

Eye Protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Safety glasses with side shields are recommended for any type of handling. Where eye contact or dusty conditions may likely, dust tight goggles are recommended. Have eye washing equipment available.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Avoid skin contact with this product. Wear appropriate dust resistant clothing. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

Full contact material: Nitrile rubber of minimum layer thickness 0.11 mm and break through time 480 minutes.

Body protection: Choose protection in relation to its type, to the concentration and the amount of any dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and of the amount of any dangerous substances at the specific workplace.

Respiratory Protection: Follow the OSHA respiratory regulations found in 29 CFR 1910.134 or European Standard EN149. Keep dust exposure to a minimum with engineering and administrative controls. Use appropriate NIOSH/MSHA approved particulate respirators if necessary. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Use type N95 (US) or type P1 (EN 143) dust masks for nuisance levels of dust.

General Industrial Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Safety shower and eye wash should be available close to work areas.

Environmental Exposure Controls

No special environmental precautions required.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State:	Solid
Appearance:	White powder
Odor:	Odorless
Odor Threshold:	No data available
pH:	Not applicable
Melting Point/Range:	2000 deg. C / 3632 deg. F
Boiling Point/Range:	2980 deg. C / 5396 deg. F
Flash Point:	Not applicable
Evaporation Rate:	No information available
Flammability (solid, gas); Flammability or Explosive Limits	No information available
Upper:	No data available
Lower:	No data available
Vapor Pressure:	Negligible
Vapor Density:	No information available
Relative Density:	4.0 (water =1)
Solubility:	Slightly soluble in water
Partition Coefficient; n-octanol/water:	No data available
Autoignition Temperature:	No information available
Decomposition Temperature:	No information available
Viscosity:	No information available
Molecular Formula:	Al ₂ O ₃
Molecular weight:	101.96

Section 10. STABILITY AND REACTIVITY

Reactivity

None known based on the information available.

Chemical Stability

This product is stable under the specified conditions of storage, shipment and use. Avoid storing at high temperatures or in direct sunlight. Do not store above 24 deg. C.

Possibility of Hazardous Reactions

No data available.

Conditions to Avoid

Exposure to moisture.

Incompatible Materials

Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, permanganate, etc. may result in rapid combustion. Avoid strong reducing agents; reacts violently with many compounds including oxidizers, acids, caustics, halogens, halogenated hydrocarbons, nitrates, sulfate, methyl chloride, mercury and mercury compounds.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors such as carbon oxides.

Section 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Aluminum oxide	>5000 mg/kg (rat) (OECD Guideline 401)	No effect	>2.3 mg/l 4h (OECD Guideline 403)

Toxicologically Synergistic Products: No information available .

Delayed and Immediate Effects as well as Chronic Effects from Short and Long Term Exposure

Irritation: No information available

Sensitization: No information available

Carcinogenicity Table below indicates if each agency has listed any ingredient as a Carcinogen.

Component	CAS-No.	IARC	NTP	ACGIH	OSHA	Mexico
Aluminum oxide	1344-28-1	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: No information available.

Reproductive Effects: No information available.

Developmental Effects: No information available.

Teratogenicity: No information available.

Specific Target Organ Toxicity (STOT)-single exposure: None known.

Specific Target Organ Toxicity (STOT)-repeated exposure: None known.

Aspiration: No information available

Symptoms / Effects, Both Acute and Delayed: No information available.

Endocrine Disruptor Information: No information available.

Other Adverse Effects: The toxicological properties have not been fully investigated.

Section 12. ECOLOGICAL INFORMATION

Ingredient	Test	Result	Species	Exposure
Aluminum oxide	Fish—OECD TG 203	>100 mg/l	Salmo trutta	pH 8
Aluminum oxide	Fish—OECD TG 202	>100 mg/l	Daphnia magna	pH 8
Aluminum oxide	Fish—OECD TG 201	>100 mg/l	Selenastrum Capricornutum	pH 8

Toxicity

No toxicity limit of solubility. Do not empty into drains.

Persistence/ Degradability

No information available.

Bioaccumulation Potential

Does not bioaccumulate.

Mobility in Soil

No information available.

Other Adverse Effects

No information available

Section 13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Product: This product is not considered a hazardous waste. Vacuum or shovel material into a closed container for reuse or disposal. Storage and disposal should be in accordance with applicable local, state and federal laws and regulations.

Contaminated Packaging: Local regulations may be more stringent than state or federal requirements.

RCRA P-Series: None listed

RCRA U-Series: None listed

Section 14. TRANSPORTATION INFORMATION

Land: **DOT (US):** Not regulated
ADR/RID (EU): Not regulated
TDG (Canada): Not regulated
Water: **IMO/IMDG:** Not regulated
Air: **IACO/IATA:** Not regulated

Special Precautions for User

No information available

Section 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations/ Legislation Specific for the Substance or Mixture International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Aluminum oxide	X	X	-	215-691-6	-		X	X	X	X	X

X indicates listed

U.S. Federal Regulations

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

CERCLA Hazardous Substances and Corresponding RQs: None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances: None of the chemicals in this product have a TPQ.

SARA Codes: CAS# 1344-28-1:

SARA 311/312 Hazardous Categorization:

Acute Health Hazard: No
Chronic Health Hazard: No
Fire Hazard: No
Sudden Release of Pressure: No
Reactive Hazard: No

SARA Section 313: CAS# 1344-28-1 Aluminum oxide, form R required for 1% de minimis concentration (fibrous form only).

Clean Air Act:

This material does not contain any hazardous air pollutants, Class 1 Ozone depletors or Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances, Priority Pollutants or Toxic Pollutants under the CWA.

OSHA: Not applicable

CERCLA: Not applicable

U.S. Department of Transportation (DOT)

Reportable Quantity (RQ): No

DOT Marine Pollutant: No

DOT severe Marine Pollutant: No

U.S. Department of Homeland Security (DHS)

This product does not contain any DHS chemicals.

States Right-to-Know

Aluminum oxide CAS# 1344-28-1

California Prop 65: Not listed. This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts: Listed.

New Jersey Right to Know: Listed, sn 2891.

Pennsylvania: Listed.

Florida: Listed, (includes aluminum oxide and aluminum welding fumes)

Rhode Island: Listed.

Illinois: Not listed.

Connecticut - Hazardous Air pollutants: Listed, 200ug/m3 HLV.

Canadian Classification

WHMIS: Non-controlled.
DSL: Listed.

EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.

Risk and Safety Phrases: S2: Keep out of reach of children,,
S46: If swallowed, seek medical advice immediately and show this on the container or label.

Mexico—Grade

No information available.

Section 16. OTHER INFORMATION

HMIS Rating (USA):

Health Hazard: 0
Chronic Health Hazard: *
Flammability: 0
Physical Hazard: 0
Personal Protection: E (safety glasses, gloves, dust respirator)

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 information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to these products or handling of these products. Customers/users must comply with all applicable health and safety laws, regulations, and orders

SDS REVISION SUMMARY: revision 009 dated 9/9/16
replaces revision 008 dated 9/29/14.

This document has been updated to comply with the U.S. OSHA HazCom 2012 Standard replacing the current Legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)