Section 1 - Product and Company Information

Product Name: INHIBITOR REMOVER, DISPOSABLE COLUMN, FOR REMOVING TERT-BUTYLCATECHOL
Product Number: 306320
Brand: ALDRICH
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 #: 1344-28-1
SARA 313: Yes

Formula: Al2O3

RTECS Number: BD1200000

Section 3 - Hazards Identification

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

HMIS RATING
HEALTH: 2*
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

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.

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
<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
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<tbody>
<tr>
<td>USA</td>
<td>MSHA Standard</td>
<td></td>
<td></td>
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<tr>
<td>Remarks: Nuisance Particulates.</td>
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<td></td>
<td></td>
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<tr>
<td>USA</td>
<td>OSHA. PEL</td>
<td></td>
<td>8H TWA 15 MG/M3, TOTAL DUST</td>
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<tr>
<td>New Zealand OEL</td>
<td>Remarks: check ACGIH TLV</td>
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EXPOSURE LIMITS
<table>
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<th>Source</th>
<th>Type</th>
<th>Value</th>
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<td>Poland</td>
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<td>2 MG/M3</td>
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<tr>
<td>Poland</td>
<td>NDSCh</td>
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<td>16 MG/M3</td>
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<tr>
<td>Poland</td>
<td>NDSP</td>
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Section 9 - Physical/Chemical Properties

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<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
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<td>Molecular Weight</td>
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<td>pH</td>
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<tr>
<td>BP/BP Range</td>
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<tr>
<td>MP/MP Range</td>
<td>2,038 °C</td>
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<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<td>Vapor Density</td>
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<td>Saturated Vapor Conc.</td>
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<tr>
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<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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</table>
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

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
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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