SAFETY DATA SHEET

Section 1: Identification

Product Identifier: TAB-99

Other means of identification: Tabular Alumina Balls, Tabular Alumina Gravel.

Recommended use: Heat Exchanger, Refractory Filler, Aluminum Filter Media, Inert Leveling Bed Support.

Manufacturer:

ZIRCAR Ceramics, Inc.
P.O. Box 519
Florida, NY 10921
www.zircarceramics.com
sales@zircarceramics.com
(845) 651-6600

Emergency Telephone Number:

CHEMTREC: (800) 424-9300 (USA/Canada), (703) 527-3887 (International)

Section 2: Hazards Identification

Hazard Classification(s): Skin Irritation, Eye Effects, category 2 Respiratory Sensitizer (if dust from cut or crushed material is generated.).

Signal Word: Warning.

Precautionary Statement(s): Dust generated by cutting may cause skin, eye and respiratory irritation.

CAUTION: As delivered, these products represent no hazard.

Inhalation: Dust from cut or crushed material may cause irritation or soreness of throat and nose.

Eye Contact: Dust from cut or crushed material may cause temporary irritation or inflammation.

Skin Contact: May cause temporary dryness, irritation or rash.

Ingestion: Ingestion is unlikely. May cause gastrointestinal disturbances. Never induce vomiting without the advice of a physician.

Medical Conditions Aggravated by Exposure: Respiratory effects may be aggravated by smoking. Pre-existing respiratory problems may be aggravated by dust.

Section 3: Composition / Information on Ingredients

Chemical and common names, CAS number and concentration:

Chemical Name	Common Name	CAS Number	% by weight
Aluminium(III) oxide	Alumina	1344-28-1	>99

Section 4: First Aid Measures

Inhalation: Inhalation of delivered products unlikely. If dust from cut or crushed material is encountered, remove to fresh air. Rinse mouth and blow nose to evacuate dust. Consult a physician if irritation persists.

Eye Contact: Dust from cut or crushed material can be physical irritants to eyes. Do not rub eyes. Keep hands or contaminated body parts away from eyes. Remove contact lenses. Flush with water. If irritation persists, consult a physician.

Skin Contact: Dust from cut or crushed material can be irritants. Wash with soap and water. For dryness, a skin cream may be helpful. Do not apply anything to a rash. Consult a physician if irritation persists.

Ingestion: Ingestion unlikely.

Note to Physicians: Aluminum Oxide dusts have caused no systemic or pathological problems. The material is inert in the body. Physicians treat symptomatically.

Section 5: Fire Fighting Measures

Materials are not combustible. Use extinguishing media suitable for type of surrounding fire.

Section 6: Accidental Release Measures

Release into Air: Prevent release of airborne particulates where possible. Do not blow dust from cut or crushed material around. Do not breathe dust. Not a regulated hazardous substance. See Section 8 for appropriate engineering controls.

Release into Water: Release into water is not appropriate. Not a regulated hazardous substance.

Section 7: Handling and Storage

Storage: These materials can be stored indefinitely as they are 100% inorganic.

Normal Use: Materials are stable under normal use and are not expected to produce significant hazardous by-products or emissions.

Cutting and crushing: These materials may produce respirable and nuisance dusts when cut or crushed. See Section 8 for exposure controls and personal protection during machining or installation procedures.

After Service: Appropriate ventilation and respiratory protection should be provided in compliance with OSHA standards. Strict adherence to recommended safe work practices is advised. Product removal must consider possible pickup of contaminants found where used and the possibility of usage above design temperatures. See Section 8 for appropriate respiratory protection during removal of material the subject of this SDS.

Section 8: Exposure Controls / Personal Protection

Exposure Limits

Aluminum Oxide	
OSHA PEL as 8 hr TWA	15/5 mg/m^3 Total dust/Respirable Fraction
ACGIH PEL as 8 hr TWA	10 mg/m^3 Inhalable particulate with no asbestos and <1% crystalline silica
Canadian PEL as TWA	5 mg/m^3

Appropriate Engineering Controls: Local exhaust ventilation, point of generation dust collection and/or other means to minimize airborne dust generation are recommended when using these materials.

Recommendations for Personal Protective Measures

Personal protective equipment

Eye/face protection No special protective equipment required.

Eye protection must conform to standard EN 166.

Hand protection Wear suitable gloves.

Gloves must conform to standard EN 374.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not breathe dust.

Environmental exposure controls Avoid creating dust.

Section 9: Physical and Chemical Properties

Physical and Chemical Properties

Appearance		Odor	pH	Melting Point	Bulk Density
Physical State	Color				
Solid granules or balls.	White	None	NA	2053°C (3727°F) Dried	800-2800 kg/m^3

Note: Freezing point, initial boiling point and boiling range, flash point, evaporation rate, flammability, upper/lower flammability or explosive limits, vapor pressure, vapor density, partition coefficient: n-octanol/water, auto-ignition temperature, decomposition temperature and viscosity are irrelevant and/or unavailable to/for these materials.

Section 10: Stability and Reactivity

Chemical Stability: Materials are stable under normal conditions.

Chemical Incompatibilities: Powerful oxidizers; fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, etc.

Hazardous Decomposition Products: Steam

Section 11: Toxicological Information

Exposure Routes and Effects

Inhalation: Dust may cause temporary irritation or soreness of throat and nose. Dust should not be inhaled.

Eye Contact: Dusts from cut materials may cause temporary irritation or inflammation.

Skin Contact: May cause temporary dryness, irritation or rash.

Ingestion: Ingestion is unlikely. May cause gastrointestinal disturbances. Never induce vomiting without the advice of a physician.

Medical Conditions Aggravated by Exposure: Respiratory effects may be aggravated by smoking. Pre-existing respiratory problems may be aggravated by dust.

Toxicology

Aluminum Oxide	
Acute Toxicity Estimate	LD_{50}: 4320 mg/kg
Carcinogenicity by ACGIH	Group A4: Not classifiable as a human carcinogen

Description of Symptoms: See Exposure Routes and Effects, Hazard Statement(s) and Precautionary Statement(s) sections above.

Section 12: Ecological Information

Eco toxicological Information: Not readily biodegradable. No information available.

Distribution: Aluminum oxide is naturally occurring and widely distributed in igneous rock. Secondary deposits in sedimentary rock may be found.

Chemical Fate Information: The relative inertness of these materials indicates that they may be highly persistent in the environment. No information regarding any negative effects of this persistence has been noted.

Section 13: Disposal Consideration

Disposal: Consult with local, state and federal regulations. In most cases these materials may be land filled safely. Refer to Section 8 for instructions regarding Exposure Controls/Personal Protection.

Hazardous Waste Classification: Materials are not regulated hazardous materials.

Empty Containers: Empty containers may contain product dust or residue. Do not re-use.

Section 14: Transportation Information

Materials are not regulated hazardous substances, no specific regulations apply.

Section 15: Regulatory Information

Regulated Constituents: Aluminum Oxide

SARA Title III Constituent: listed none

SARA de Minimus Concentration: 1.0% N/A

N.J. Right to Know: listed none

Penn. Right to Know: listed none

Mass. Right to Know: listed none

SARA Note: The listed substance requires reporting under Section 313 of SARA Title III of the Emergency Planning and Community Right to Know Act, annually if above the de Minimus Concentration and threshold quantity.

New Jersey Right to Know Note: The listed substance is found on the New Jersey Hazardous substance list and is subject to reporting under SARA and the New Jersey Worker and Community Right to Know Act.

Pennsylvania Right to Know Note: The listed substance is subject to reporting under the Commonwealth of Pennsylvania's Worker and Community Right to Know Act. Form HSSF submissions due annually on April1.

Mass. Right to Know Note: Items on the Massachusetts List of Hazardous Substances require specific hazard labeling in the workplace.

WHMIS Status: Aluminum oxide (CAS no. 1344-28-1) is subject to disclosure under the Hazardous Products Act.

International Inventories

TSCA Complies

DSL/NDSL Complies

EINECS/ELINCS Complies

ENCS Complies

IECSC Complies

KECL Complies

PICCS Complies

AICS Complies

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

Section 16: Other

Disclaimer:
The information contained herein is based on data considered to be accurate as of the preparation or revision date. It is provided in good faith and in compliance with state and federal regulations. No warranty or representation, express or implied is made as to the accuracy or completeness of this information. Other national, state and/or local regulations may apply.