

Material Safety Data Sheet

acc. to 91/155/EEC

Printing date 09/02/2003

Reviewed on 09/02/2003

* 1 Chemical Product and Company Identification

· **Product Name:** **ACTIVATED ALUMINAS**

149

Activated and Amorphous Aluminas

· **Other Designations:**

Active bed supports, CG-20, CPA series, CPN, CSS series, DD-2, D-410, DD-420, DD-422, DD-431, DD-440, DD-447, DD-450, DD-460, DD-470, DD-6, DD-PG, DF Series, F-2xx Series, F-200, F-220, HF-200, LD-5, LD-350, PSD-350, S-100, S-400, S-431, SAS Gamma Spheres, SRU, TG-431 and Selexsorb(R) Si.

· **Application of the substance / the preparation**

Adsorbent

Drier/Catalyst

Preparation of catalysts

· **Manufacturer/Supplier:**

Alcoa World Alumina LLC

201 Isabella Street

Pittsburgh, PA 15212-5858 USA

Health & Safety: +1-412-553-4649

Alcoa World Alumina LLC

109 Highway 131

Vidalia, LA 71373

Tel: +1-318-336-9601 or +1-800-533-4511

Discovery Aluminas, Inc.

3502 South Riverview Drive

Port Allen, LA 70767

Tel: +1-225-389-9945

· **Information department:** Product Information - Recycling of activated aluminas +1-318-336-9601

· **Emergency Information:** USA: Chemtrec: +1-703-527-3887 +1-800-424-9300 ALCOA: +1-412-553-4001

* 2 Composition/Data on components:

CAS No:	Component	
1333-84-2	Aluminum oxide (non fibrous)	<97%

· **Additional information:**

Loss on ignition

4.0-7.0 %%

*1333-84-2 (See Section 15)

* 3 Hazards identification

· **EMERGENCY OVERVIEW:**

· **EYES:** Can cause irritation to the eyes.

· **SKIN:** Can cause skin irritation.

· **INHALATION:** Can cause upper respiratory tract irritation.

· **INGESTION:** Can cause irritation.

· **Chemical ingredient and possible processing hazards:**

Alumina (aluminum oxide): Low health risk by inhalation. Generally considered to be biologically inert.

· **Hazard description:**

· **Medical conditions aggravated by exposure to the product:** Asthma, chronic lung disease, and skin rashes.

· **Information pertaining to particular dangers for man and environment** See item 11.

(Contd. on page 2)

Material Safety Data Sheet

acc. to 91/155/EEC

Printing date 09/02/2003

Reviewed on 09/02/2003

Product Name: ACTIVATED ALUMINAS
Activated and Amorphous Aluminas

149

(Contd. from page 1)

- **Classification system**

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

* 4 First aid measures

- **After inhalation**

Remove to fresh air.

Check for clear airway, breathing, and presence of pulse.

Provide cardiopulmonary resuscitation for persons without pulse or respirations.

Consult a physician.

- **After skin contact**

Wash with soap and water for at least 15 minutes.

Consult a physician if irritation persists.

- **After eye contact**

Flush eyes with plenty of water or saline for at least 15 minutes.

Consult a physician.

- **After swallowing**

Do not induce vomiting.

Never give anything by mouth to a convulsing or unconscious person.

If swallowed, dilute by drinking large amounts of water.

Consult a physician.

* 5 Fire fighting measures

- **Fire/Explosion Hazards:** Non-combustible.

- **Suitable extinguishing agents** Use fire fighting methods and materials that are appropriate for surrounding fire.

- **Protective equipment:**

Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

* 6 Accidental release measures

- **Person-related safety precautions:**



Wear protective clothing.

- **Measures for environmental protection:** No special measures required.

- **Measures for cleaning/collecting:**

Clean up using dry procedures; avoid dusting.

Pick up mechanically.

- **Additional information:** No dangerous substances are released.

* 7 Handling and storage

- **Handling**

- **Information for safe handling:**

Avoid contact with eyes and skin.

Avoid generating dust.

Provide adequate ventilation if dust is formed.

- **Information about protection against explosions and fires:** No special measures required.

- **Storage**

- **Requirements to be met by storerooms and receptacles:** Keep material dry.

(Contd. on page 3)

Material Safety Data Sheet

acc. to 91/155/EEC

Printing date 09/02/2003

Reviewed on 09/02/2003

Product Name: ACTIVATED ALUMINAS
Activated and Amorphous Aluminas

149

(Contd. from page 2)

- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:**
Use with adequate ventilation to meet the limits listed in Section 8.

- **Components with limit values that require monitoring at the workplace:**

1333-84-2 Aluminum oxide (non fibrous)

ACGIH TLV	10 mg/m ³
OSHA PEL	15*, 5** mg/m ³
	* Total dust, ** Respirable fraction

- **Personal protective equipment**
- **General protective and hygienic measures**
Do not inhale dust.
Avoid contact with the eyes.
- **Breathing equipment:**
Use suitable respiratory protection in case of insufficient ventilation.
Suitable respiratory protective device recommended:
Filter NIOSH N95.
- **Protection of hands:** Wear appropriate gloves to avoid any skin injury.
- **Material of gloves** Strong gloves
- **Penetration time of glove material** Not applicable
- **Eye protection:** Safety glasses with full side shields or goggles recommended.

* 9 Physical and chemical properties:

- **General Information**

Form:	Crystalline powder Gelatinous Balls Granules Pellets
Color:	Off-white
Odor:	Odorless

- **Change in condition**

Melting point/Melting range: 2050°C (3722°F)

Boiling point/Boiling range: Undetermined

- **Flash point:** Not applicable

- **Auto igniting:** Product is not self igniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Density:** Not determined

- **Bulk density at 20°C (68°F):** 620-830 kg/m³
38.0-52 lb/ft³

- **Solubility in / Miscibility with**

Water: Insoluble

- **pH-value at 20°C (68°F):** 9.4-10.1 (10% in water)

(Contd. on page 4)

Material Safety Data Sheet

acc. to 91/155/EEC

Printing date 09/02/2003

Reviewed on 09/02/2003

Product Name: ACTIVATED ALUMINAS
Activated and Amorphous Aluminas

149

(Contd. from page 3)

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Reactions:** Heating occurs when water is added.
- **Dangerous products of decomposition:** No dangerous decomposition products known.
- **Additional information:** Non-corrosive.

* 11 Toxicological information

- **Primary irritant effect:**
- **On the skin:** Can cause skin irritation.
- **On the eye:** Can cause irritation to the eyes.
- **Inhalation:** Can cause upper respiratory tract irritation.
- **Ingestion:** Can cause irritation.

12 Ecological information:

- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.

* 13 Disposal considerations

- **Product:**
- **Recommendation** If reuse or recycling is not possible, material may be disposed of at an industrial landfill.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to local or governmental regulations.
- **RCRA Status:**
Not federally regulated in the U.S. if disposed of "as is".
Otherwise, characterize in accordance with applicable regulations (40 CFR 261 or state equivalent in the U.S.).

* 14 Transport information

- | | |
|--|--|
| · DOT regulations: | |
| · Remarks: | U.S.A. DOT: Not regulated - Enter the proper freight classification. "MSDS Number," and "Product Name" on the shipping paperwork.

Canadian TDG Hazard Class & PIN: Not regulated. |
| · Land transport ADR/RID (cross-border) | |
| · Remarks: | Not regulated |
| · Maritime transport IMDG: | |
| · Marine pollutant: | No |
| · Remarks: | Not regulated |
| · Air transport ICAO-TI and IATA-DGR: | |
| · Remarks: | Not regulated |

* 15 Regulations

- **U.S. Federal Regulations:**
- **TSCA STATUS:**
All components of this product are listed on the TSCA inventory.

(Contd. on page 5)

USA

Material Safety Data Sheet

acc. to 91/155/EEC

Printing date 09/02/2003

Reviewed on 09/02/2003

Product Name: ACTIVATED ALUMINAS
Activated and Amorphous Aluminas

149

(Contd. from page 4)

- *For TSCA inventory reporting purposes, CAS No. 1344-28-1 was assigned for all forms of aluminum oxide instead of the CAS No. 1333-84-2 as indicated in Section 2.
- **CERCLA REPORTABLE QUANTITY:** None.
- **SARA TITLE III:**
 - Section 302 Extremely Hazardous Substances:** None.
 - **Section 311/312 Hazardous Categories:** Immediate (acute).
 - **Section 313 Toxic Categories:** None.
- **OTHER INFORMATION:**
 - In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.
- **National regulations**
- **Water hazard class:** Generally not hazardous for water.
- **International Regulations:**
- **CANADIAN DOMESTIC SUBSTANCES LIST:**
 - All components of this product are listed on the Canadian DSL.
 - WHMIS Hazard Class: D2B
- **AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES:** All components of this product are listed on the AICS.
- **Japan - Existing and New Chemical Substances (ENCS)** All components of this product are listed on ENCS.

* 16 Other information:

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:**
 - Hazardous Materials Control Committee
 - Preparer: Jon N. Peace, +1-412-553-2293
 - Alcoa Inc., 201 Isabella Street, Pittsburgh, PA 15212-5858 USA
 - 02 Sep 03 Supersedes 23 May 03
- **Alcoa MS #:** 103396
- **Appendix:**
 - Guide to Occupational Exposure Values 2003, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
 - Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1991, Compiled by the American Conference of Governmental Industrial Hygienists, Inc. (ACGIH).
 - NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, June 1994.
 - Dangerous Properties of Industrial Materials, Sax, N. Irving, Van Nostrand Reinhold Co., Inc., 1984.
 - Patty's Industrial Hygiene and Toxicology: Volume II: Toxicology, 4th ed., 1994, Patty, F. A.; edited by Clayton, G. D. and Clayton, F. E.: New York: John Wiley & Sons, Inc.
 - Integrated Index(R), MICROMEDEX, Inc., 2003
- **LEGEND:**
 - ACGIH American Conference of Governmental Industrial Hygienists
 - AICS Australian Inventory of Chemical Substances
 - CAS Chemical Abstract Services
 - CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 - CFR Code of Federal Regulations
 - CPR Cardio-pulmonary Resuscitation
 - DOT Department of Transportation
 - DSL Domestic Substances List (Canada)
 - EINECS European Inventory of Existing Commercial Chemical Substances
 - ENCS Japan - Existing and New Chemical Substances
 - EWC European Waste Catalogue
 - EPA Environmental Protective Agency
 - IARC International Agency for Research on Cancer
 - LC Lethal Concentration

(Contd. on page 6)

Material Safety Data Sheet

acc. to 91/155/EEC

Printing date 09/02/2003

Reviewed on 09/02/2003

Product Name: ACTIVATED ALUMINAS
Activated and Amorphous Aluminas

149*(Contd. from page 5)*

LD	Lethal Dose
MAK	Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL	Non-Domestic Substances List (Canada)
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PIN	Product Identification Number
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TCLP	Toxic Chemicals Leachate Program
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

m meter, cm centimeter, mm millimeter, in inch,
g gram, kg kilogram, lb pound, µg microgram,
ppm parts per million, ft feet

*** Data compared to the previous version altered.**

USA