

MATERIAL SAFETY DATA SHEET (MSDS)**Section 1. Chemical product & company identification**

PRODUCT NAME: WHITE ALUMINIUM OXIDE
 PRODUCT NAME/SYNONYMS: WHITE FUSED ALUMINA —
 MOLECULAR FORMULA Al_2O_3
 HMIS HEALTH 1
 FLAMMABILITY 0
 PHYSICAL HAZARD 0
 Personal Protection E

PREPARATION/REVISION DATE: 2.2010

Section 2. Composition/information on ingredients

CHEMICAL NAME: Aluminum Oxide (non-fibrous)
 CAS NO. 1344-28-1
 EINECS 215-691-6
 % BY WEIGHT 99.5 – 99.76
 OSHA PEL Total (TWA) 15 mg/m³
 Respirable (TWA) 5 mg/m³

CHEMICAL NAME: IMPURITIES
 $SiO_2 + Fe_3O_3 + Na_2O + CaO + MgO + TiO_2$
 % BY WEIGHT < 1.0

Section 3. Hazard Identification/Potential Health Effects

Emergency Overview: Dust irritating to eyes and respiratory tract

EYE Mechanical eye irritant. May cause tearing and redness.
 SKIN Mechanical skin irritant. Prolonged contact may cause skin abrasion, redness, itching.
 SENSITIZATION No data available
 INGESTION May cause nausea and vomiting. No long-term health effects are anticipated.
 INHALATION Dust may be slightly irritating to respiratory tract. May cause coughing or shortness of breath.
 TARGET ORGANS Eyes, skin, respiratory system
 ACUTE EFFECTS of EXPOSURE Exposure may include persistent cough, shortness of breath.
 CHRONIC EFFECTS of EXPOSURE N/A
 SIGNS & SYMPTOMS of EXPOSURE Coughing, shortness of breath

Section 4. First Aid Measures

EYES Flush eyes with large amounts of water. If signs/symptoms persist, seek medical attention.
 SKIN Wash affected area with soap and water. If signs/symptoms persist, seek medical attention.
 INHALATION Remove person to fresh air. If signs/symptoms develop,

INGESTION seek medical attention.
Ingestion is an unlikely route of exposure. Leave decision to induce vomiting to qualified medical personnel, since particles may be aspirated into the lungs. Seek immediate medical attention.

Section 5. Fire Fighting Measures

COMBUSTIBLE PROPERTIES None
EXTINGUISHING MEDIA Extinguisher suitable for ordinary combustible materials. Class A extinguishing agents.
SPECIAL FIRE FIGHTING PROCEDURES In fire conditions, fire-fighters should wear appropriate respiratory protection and full protective gear.
FIRE & EXPLOSION HAZARDS Not applicable. None inherent in this product.

Section 6. Accidental Release Measures

PERSONAL SAFETY PRECAUTIONS Avoid creating dust. Avoid contact with skin and eyes. Use with adequate ventilation.
ENVIRONMENTAL PRECAUTIONS Ensure material is properly disposed of.
CLEANUP MEASURES Collect spilled material mechanically and place in a suitable, compatible, properly labeled container. Avoid creating any dust. Ensure adequate ventilation and dispose of material in accordance with all applicable local, state and federal laws.

Section 7. Handling & Storage

HANDLING Avoid contact with skin and eyes. Wash hands before eating. Prevent the formation of dust. Handle with adequate ventilation.
STORAGE Normal Storage: Store in the original container in a cool, dry well ventilated area. Keep containers tightly sealed.

Section 8. Handling & Storage

ENGINEERING CONTROLS Provide sufficient mechanical ventilation to reduce airborne concentrations and minimize exposure. Maintain employee exposure below applicable permissible exposure limits.
HYGIENIC MEASURES Do not inhale dust/smoke/mist. Avoid contact with skin and eyes. Wash hands before eating.
RESPIRATORY PROTECTION Avoid breathing dust. Assess exposure concentrations of all materials involved in the workplace. If concentrations exceed the exposure limits listed in Section 2, Exposure Guidelines, or irritation or other symptoms are experienced, follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard 149 approved respirator.
EYE PROTECTION Avoid eye contact. To minimize the risk of injury to eyes, always wear appropriate protective safety glasses or chemical safety goggles.
SKIN PROTECTION Avoid skin contact. Wear appropriate protective clothing to minimize risk of injury to skin from contact with dust or physical abrasion.

Section 9. Physical & Chemical Properties

FORMULA	Al ₂ O ₃
PHYSICAL STATE	Solid-granular
BOILING POINT	N/A
MELTING POINT	2100°C
pH at 20°	N/A
APPEARANCE	White
ODOR	Odorless
FLASH POINT	N/A
DECOMPOSITION TEMPERATURE	N/A
VAPOR PRESSURE	N/A
VAPOR DENSITY	N/A
EXPLOSIVE PROPERTIES	None
SOLUBILITY	Insoluble
OXIDIZING PROPERTIES	N/A
SPECIFIC GRAVITY	3.6
BULK DENSITY	N/A

Section 10. Stability & Reactivity

THERMAL DECOMPOSITION	N/A
INCOMPATIBILITY	N/A
CONDITIONS TO AVOID	None known
HAZARDOUS DECOMPOSITION PRODUCTS	None expected
DANGEROUS REACTIONS	None known
HAZARDOUS POLYMERIZATION	Will not occur

Section 11. Toxicological Information

CAS # 1344-28-1

COMPONENT ANALYSIS LD50/LC50	
CARCINOGENICITY	
EPIDEMIOLOGY	
TERATOGENICITY	Data Not Available
NEUROTOXICITY	
MUTAGENICITY	
REPRODUCTIVE EFFECTS	

Section 12. Ecological Information

ECOTOXICITY	Not Available
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Section 13. Disposal Considerations

Solid or chemical waste generators must determine whether a discarded waste is classified as a hazardous waste. U.S. EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local waste regulations to ensure complete and accurate classification.

Section 14. Transportation Information

DOT	This product is not regulated by USDOT as a Hazardous Material (49 CFR 172.101). No UN code assigned. No placard required for transportation.
IMDG	Not regulated as a Hazardous Material.
ACAO/IATA	Not regulated as a Hazardous Material.
EU (ADR, RID)	Not regulated as a Hazardous Material.

Section 15. Regulatory Information

TSCA	Aluminum Oxide is listed on the TSCA inventory under CAS# 1344-28-1
RCRA	Aluminum Oxide is not classified as a hazardous material under RCRA or its regulations, 40 CFR 261.
CERCLA	Aluminum Oxide is not classified as a hazardous substance under CERCLA regulations, 40 CFR 302.
SARA	Aluminum Oxide is not an extremely hazardous substance in Section 302 and is not a toxic chemical subject to the requirements of 313.

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