

# SAFETY DATA SHEET (SDS) – ILLINOIS VALLEY MINERALS LLC

## \*\*\*Section 1 - IDENTIFICATION\*\*\*

### Product Identifier

**Material Name:** ALUMINUM OXIDE

#### Synonyms

ALUNDUM; ALUMINA; DIALUMINUM TRIOXIDE; ALUMINUM SESQUIOXIDE; ALPHA-ALUMINA; BETA-ALUMINA; GAMMA-ALUMINA; ALUMITE; ALMITE; MARTOXIN; BAIKALOX POLISHING CHEMICALS (BAIKOWSKI INTERNATIONAL CO.); TABULAR ALUMINA (ALCOA); ALUMINUM OXIDE (AL<sub>2</sub>O<sub>3</sub>); ALUMINUM TRIOXIDE; LINDE A,B,C (UNION CARBIDE CORPORATION); UCAR SF-6, SF-18, SF-2 (UNION CARBIDE CORPORATION); D ALUMINA POWDERS (UNION CARBIDE CORPORATION); 420003704; WESGO ALUMINA CERAMICS; AL<sub>2</sub>O<sub>3</sub>

#### Chemical Family

metal oxides

#### Recommended Use

commercial chemical

#### Restrictions on Use

None known.

#### Supplier Information:

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**24 HR EMERGENCY RESPONSE:**

**ChemTel (800) 255-3924, 1-813-248-0573**

## \*\*\*Section 2 - HAZARD(S) IDENTIFICATION\*\*\*

### Classification in accordance with 29 CFR 1910.1200.

Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory tract)

Specific Target Organ Toxicity - Repeated Exposure, Category 1 (lungs)

### GHS LABEL ELEMENTS

#### Symbol(s)



#### Signal Word

DANGER

#### Hazard Statement(s)

May cause respiratory irritation

Causes damage to lungs through prolonged or repeated exposure.

#### Precautionary Statement(s)

##### Prevention

Do not breathe dust or mist. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

#### Response

Get medical advice/attention if you feel unwell. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

#### Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

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**Disposal**

Dispose in accordance with all applicable regulations.

**\*\*Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS\*\***

| CAS       | Component      | Percent |
|-----------|----------------|---------|
| 1344-28-1 | Aluminum oxide | 100     |

**Component Related Regulatory Information**

This product may be regulated, have exposure limits or other information identified as the following: Aluminium compounds, Aluminum insoluble compounds, Aluminium oxides, Aluminum Oxide (135152-65-7).

**\*\*Section 4 - FIRST-AID MEASURES\*\***

**Description of Necessary Measures**

**Inhalation**

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**Skin Contact**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

**Eye Contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Ingestion**

If swallowed, get medical attention.

**Most Important Symptoms/Effects**

**Acute**

respiratory tract irritation

**Delayed**

lung damage

**Indication of Immediate Medical Attention and Special Treatment Needed, If Needed**

Treat symptomatically and supportively.

**\*\*Section 5 - FIRE-FIGHTING MEASURES\*\***

**Suitable Extinguishing Media**

Use extinguishing agents appropriate for surrounding fire.

**Unsuitable Extinguishing Media**

None known.

**Special Hazards Arising from the Chemical**

Negligible explosion hazard.

**Hazardous Combustion Products**

**Combustion:** miscellaneous decomposition products

**Advice for firefighters**

Avoid inhalation of material or combustion by-products

**Special Protective Equipment and Precautions for Firefighters**

Wear full protective fire fighting gear including self-contained breathing apparatus(SCBA) for protection against possible exposure.

**Fire Fighting Measures**

Move container from fire area if it can be done without risk. Stay upwind and keep out of low areas.

## **\*\*Section 6 - ACCIDENTAL RELEASE MEASURES\*\***

### **Personal Precautions, Protective Equipment and Emergency Procedures**

Wear personal protective clothing and equipment, see Section 8.

### **Methods and Materials for Containment and Cleaning Up**

Collect spilled material in appropriate container for disposal. Avoid generating dust. Clean up residue with a high-efficiency particulate filter vacuum.

### **Environments Precautions**

Prevent entry into sewers, drains, ditches, underground or confined spaces and waterways.

## **\*\*Section 7 - HANDLING AND STORAGE\*\***

### **Precautions for Safe Handling**

Observe good hygiene and safety practices when handling this product. Avoid creation of dust. Do not breathe dust. Use only outdoors or in a well-ventilated area. Do not eat, drink, or smoke when using this product. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

### **Conditions for Safe Storage, including any Incompatibilities**

Store and handle in accordance with all current regulations and standards. Store in a tightly closed container. Store in a well-ventilated area. Store locked up. Keep separated from incompatible substances.

## **\*\*Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION\*\***

### **Component Exposure Limits**

#### **Aluminum oxide (1344-28-1)**

ACGIH: 1 mg/m<sup>3</sup> TWA (respirable fraction, related to Aluminum insoluble compounds)

OSHA: 15 mg/m<sup>3</sup> TWA (total dust); 5 mg/m<sup>3</sup> TWA (respirable fraction)

Mexico 10 mg/m<sup>3</sup> TWA LMPE-PPT

### **EU – Occupational Exposure Limits (98/24/EC) Binding Biological Limit Values and Health Measures**

There is no biological limit values for any of this product's components

### **ACGIH – Threshold Limit Values - Biological Exposure Indices (BEI)**

There are no biological limit values for any of this product's components.

### **Engineering Controls**

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

### **Individual Protection Measures, such as Personal Protective Equipment**

#### **Eyes/Face Protection**

Wear safety glasses with side shields. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

#### **Skin Protection**

Wear appropriate chemical resistant clothing.

#### **Glove Recommendations**

Wear appropriate chemical resistant gloves.

#### **Respiratory Protection**

Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

Respiratory protection is ranked in order from minimum to maximum.

Consider warning properties before use.

Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any air-purifying full-facepiece respirator equipped with an N95, R95, or P95 filter. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any powered, air-purifying respirator with a high-efficiency particulate filter.

Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

**For Unknown Concentrations or Immediately Dangerous to Life or Health –**

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

**\*\*Section 9 - PHYSICAL AND CHEMICAL PROPERTIES\*\*\***

|                                   |                  |                                      |                                  |
|-----------------------------------|------------------|--------------------------------------|----------------------------------|
| <b>Physical State:</b>            | Solid            | <b>Appearance:</b>                   | white to gray crystals or powder |
| <b>Color:</b>                     | white to gray    | <b>Physical Form:</b>                | crystals or powder               |
| <b>Odor:</b>                      | odorless         | <b>Odor Threshold:</b>               | Not available                    |
| <b>Melting Point:</b>             | 2053 - 2072 °C   | <b>Boiling Point:</b>                | 2980 °C                          |
| <b>Flash Point:</b>               | Not applicable   | <b>Decomposition:</b>                | Not available                    |
| <b>LEL:</b>                       | Not available    | <b>UEL:</b>                          | Not available                    |
| <b>Vapor Pressure:</b>            | 1 mmHg @ 2158 °C | <b>Vapor Density (air = 1):</b>      | Not applicable                   |
| <b>Density:</b>                   | Not available    | <b>Specific Gravity (water = 1):</b> | 3.965 @ 25 °C                    |
| <b>Water Solubility:</b>          | Insoluble        | <b>Log KOW:</b>                      | Not available                    |
| <b>Coeff. Water/Oil Dist:</b>     | Not available    | <b>Auto Ignition:</b>                | Not available                    |
| <b>Viscosity:</b>                 | Not available    | <b>Volatility:</b>                   | <0.5 %                           |
| <b>Molecular Weight:</b>          | 101.96           | <b>Molecular Formula:</b>            | AL2-O3                           |
| <b>Flammability (solid, gas):</b> | Not flammable    | <b>Critical Temperature:</b>         | Not applicable                   |

**Other Property Information**

No additional information is available.

**Solvent Solubility**

**Slightly Soluble:** mineral acids, strong alkali

**Practically Insoluble:** nonpolar organic solvents

**\*\*Section 10 - STABILITY AND REACTIVITY\*\*\***

**Reactivity**

No reactivity hazard is expected.

**Chemical Stability**

Stable at normal temperatures and pressure.

**Possibility of Hazardous Reactions**

Will not polymerize.

**Conditions to Avoid**

Avoid generating dust. Avoid contact with incompatible materials.

**Incompatible Materials**

halo carbons, halogens, combustible materials, oxidizing materials

**Hazardous Decomposition**

**Combustion:** miscellaneous decomposition products

**\*\*\*Section 11 - TOXICOLOGICAL INFORMATION\*\*\***

**Component Analysis - LD50/LC50**

The components of this material have been reviewed in various sources and the following selected endpoints are published:

**Aluminum oxide (1344-28-1)**

Oral LD50 Rat >5000 mg/kg

Acute Toxicity Estimate

Oral >2000 mg/kg

**Inhalation**

irritation, METAL FUME FEVER, difficulty breathing, lung damage

**Ingestion**

no information on significant adverse effects

**Skin Contact**

irritation

**Eye Contact**

Mechanical irritation

**Immediate Effects**

respiratory tract irritation

**Delayed Effects**

lung damage

**Medical Conditions Aggravated by Exposure**

respiratory disorders

**Irritation/Corrosivity Data**

respiratory tract irritation

**Respiratory Sensitization**

No information available for the product.

**Dermal Sensitization**

No information available for the product.

**Germ Cell Mutagenicity**

No information available for the product.

**Carcinogenicity**

**Component Carcinogenicity**

**Aluminum oxide (1344-28-1)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Aluminum insoluble compounds)

DFG: Category 2 (considered to be carcinogenic for man, fibre dust)

**Germ cell mutagenicity, Tumorigenic Data, Reproductive Toxicity**

No information available for the product.

**Specific Target Organ Toxicity - Single Exposure**

No target organs identified

**Specific Target Organ Toxicity - Repeated Exposure**

lungs

**Aspiration Hazard**

Not data available

**\*\*\*Section 12 - ECOLOGICAL INFORMATION\*\*\***

**Component Analysis – Aquatic Toxicity**

No LOLI ecotoxicity data are available for this products components

**Persistence and Degradability**

No information available for the product.

**Bioaccumulation**

No information available for the product.

**Mobility**

No information available for the product.

**Other Toxicity**

No additional information is available.

**\*\*\*Section 13 - DISPOSAL CONSIDERATIONS\*\*\***

**Disposal Methods**

Dispose in accordance with all applicable regulations.

**Disposal of Contaminated Packaging**

Empty containers may contain product residue. Dispose in accordance with all applicable regulations.

**Component Waste Numbers**

The U.S. EPA has not published waste numbers for this product's components.

**\*\*\*Section 14 - TRANSPORT INFORMATION\*\*\***

**US DOT Information**

No Classification assigned.

**\*\*\*Section 15 - REGULATORY INFORMATION\*\*\***

**U.S. Federal Regulations**

This material contains one or more of the following chemicals required to be identified under SARA Sections 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

**Aluminum oxide (1344-28-1)**

SARA 313: 1.0 % de minimis concentration (fibrous forms)

**SARA 311/312 (40 CFR 370 Subparts B and C) 2016 reporting categories**

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

**SARA 311/312 (40 CFR 370 Subparts B and C) 2017 reporting categories**

Specific Target Organ Toxicity

**U.S. State Regulations**

The following components appear on one or more of the following state hazardous substances lists:

| Component      | CAS       | CA  | MA  | MN  | NJ  | PA  |
|----------------|-----------|-----|-----|-----|-----|-----|
| Aluminum oxide | 1344-28-1 | Yes | Yes | Yes | Yes | Yes |

Not regulated under California Proposition 65

**Canada Regulations**

WHMIS CLASSIFICATION: D2B

**Canada WHMIS Ingredient Disclosure List (IDL)**

Components of this material have been checked against the Canadian WHMIS Ingredient Disclosure List. The list is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

**Aluminum oxide (1344-28-1)**

1 %

**Chemical Inventory Listing - US  
Component Analysis - Inventory**

| US  | CA  | EU  | AU  | PH  | JP-<br>ENCS | JP-<br>ISHL | KR-<br>KECI –<br>Annex<br>1 | KR-<br>KECI –<br>Annex<br>2 | KR-<br>REACH-<br>CCA | CN  | NZ  | MX  | TW  |
|-----|-----|-----|-----|-----|-------------|-------------|-----------------------------|-----------------------------|----------------------|-----|-----|-----|-----|
| Yes | DSL | EIN | Yes | Yes | Yes         | No          | Yes                         | No                          | No                   | Yes | Yes | Yes | Yes |

## \*Section 16 - OTHER INFORMATION\* \* \*

### Summary of Changes

Updated 05/18/2015

### **NFPA Ratings: Health: 2 Fire: 1 Reactivity: 0**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

California/Massachusetts/Minnesota/New Jersey/Pennsylvania\*; CAS - Chemical Abstracts Service; CFR - Code of Federal Regulations (US); CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KECI - Korea Existing Chemicals Inventory; KECL - Korea Existing Chemicals List; KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; NDSL - Non-Domestic Substance List (Canada); NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); WHMIS - Workplace Hazardous Materials Information System (Canada).

### **Other Information**

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Reviewed and Approved FEB 2017

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