

**Section 1 - Product and Company Identification**

Product Name: **Aluminum Oxide**
Agilent Part Number: **5080-8875**
Date of Original: **01/13/03; 07/05/00**
Manufacturer's Name: **AGILENT TECHNOLOGIES, INC.**
2850 Centerville Road
Wilmington, Delaware 19808

Number of Pages: 4

USA Information Telephone Number: **1-302-633-8899**USA Emergency Telephone Number: **1-877-4Agilent**

When calling from outside the USA, dial your International Access Code for the USA, then 1, then 302 633-8899

Section 2 - Composition/Information on Ingredients

A plastic container of aluminum oxide [1344-28-1] for use in recoating NPD collectors

Chemical Family: Inorganic oxide

Chemical Synonyms: Aluminum oxide is also known as *alumina and dialuminum trioxide*

Section 3 - Hazards Identification

Harmful by inhalation. Irritating to respiratory system.

Section 4 - First Aid Measures

Inhalation: Harmful if inhaled. Dust is irritating to the mucous membranes and upper respiratory tract. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. If inhaled, remove to fresh air. If breathing is difficult give oxygen. Contact Physician immediately. **Eye Contact:** Dust is irritating to the eyes. Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water by separating the eyelids with fingers. Contact Physician immediately. **Skin Contact:** Causes skin irritation. In case of contact, immediately wash skin with soap and copious amounts of water. Remove and wash contaminated clothing promptly. **Ingestion:** Harmful if swallowed. If ingested, wash out mouth with water. Call "Poison Control Center" for assistance. Contact Physician immediately.

Section 5 - Fire-Fighting Measures

Extinguishing Media: Appropriate to surrounding environment. **Special Fire Fighting Procedures:** Wear full protective clothing and self contained positive pressure breathing apparatus certified by NIOSH, when fighting chemically-related fires. **Unusual Fire and Explosion Hazards:** When exposed to water, material can get quite hot, flooding will reduce temperature to a safe limit.

Section 6 - Accidental Release Measures

Personal protective equipment should be worn during remediation of accidental release according to the nature and quantity of the material involved. See Section 8 for a description of recommended protective equipment. Sweep the spill area. Collect the spilled material in a waste container. Avoid breathing dust.

DISCLAIMER: This Material Safety Data Sheet is offered without charge to the clients of Agilent Technologies. Data is the most current available to Agilent Technologies at the time of preparation and is issued as a matter of information only, no warranty as to its accuracy or completeness is expressed or implied.

Section 7 - Handling and Storage

Do not breathe dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Store in a cool, dry place. Keep container tightly closed. Wash thoroughly after handling. Proper storage must be determined based on other materials stored and their hazards and potential chemical incompatibility.

Section 8 - Exposure/Personal Protection

Ventilation: Adequate ventilation is required to protect personnel from exposure to dust exceeding PEL. See Section 15 for regulatory standards of exposure. **Respiratory:** Use NIOSH approved respirator equipment. **Eyes:** Safety glasses are considered minimum protection. Chemical safety goggles or face shield may be necessary depending on quantity of material and conditions of use. Emergency eye wash fountains should be available in the vicinity of any possible exposure. **Skin:** Chemical-resistant protective gloves and clothing are recommended. The choice of protective gloves or clothing must be based on chemical resistance and other user requirements. Generally, BUNA-N offers acceptable chemical resistance. Individuals who are acutely and specifically sensitive to this chemical may require additional protective clothing.

Section 9 - Physical and Chemical Properties

Flash Point (Method Used): **Not flammable**
Explosion Potential: **LEL (NA)/UEL(NA)**
Specific Gravity (H₂O = 1): **3.97** Melting Point (Degree C): **2050**
Evaporation Rate (n-butyl acetate =1): **NA** Boiling Point (Degree C): **2977**
Vapor Pressure (mm Hg.): **1 @ 2158°C** Vapor Density (Air = 1): **NA**
Solubility in Water: **Insoluble (X)/Soluble (NA)**
Appearance and Odor: **White power, no odor.**

Section 10 - Stability and Reactivity

Stability: Stable (x)/Unstable () **Conditions to Avoid:** Moisture (Water) can cause a rise in temperature that may result in a burn. **Incompatibility (Materials to Avoid):** Water; Acids, Bases; Fluorides. **Hazardous Decomposition or Byproducts:** None **Hazardous Polymerization:** May Occur() /Will Not Occur (x)

Section 11 - Toxicological Information

Route(s) of Entry: Inhalation? **Yes** Skin? **Yes** Ingestion? **Yes** **Health Hazard Acute/Chronic:** This chemical is an eye and mucous membrane irritant. Acute exposure causes irritation of eyes, skin, throat and nose. Prolonged exposure can cause damage to the lungs. **Carcinogenicity:** NTP? **NO** IARC Monographs? **No** OSHA Regulated? **No** **Medical Conditions Generally Aggravated by Exposure:** Preclude from exposure those individuals susceptible to upper respiratory health problems.

Section 12 - Ecological Information

Persistence/Degradability: ND **Biodegradability:** ND **Bioaccumulation:** ND

Section 13 - Disposal Considerations

This material is regulated as a hazardous waste in Massachusetts, Minnesota and Pennsylvania. Dispose of as an industrial residual waste according to local regulations.

Section 14 - Transport Information

DOT Regulations: Not Regulated **IATA Regulations:** Not Regulated

RID/ADR: ND

ADNR: ND

Section 15 - Regulatory Information

Chemical Name	CAS #	OSHA PEL/TWA	ACGIH TLV/TWA	NIOSH TLV/TWA	%Wt/ Volume
<i>Aluminum Oxide</i>	[1344-28-1]	5 mg/m3 (Respirable fraction) 15 mg/m3 (Total dust)	10 mg/m3 (As Al)	ND	100%

SARA Reporting: Section 302: No Section 304: No Section 313: Yes

OSHA Labeling Requirements: Irritant

TSCA Inventory List: Yes

Section 16 - Other Information

Unless otherwise noted, the above information pertains only for the main component and similar types of components in the sample. When no toxicity data is provided, it is prudent to handle this chemical as hazardous. Furthermore, since individual chemical hypersensitivity cannot be predicted, every chemical should be handled with due respect.

European Information

Harmful

R 20: Harmful by inhalation

R 37: Irritating to the respiratory system

S 22: Do not breathe dust

S 38: In case of insufficient ventilation, wear suitable respiratory equipment.

S 36: Wear suitable protective clothing

Other Information

OEL-AUSTRALIA:TWA 10 MG/M3 JAN 1993

OEL-AUSTRIA: MAK 5 MG/M3, DUST, JAN1999

OEL-BELGIUM:TWA 10 MG/M3 JAN 1993

OEL-DENMARK: TWA 10 MG(AL)/M3, JAN1999

OEL-GERMANY:TWA 6 MG/M3 JAN 1993

OEL-THE NETHERLANDS:TWA 10 MG/M3 JAN 1993

OEL-RUSSIA:STEL 4 MG/M3 JAN 1993

OEL-SWITZERLAND:TWA 6 MG/M3 JAN 1993

OEL-UNITED KINGDOM:TWA 10 MG/M3;STEL 20 MG/M3 JAN 1993

OEL-POLAND: MAC(TWA) 2 MG/M3, MAC(STEL) 16 MG/M3, JAN1999

OEL-SWEDEN: TWA 10 MG(AL)/M3 (TOTAL DUST), JAN1999.

OEL-SWEDEN: TWA 4 MG(AL)/M3 (RESP. DUST), JAN1999

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

KEY TO ABBREVIATIONS

ACGIH - American Conference of Governmental Industrial Hygienists **CAS** - Chemical Abstract Service **CFR** - Code of Federal Regulations **DOT** - US Department of Transportation **IARC** - International Agency for Research on Cancer **IATA-DGR** - International Air Transport Association-Dangerous Goods Regulation **LEL** - Lower Explosion Limit **NA** - Not Applicable **ND** - No Data **NIOSH** - National Institute for Occupational Safety and Health **NTP** - National Toxicology Program **OEL** - Occupational Exposure Limit **OSHA** -

SA

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Occupational Safety and Health Administration **PEL** - Permissible Exposure Limit **RID/ADR** - Regulations Concerning the International Carriage of Dangerous Goods by Rail/European Agreement Concerning the International Carriage of Dangerous Goods by Road **TLV** - Threshold Limit Value **TWA** - Time Weighted Average **UEL** - Upper Explosion Limit [] - Indicates CAS Number