

3. HAZARDS IDENTIFICATION (continued)

TARGET ORGANS: Lungs

CARCINOGENICITY: NTP: No IARC: No OSHA: No

4. FIRST AID MEASURES

EYE: Flush eyes with lukewarm water for 15 minutes opening and closing eyelids to ensure adequate rinsing. If redness, irritation, pain, or tearing occurs, seek medical attention.

SKIN: Exposure not anticipated.

INHALATION: Not anticipated. If inhalation of high concentrations occurs, remove to fresh air. If breathing problems occur, a certified professional should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.

INGESTION: None required.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not Applicable

FLAMMABLE LIMITS: LEL: Not Applicable UEL: Not Applicable

NFPA CLASSIFICATION:

HEALTH: 0 FLAMMABILITY: 0 INSTABILITY: 0

EXTINGUISHING MEDIA: Any. Use media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARDS: Non-flammable, non-combustible. Product will not burn.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition will produce aluminum oxide.

FIRE FIGHTING INSTRUCTIONS: Firefighters should wear a NIOSH approved full-facepiece self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout or bunker gear.

6. ACCIDENTAL RELEASE MEASURES

Isolate hazard area and deny entry to unauthorized and/or unprotected personnel. Do not walk through spilled material. Vacuum small amounts. Gently scoop or shovel larger amounts into clean dry container for later recycle or disposal. Water mist may be added to spills as necessary to control the level of airborne dusts. Protective equipment for clean-up personnel depends on the level of exposure anticipated (See Section 8).

7. HANDLING AND STORAGE

Store in dry area in closed containers. Storage and work areas should be periodically cleaned to minimize dust accumulation. Avoid dust inhalation and promulgation. DO NOT use compressed air or dry sweeping to remove dust from work area. Dusts should be removed using an appropriately equipped vacuum. If an appropriate vacuum is unavailable, only wet-clean-up methods should be used (i.e. wet sweeping, misting, etc.). Moisture should be added as necessary to reduce exposure to airborne respirable dust.

7. HANDLING AND STORAGE (continued)

Under dusty conditions, employees should wear coveralls or other suitable work clothing. Vacuum dusty clothing before removal.

Practice good housekeeping. Wash thoroughly after handling. Change contaminated clothing. Do not reuse until laundered.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY: Under normal working conditions, below acceptable exposure guidelines, none is required. For concentrations to 10 X the PEL, a NIOSH approved dust mist respirator should be worn. Appropriate respirator selection will be dependent upon the magnitude of exposure and should be selected in accordance with 29 CFR 1910.134.

SKIN: None required.

EYES: Safety-glasses with side shields or goggles to prevent dust and particles from entering the eye.

ENGINEERING CONTROLS: General ventilation. Local exhaust and enclosed processes may be necessary for processes which generate large quantities of airborne dust.

OTHER: None

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White grains or spheres
ODOR:	Odorless
SOLUBILITY IN WATER:	Insoluble
SPECIFIC GRAVITY (H₂O = 1):	3.6-3.9
MELTING POINT:	3632 °F (2000 °C) (approximate)
pH (10% slurry):	No Data
% VOLATILE	0
PACKAGED BULK DENSITY:	130 Lb./ft ³
TYPES:	Product is available as grains or spheres.

10. STABILITY AND REACTIVITY

STABILITY: Stable

REACTIVITY/INCOMPATIBILITY: Aluminum oxide reacts violently with chlorine trifluoride producing flames. Ethylene oxide polymerizes violently when in contact with pure aluminum oxide. Aluminum oxide is also incompatible with hot chlorinated rubber, acids, and oxidizers.

DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

EYE: Particulate matter may cause physical injury to the eye.

SKIN: May cause minor irritation.

INHALATION: May cause minor transient respiratory irritation.

INGESTION: Ingestion of large quantities may result in gastrointestinal irritation and eventually interference with phosphate absorption which results in rickets.

CHRONIC: Many studies indicate that aluminum oxide dust acts as an "inert" material when inhaled.

SUBCHRONIC: No Data

OTHER: Implantation of aluminum oxide into rats has resulted in tumors at the site of application. Intrapleural administration of 90 mg/kg aluminum oxide has resulted in tumors of the lungs, thorax or respiratory system.

12. ECOLOGICAL INFORMATION

Tabular alumina is relatively inert. It does not contain ozone depleting substances and is not expected to exert an ecotoxic effect or bioconcentrate in the food chain.

13. DISPOSAL CONSIDERATIONS

Dispose of according to applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT): Not Classified

15. REGULATORY INFORMATION

CANADIAN WHMIS: Not classified

EPCRA Section 302 (EHSs): This product does not contain ingredients subject to reporting requirements of 40 CFR Part 355, Appendices A and B (Extremely Hazardous Substances).

CERCLA, Section 304: This product does not contain ingredients subject to state and local reporting under Section 304 of SARA Title III as listed in 40 CFR Part 302, Table 302.4

SARA 313 REPORTING REQUIREMENTS: This product does not contain ingredients subject to the reporting requirements of Section 313 SARA, and Section 6607 of the Pollution Prevention Act:

TSCA (Toxic Substances Control Act): All ingredients contained in this product are on the TSCA inventory.

15. REGULATORY INFORMATION (continued)

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and by definition meets the requirements of the following category:
Acute Health Hazard

16. OTHER INFORMATION

Revision Date: 5/7/98 added TSCA information.
10/3/00 reissued with no changes.
8/27/01 updated new area code for manufacturing facility.
8/15/03 Health and safety review and update

KEY:

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service
(C): Ceiling Limit
DOT: Department of Transportation
IARC: International Agency for Research on Cancer
MSHA: Mine Safety and Health Administration
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
SARA: Superfund Amendment and Reauthorization Act
TLV: Threshold Limit Value

DISCLAIMER

Although reasonable care has been taken in the preparation of the information contained herein, C-E Minerals extends no warranties, makes no representation and assumes no responsibility as to the accuracy of suitability of such information for application to purchaser's intended purposes or for consequences of its use.