



Safety Data Sheet Unfired Alumina

SECTION 1: Identification

Product identifier

Product name	Unfired Alumina
Substance name	Aluminum Oxide Al ₂ O ₃
Other names / synonyms	Unfired Alumina; (AL 74, AL 85, AL 94, AL 95, AL 96, AL 96P, AL 98, AL 98P, AL 995, AL 998, AL 9980, AL999)

Recommended use of the chemical and restrictions on use

Raw material for technical ceramic components.

Supplier's details

Name	Superior Technical Ceramics
Address	600 Industrial Park Road St. Albans, Vermont 05478 USA
Telephone	802-527-7726
Fax	802-527-1181

Emergency phone number(s)

802-527-7726

SECTION 2: Hazard identification

This product is considered an article and does not pose any health hazard under normal use. The health effects listed below may be relevant when dust is generated during machining or other processing conditions.

Classification of the substance or mixture

- Carcinogenicity (chapter 3.6), Cat. 1
- Specific target organ toxicity, repeated exposure (chapter 3.9), Cat. 1

GHS label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H335	May cause respiratory irritation
H350i	May cause cancer by inhalation.
H372	Causes damage to organs through prolonged or repeated exposure

Precautionary statement(s)

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P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.

Other hazards which do not result in classification

This product has the potential of generating respirable dust during machining. Dust may contain respirable crystalline silica. Prolonged inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of lung fibrosis are cough and breathlessness. Control and monitor occupational exposure to respirable crystalline silica dust in accordance to federal, state and local laws.

SECTION 3: Composition/information on ingredients

Components

1. Aluminum oxide

Concentration	74 - 96.7 %
Other names / synonyms	activated Alumina; alpha-Alumina; Alumina; Aluminum oxide; Aluminum oxide (fibrous forms); Aluminum oxide (Powder or Fiber); ALUMINUMOXIDE
CAS no.	1344-28-1

2. Silica, crystalline (airborne particles of respirable size)

Concentration	0.1 - 15 % (Weight)
Other names / synonyms	Quartz; Sand; Silica, crystalline (airborne particles of respirable size); Silicon (IV) oxide
CAS no.	14808-60-7
H335	May cause respiratory irritation
H350i	May cause cancer by inhalation.
H372	Causes damage to organs through prolonged or repeated exposure

3. Organic Binders

Concentration	3 - 10 %
Other names / synonyms	Organic Binders

4. Secondary Oxides

Concentration	0.2 - 2.6 %
Other names / synonyms	Secondary Oxides

SECTION 4: First-aid measures

Description of necessary first-aid measures

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General advice	Organic portion may be combustible. Dust may cause irritation to eyes, nose, throat, and/or skin.
If inhaled	Move to fresh air and consult with local medical personnel if discomfort persists.
In case of skin contact	Wash affected area with soap and water and consult with local medical personnel if irritation persists.
In case of eye contact	Flush with tepid water for a minimum of 15 minutes and consult with local medical personnel if discomfort persists.
If swallowed	Administer water to dilute, but not if person is unconscious. Consult with local medical personnel if discomfort persists.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use any means suitable for extinguishing surrounding fire.

Specific hazards arising from the chemical

Possible Class A fire hazard – combustible vapors can develop in the headspace over the product. Flash point is 220°C (428°F).

Special protective actions for fire-fighters

Use protective clothing and breathing equipment appropriate for the surrounding fire and to protect against the aluminum oxide dust that may be dispersed in the air.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Any dust from machining should be wet mopped or dry vacuumed.

Methods and materials for containment and cleaning up

Any dust from machining should be wet mopped or dry vacuumed.

SECTION 7: Handling and storage

Precautions for safe handling

Store in a cool dry place. Any dust should be sponge mopped.

SECTION 8: Exposure controls/personal protection

Control parameters

1. alpha-Alumina (CAS: 1344-28-1)

PEL (Inhalation): see PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

2. alpha-Alumina (CAS: 1344-28-1)

REL (Inhalation): See Appendix D (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

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3. alpha-Alumina, Total dust (CAS: 1344-28-1)

PEL (Inhalation): 15 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

4. alpha-Alumina, Total dust (CAS: 1344-28-1)

PEL (Inhalation): 10 mg/m³ (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

5. alpha-Alumina, Respirable fraction (CAS: 1344-28-1)

PEL (Inhalation): 5 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

6. alpha-Alumina, Respirable fraction (CAS: 1344-28-1)

PEL (Inhalation): 5 mg/m³ (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

7. Silica, crystalline quartz, respirable dust (CAS: 14808-60-7)

PEL (Inhalation): See Annotated Z-3 ppm (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

8. Silica, crystalline quartz, respirable dust (CAS: 14808-60-7)

PEL (Inhalation): See Annotated Z-3 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

9. Silica, crystalline quartz, respirable dust (CAS: 14808-60-7)

PEL (Inhalation): See Annotated Z-3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

10. Silica, crystalline quartz, respirable dust (CAS: 14808-60-7)

REL (Inhalation): See Annotated Z-3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

Appropriate engineering controls

Local or general exhaust ventilation recommended.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety goggles in the presence of airborne dust.

Skin protection

Polymer gloves for prolonged dust exposure.

Respiratory protection

NIOSH/MSHA approved respirator for dust when exposure limit is exceeded.

Thermal hazards

CO and CO₂ in a fire and at temperatures >220°C (428°F).

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form	White or Colored Chalky Solid
Odor	Odorless
Odor threshold	N/A
pH	N/A
Melting point	N/A

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Initial boiling point and boiling range	N/A
Flash point	N/A
Evaporation rate	N/A
Flammability (solid, gas)	N/A
Upper/lower flammability limits	N/A
Upper/lower explosive limits	N/A
Vapor pressure	N/A
Vapor density	N/A
Relative density	>1.9 g/cc
Solubility(ies)	Organic Portion Soluble in Water
Partition coefficient: n-octanol/water	N/A
Auto-ignition temperature	N/A
Decomposition temperature	N/A
Viscosity	N/A
Explosive properties	N/A
Oxidizing properties	N/A

SECTION 10: Stability and reactivity

Chemical stability

Stable

Hazardous decomposition products

CO and CO₂ in a fire and at temperatures >220°C (428°F).

SECTION 11: Toxicological information

Information on toxicological effects

Respiratory or skin sensitization

See Section 2.

Carcinogenicity

See Section 2

STOT-repeated exposure

See Section 2

SECTION 12: Ecological information

No Applicable Information Found

SECTION 13: Disposal considerations

Disposal of the product

This material is not hazardous per 40 CFR 261. Consultation with federal, state and local officials is recommended before disposal.

SECTION 14: Transport information

DOT (US)

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Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

US FEDERAL

TSCA

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

CAS# 14808-60-7 is listed on the TSCA inventory.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313

CAS# 1344-28-1 is reported under Section 313.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

US STATE

CAS# 1344-28-1 can be found on the following state right to know lists:

Illinois, Minnesota, Massachusetts, New Jersey, Pennsylvania, Texas.

CAS# 14808-60-7 can be found on the following state right to know lists:

Massachusetts, Pennsylvania, Texas.

Consult your state and local resources for further information.

California Prop 65

Crystalline Silica (airborne particles of respirable size) is classified as a substance known to the state of California to be a carcinogen.

SECTION 16: Other information

Further information/disclaimer

Although reasonable care has been taken to provide accurate and current information in preparation of this document, Superior Technical Ceramics extends no warranties, makes no representation and assumes no responsibility for any loss, damage, or injury of any kind which may result from reliance of information provided in this document by any person.

Preparation Information

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