



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Material name</b>	<b>ALUMINUM OXIDE</b>
<b>Version #</b>	02
<b>Revision date</b>	08-26-2011
<b>CAS #</b>	1344-28-1
<b>Product Codes</b>	<b>J.T.Baker: 0536, 0537, 0538, 0539, 0540</b>
<b>Synonym(s)</b>	AluminAR® CC-10; Alumina; activated Alumina; alpha-Alumina
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	CAUTION  Product dust may be irritating to eyes, skin and respiratory system. Prolonged exposure may cause chronic effects.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Skin contact. Eye contact. Ingestion.
<b>Eyes</b>	Dust or powder may irritate eye tissue. If irritation should occur, it is expected to be transient.
<b>Skin</b>	Dust or powder may irritate the skin.
<b>Inhalation</b>	Inhalation of dusts may cause respiratory irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard. May cause temporary irritation of the throat, stomach, and gastrointestinal tract.
<b>Target organs</b>	Respiratory system. Lungs.
<b>Chronic effects</b>	Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. May cause lung damage.
<b>Potential environmental effects</b>	The product components are 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.

## 3. Composition / Information on Ingredients

<b>Components</b>	<b>CAS #</b>	<b>Percent</b>
ALUMINUM OXIDE	1344-28-1	90 - 100

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.
<b>Ingestion</b>	Seek medical advice.

**Notes to physician** Treat symptomatically.

**General advice** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

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**Flammable properties** This product is not flammable.

**Extinguishing media**

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

**Unsuitable extinguishing media** None known.

**Protection of firefighters**

**Protective equipment and precautions for firefighters** Firefighters should wear full protective gear. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

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

## 6. Accidental Release Measures

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**Personal precautions** Keep unnecessary personnel away. Keep upwind. Ventilate the area. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**Methods for containment** If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up**

Avoid dust formation.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Large Spills: Collect dust or particulates using a vacuum cleaner with a HEPA filter. Reduce airborne dust and prevent scattering by moistening with water.

Never return spills in original containers for re-use. Clean contaminated surface thoroughly. Clean up in accordance with all applicable regulations.

## 7. Handling and Storage

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**Handling** Keep formation of airborne dusts to a minimum. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Storage** Keep container tightly closed. Store in a well-ventilated place.

## 8. Exposure Controls / Personal Protection

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### ACGIH

Material	Type	Value	Form
ALUMINUM OXIDE (1344-28-1)	TWA	1.0000 mg/m <sup>3</sup>	Respirable fraction.

### Occupational exposure limits

#### U.S. - OSHA

Material	Type	Value	Form
ALUMINUM OXIDE (1344-28-1)	PEL	15.0000 mg/m <sup>3</sup>	Total dust.
		5.0000 mg/m <sup>3</sup>	Respirable fraction.

<b>Engineering controls</b>	Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Use tight fitting goggles if dust is generated.
<b>Skin protection</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: High-efficiency particulate respirator with full facepiece.
<b>General hygiene considerations</b>	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical & Chemical Properties

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<b>Appearance</b>	Powder.
<b>Color</b>	White.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>pH</b>	Not available.
<b>Melting point</b>	3632 °F (2000 °C)
<b>Freezing point</b>	3632 °F (2000 °C)
<b>Boiling point</b>	5396 °F (2980 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Specific gravity</b>	4
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Molecular weight</b>	101.96 g/mol
<b>Molecular formula</b>	Al <sub>2</sub> O <sub>3</sub>

## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Excessive heat.
<b>Incompatible materials</b>	Strong oxidizing agents. Chlorinated compounds. Ethylene Oxide
<b>Hazardous decomposition products</b>	None known.

**Possibility of hazardous reactions** Hazardous polymerization does not occur.

## 11. Toxicological Information

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**Sensitization** Not a skin sensitizer.

**Acute effects** Low hazard for usual industrial or commercial handling.

**Local effects** May cause eye irritation. May cause skin irritation. May cause irritation to the respiratory system.

**Chronic effects** Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. May cause lung damage.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**ACGIH Carcinogens**

ALUMINUM OXIDE (CAS 1344-28-1)	A4 Not classifiable as a human carcinogen.
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**Skin corrosion/irritation** May irritate and cause redness and pain.

**Epidemiology** No epidemiological data is available for this product.

**Mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Neurological effects** None known.

**Reproductive effects** Contains no ingredient listed as toxic to reproduction

**Teratogenicity** No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

**Symptoms and target organs** Irritant effects.

**Further information** Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

## 12. Ecological Information

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**Ecotoxicity** The product components are 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.

**Environmental effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Persistence and degradability** No data is available on the degradability of this product.

**Partition coefficient (n-octanol/water)** Not available

## 13. Disposal Considerations

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**Disposal instructions** Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.

**Contaminated packaging** Offer rinsed packaging material to local recycling facilities. Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

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### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

ALUMINUM OXIDE (CAS 1344-28-1) 1.0 %

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

ALUMINUM OXIDE (CAS 1344-28-1) Listed.

**CERCLA (Superfund) reportable quantity**

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 311 hazardous chemical** Yes

**Safe Drinking Water Act (SDWA)** Contaminate candidate list

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

ALUMINUM OXIDE (CAS 1344-28-1) 500 LBS

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

ALUMINUM OXIDE (CAS 1344-28-1) Listed.

**Saf-T-Data** Health: 3 - Severe  
Flammability: 0 - None  
Reactivity: 0 - None  
Contact: 1 - Slight  
Lab Protective Equip: B - GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES  
Storage Color Code: G - Green (General Storage)

## 16. Labeling Info

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**Label Hazard Warning**

CAUTION

Product dust may be irritating to eyes, skin and respiratory system. Prolonged exposure may cause chronic effects.

**Label Precautions**

Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.

**Label First Aid**

Immediately flush eyes with plenty of water for at least 15 minutes. Flush skin thoroughly with water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if irritation develops or persists. If ingestion of a large amount does occur, call a poison control center immediately.

## 17. Other Information

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**NFPA ratings**

Health: 1  
Flammability: 0  
Instability: 0

**Disclaimer**

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**Issue date**

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