



**DIACOPORE™ LINE
OF HIGH PURITY, HIGH STRENGTH
POROUS ALUMINA CARRIERS**

MATERIALS SAFETY DATA SHEET

1. Chemical Product and Company Identification

Trade Name: DIACOPORE
Chemical Name: Aluminum Oxide (α -Al₂O₃)
Synonyms: Alumina, α -Alumina, Corundum
Product Code: DIACOPORE V-11
Use: Catalytic Supports, Porous Membranes, Alumina Ceramics
Manufacturer: Sawyer Technical Materials, LLC
35400 Lakeland Boulevard, Eastlake, OH 44095, USA
Emergency Telephone: 440-951-8770

2. Composition / Information on Ingredients

<u>Component</u>	<u>CAS#</u>	<u>Exposure Limits</u>	<u>% By Weight</u>
Aluminum oxide	1344-28-1	15 mg/m ³ (total dust), 5 mg/m ³ (respirable fraction)	100

<u>Component</u>	<u>EINECS#</u>	<u>RTECS#</u>	<u>ICSC#</u>
Aluminum oxide	215-691-6	BD1200000	0351

3. Hazard Identification

Emergency Overview:

Not flammable.

Dust or fume can be irritating to eyes, skin, and upper respiratory tract.

Hazardous Materials Identification System (HMIS) Ratings

Health: 1 – Slight
Flammability: 0 – None
Reactivity: 0 – None

Health Effects / Health Hazard Identification

Eyes: May cause irritation.
Skin: May cause irritation, redness.
Inhalation: May cause respiratory tract irritation, coughing, or shortness of breath.
Ingestion: May cause gastric or intestinal disorders.
Chronic Exposure: May cause asthma, chronic lung disease, and skin rashes. May have effects on the central nervous system.

Other Hazards

Explosion Hazard: None known.
Fire Hazard: None known.
Corrosion Hazard: None known.

4. First Aid Measures

Eye Contact: Flush eyes with large quantities of water for several minutes. Remove contact lenses if possible. Consult a medical professional.
Skin Contact: Rinse and then wash with soap and water. Consult a physician if irritation occurs.
Ingestion: Give plenty of water to drink in order to dilute. Consult immediately a medical professional. Never give anything by mouth to a convulsing or unconscious person.
Inhalation: Remove person from exposure and supply fresh air. Check for clear airway, breathing, and pulse. Consult a medical professional.
First Aid Facilities: Eye wash station.
Advise to Physicians: Not available.

5. Fire Fighting Measures

The product is not flammable, will not burn in a fire. The product is not an explosion hazard.

Extinguishing Agents: All extinguishing agents allowed. Use firefighting measures that suit the surrounding fire.
Protective Equipment: Wear self-contained respirator and fully protective impervious suit.
Special Exposure Hazard: None known.

6. Accidental Release Measures

Personal Protection: Wear protective clothing, including eye protection, and impervious gloves. An approved respirator should be used if dust is present. Keep unprotected persons away.
Environmental Protection: Do not allow the product to be released to the environment without proper governmental permits.
Cleaning / Collecting: Sweep spilled substance into container(s). If appropriate, moisten first to prevent dusting. Ensure adequate ventilation. Wash away remainder with plenty of water.

7. Handling and Storage

Safe Handling: Ensure good ventilation. Prevent dust formation. Provide suction extractors if dust is formed. Containers of this product may be hazardous, even when empty, if they retain product residues.
Storage: Keep the product dry. Store in dry ventilated area. Keep containers tightly sealed.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:	OSHA Permissible Exposure Limit (PEL): 15 mg/m ³ (total dust), 5 mg/m ³ (respirable fraction). ACGIH Threshold Limit Value (TLV): 10 mg/m ³ (TWA) inhalable (total) particulate matter containing no asbestos and <1% crystalline silica, A4.
General Protective Measures:	The standard precautionary measures for handling chemicals should be followed. Avoid contact with eyes. Do not inhale dust. Keep away from food and beverages. Remove immediately contaminated clothes. Wash hands after working with this product.
Engineering Control:	Use ventilation to keep airborne concentrations below the exposure limits.
Respiratory Protection:	Use approved air-purifying respirator when concentration in air is unknown/exceeds the limits or in case of insufficient ventilation.
Skin Protection:	Wear body-covering clothing and impervious gloves.
Eye Protection:	Wear approved safety glasses.

9. Physical and Chemical Properties

Form:	Sintered ceramics (hollow cylinders)
Color:	White
Odor:	None
Physical State:	Solid
Molecular Weight:	101.96
Melting Point:	2050°C (3722 F)
Boiling Point:	2980°C (5396 F)
Flash Point:	Not applicable
Auto Ignition:	Product is not self igniting
Explosion Limits:	Product is not an explosion hazard
Decomposition Temperature:	Not applicable
Density:	Bulk density: 1.0-4.0 g/cm ³ at 20°C Theoretical density: 3.98 g/cm ³ at 20°C
Solubility in Water:	Insoluble
pH:	Not applicable
Solvents Content:	0%
Solids Content:	100%
Evaporation Rate:	Not determined (negligible at 20°C)
Vapor Pressure:	Not determined (negligible at 20°C)
Viscosity:	Not applicable.
Oxidizing Properties:	Not an oxidizer

10. Stability and Reactivity

Chemical Stability:	Stable under normal ambient and expected storage conditions.
Conditions to Avoid:	No recommendations.
Incompatible Materials:	Chlorine trifluoride, hot chlorinated rubber, acids, oxidizers.
Thermal Decomposition:	No decomposition if used according to specifications.
Dangerous Reactions:	Not available.
Hazardous Decomposition:	Will not occur.
Hazardous Polymerization:	Will not occur.
Corrosive Properties:	Non-corrosive.
Additional Information:	May mechanically scratch softer materials.

11. Toxicological Information

LD50:	Not available.
LC50:	Not available.
Irritant:	Skin and eyes
Mutation Data:	Not available.
Reproductive Effects:	Not available.
Carcinogenic Effects:	Not classifiable as a human carcinogen.
Tumorigenic Data:	Tumorigenic in rats when implanted or intrapleural.

12. Ecological Information

Environmental Toxicity:	Not available.
General Information:	Do not allow the product to be released to the environment without proper governmental permits.

13. Disposal Considerations

Consult state, local, or federal regulations to ensure proper disposal of this product.

14. Transport Information

Not a hazardous material for transportation.

DOT Hazard Class:	None.
Land Transport ADR Class:	None.
Maritime Transport IMDG Class:	Information not available.
Air Transport ICAO-TI and IATA-DGR Class:	Information not available.

15. Regulatory Information

Federal and State Regulations

EPCRA (SARA Title III) Section 313, Toxic Chemicals:	None (subject to reporting only in the fibrous form)
--	--

Materials Safety Data Sheet
DiaCoPore porous alumina carriers

EPCRA (SARA Title III) Section 302, Extremely Hazardous Substances (EHS) Threshold Planning Quantities (TPQ):	None
EPCRA (SARA Title III) Section 304, Extremely Hazardous Substances (EHS) Reportable Quantities (RQ):	None
CERCLA Reportable Quantities (RQ):	None
CWA Reportable Quantities (RQ):	None
CAA Section 112(r), Threshold Quantities (TG):	None
RCRA Hazardous Waste Code:	None
TSCA Chemical Substance Inventory:	Listed

16. Other Information

Disclaimer

Sawyer Technical Materials, LLC provides the information herein in good faith but makes no representation as to its comprehensiveness or accuracy. The MSDS is intended only as a guide to the appropriate precautionary handling of the product by properly trained personnel. Users receiving this MSDS and the information contained herein must exercise their own judgment in determining suitability of the product for their intended use and the users assume the risks and liabilities in connection therewith. Sawyer Technical Materials, LLC will not be responsible for damages resulting from use of or reliance upon the information contained in this MSDS.

References

Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act, EPA 550-B-01-003, October 2001.

NIOSH Registry of Toxic Effects of Chemical Substances (RTECS): Aluminum Oxide (2:3) RTECS# BD1200000, CAS#: 1344-28-1, October 2002.

OSHA Standards for General Industry (29 CFR 1910) with amendments as of February 1, 2000, CCH Inc., Chicago, IL.

L. K. Hudson, C. Misra, and K. Wefers, "Aluminum Oxide", pp. 557-594 in *Ullman's Encyclopedia of Industrial Chemistry*, 5th Edition, Vol. A1, VCH 1985.

EPA Toxic Substance Control Act Chemical Substance Inventory, Initial Inventory, Volume I, May 1979.

Online NIOSH Pocket Guide to Chemical Hazards, No. 0021: Alpha Alumina, CAS#: 1344-28-1.

NIOSH International Chemical Safety Cards, No. 0351: Alpha Aluminum Oxide, CAS# 1344-28-1.

Code of Federal Regulations, Title 40 – Protection of Environment, Volume 18, Chapter I – Environmental Protection Agency (revised July 1, 2002) § 117.3, Table 117.3 – Reportable Quantities of Hazardous Substances Designated Pursuant to Section 311 of the Clean Water Act.

European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), Annex A, Part III – Dangerous goods list, special provisions and exemptions related to dangerous goods packed in limited quantities, January 1, 2003.