Section 1 - Product and Company Information

Product Name                      ALUMINA, FOR COLUMN CHROMATOGRAPHY ACTIVITY GRADE SUPER I TYPE WN-6
Product Number                    A1522
Brand                             SIGMA
Company                           Sigma-Aldrich
Street Address                    3050 Spruce Street
City, State, Zip, Country         SAINT LOUIS MO 63103 US
Technical Phone:                   314 771 5765
Emergency Phone:                  414 273 3850 Ext. 5996
Fax:                              800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name                  ALUMINA ACTIVATED                   CAS #          SARA 313
Synonyms                       Al2O3                                1344-28-1      Yes
Formula                        Al2O3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Irritant.
Irritating to respiratory system.
Target organ(s): Lungs. Bones.

HMIS RATING
HEALTH: 2*
Section 4 - First Aid Measures

**ORAL EXPOSURE**
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**INHALATION EXPOSURE**
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

**DERMAL EXPOSURE**
In case of contact, immediately wash skin with soap and copious amounts of water.

**EYE EXPOSURE**
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

**CONDITIONS OF FLAMMABILITY**
Material may have an exothermic reaction above 200°C with halocarbon vapors and may produce toxic hydrochloric acid and phosgene.

**FLASH POINT**
N/A

**AUTOIGNITION TEMP**
N/A

**FLAMMABILITY**
N/A

**EXTINGUISHING MEDIA**
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

**FIREFIGHTING**
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

**PROCEDURE(S) OF PERSONAL PRECAUTION(S)**
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Store in a cool dry place.

SPECIAL REQUIREMENTS
Very hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Government approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS
Country Source Type Value Remarks
USA MSHA Standard
Remarks: Nuisance Particulates.
USA OSHA. PEL 8H TWA 15 MG/M3, TOTAL DUST
New Zealand OEL Remarks: check ACGIH TLV

EXPOSURE LIMITS
Country Source Type Value
Poland NDS 2 MG/M3
Poland NDSCh 16 MG/M3
Poland OSHA. TLV 15 mg/m3

Section 9 - Physical/Chemical Properties

Appearance Physical State: Solid

Property Value At Temperature or Pressure
Molecular Weight 101.96 AMU
pH 9.4 - 10.1 20 °C
BP/BP Range 2,980 °C
MP/MP Range 2,038 °C
Freezing Point N/A
Vapor Pressure 1 mmHg 2,158 °C
Vapor Density N/A
Saturated Vapor Conc.  N/A
SG/Density              4 g/cm³
Bulk Density            N/A
Odor Threshold          N/A
Volatile%               N/A
VOC Content             N/A
Water Content           N/A
Solvent Content         N/A
Evaporation Rate        N/A
Viscosity               N/A
Surface Tension         N/A
Partition Coefficient   N/A
Decomposition Temp.     N/A
Flash Point             N/A
Explosion Limits        N/A
Flammability            N/A
Autoignition Temp       N/A
Refractive Index        1.76 - 1.768
Optical Rotation        N/A
Miscellaneous Data      N/A
Solubility              Solubility in Water: Insoluble.

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Conditions to Avoid: Protect from moisture.
Materials to Avoid: Strong acids, Strong bases, Chlorine trifluoride, Ethylene oxide, Halocarbons, Oxygen difluoride, Sodium nitrate, Vinyl acetate.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Aluminum oxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)
Lungs. Bones.

SIGNS AND SYMPTOMS OF EXPOSURE
Prolonged exposure can cause: Damage to the lungs. Exposure can cause: Coughing, chest pains, difficulty in breathing. Gastrointestinal disturbances.

CHRONIC EXPOSURE - CARCINOGEN
Result: This product is or contains a component that is not
classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat
Route of Application: Intrapleural
Dose: 90 MG/KG
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Lungs, Thorax, or Respiration:Tumors.

Species: Rat
Route of Application: Implant
Dose: 200 MG/KG
Result: Tumorigenic:Neoplastic by RTECS criteria. Tumorigenic: Tumors at site or application.

Species: Rat
Route of Application: Implant
Dose: 200 MG/KG
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

ACGIH CARCINOGEN LIST
Rating: A4

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION
Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 37
Risk Statements: Irritating to respiratory system.
S: 22 36
Safety Statements: Do not breathe dust. Wear suitable protective clothing.
US CLASSIFICATION AND LABEL TEXT
  Indication of Danger: Irritant.
  Risk Statements: Irritating to respiratory system.
  Safety Statements: Do not breathe dust. Wear suitable protective clothing.
  US Statements: Target organ(s): Lungs. Bones.

UNITED STATES REGULATORY INFORMATION
  SARA LISTED: Yes
  DEMINIMIS: 0.1 %
  NOTES: This product is subject to SARA section 313 reporting requirements.
  TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
  WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
  DSL: Yes
  NDSL: No

Section 16 - Other Information

DISCLAIMER
  For R&D use only. Not for drug, household or other uses.

WARRANTY
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