# Safety Data Sheet SDS-17-5
# AL-CEM, AL-CEM/XT, AL-CEM/XTW, AL-CEM Super

**Revision Date: 11/27/2024**

## Section 1. Identification

**Product identifier**

**Product Identity** AL-CEM, AL-CEM/XT, AL-CEM/XTW, AL-CEM Super

**Other means of identification** Single part, water-based alumina cements.

**Relevant identified uses of the substance or mixture and uses advised against**

Adhesive and coating of thermal and electrical insulation and other refractory materials used primarily at high temperatures.

**Details of the supplier of the safety data sheet**

**Company Name** ZIRCAR Ceramics, Inc
P.O. Box 519
Florida, NY 10921
www.zircarceramics.com
sales@zircarceramics.com

**Emergency**

**24 hour Emergency Telephone No.** CHEMTREC: (800) 424-9300 (USA/Canada), (703) 527-3887 (International)

**Customer Service:** (845) 651-6600

## Section 2. Hazard(s) identification

**Classification of the substance or mixture under OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7).**

The substance is not classified according to the OSHA Hazcom or WHMIS regulations.

**Label elements**

The substance is not classified according to the OSHA Hazcom or WHMIS regulations.

**[Prevention]**

No GHS prevention statements

**[Response]**

No GHS response statements

**[Storage]**

No GHS storage statements

**[Disposal]**

No GHS disposal statements

**Other hazards**

This product contains no PBT/vPvB/vPvM chemicals.

This product contains no endocrine disrupting chemicals.

## Section 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7).

| Ingredient/Chemical Designations | Weight % | GHS Classification | Notes |
|---|---|---|---|
| **Aluminum oxide**<br>**CAS Number: 1344-28-1**<br>**Synonyms: ALUMINUM OXIDE (AL2 O3), Aluminum oxide (fibrous forms)** | **80 - 100** | **Not Classified** | **-----** |
| **Amorphous Silica**<br>**CAS Number: 7631-86-9**<br>**Synonyms: Silica dioxide** | **3 - 7** | **Not Classified** | **-----** |

The actual concentration or concentration range is withheld as a trade secret.
*PBT/vPvB - PBT, vPvM or vPvB-substance.
The full texts of the phrases are shown in Section 16.

## Section 4. First aid measures

### Description of first aid measures

**General** In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

**Inhalation** Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

**Eyes** Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

**Skin** Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

**Ingestion** If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

### Most important symptoms and effects, both acute and delayed

**Overview** Note to Physicians: Aluminum Oxide dusts have caused no systemic or pathological problems. The material is inert in the body. Some individuals may experience allergic sensitivity reactions. These are generally limited to mild occupational dermatitis. Chronic inhalation may result in pleural plaques not associated with cancers. Other effects principally derived from physical abrasion. These products contain a small percentage of amorphous silica, however, not in sufficient quantity to produce free crystalline silica upon heating. Dusts are therefore considered of the inert (nuisance) type and would not be expected to cause permanent damage to tissues on inhalation unless the exposure is severe. Chronic exposure may produce radioplaque deposits in the pulmonary system with little or no parenchymal reactions. Some individuals may exhibit allergenic reactions ranging from asthmatic symptoms to benign pneumoconiosis. Treat symptomatically.

## Section 5. Fire-fighting measures

**Extinguishing media**

Recommended extinguishing media; alcohol resistant foam, $CO^2$, powder, water spray.
Unsuitable extinguishing media: Do not use; water jet.

**Special hazards arising from the substance or mixture**

Hazardous decomposition: No hazardous decomposition data available.

**Advice for fire-fighters**

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

**ERG Guide No.** ---

## Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Put on appropriate personal protective equipment (see section 8).

**Environmental precautions**

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

**Methods and material for containment and cleaning up**

Liquid materials should be cleaned up using sponge, mop or cloth. Clean up procedures should minimize formation of airborne dusts. Remove dust by vacuuming using HEPA filtration where possible.
Release into Air: Prevent release of airborne particulates where possible. Do not blow dust around. Not a regulated hazardous substance. See Section 8 for appropriate engineering controls.
Release into Water: Release into water is not appropriate. Not a regulated hazardous substance.

## Section 7. Handling and storage

**Precautions for safe handling**

Handle containers carefully to prevent damage and spillage.

These materials should be stored in a sealed container.
Normal Use: Materials are stable under normal use and are not expected to produce significant hazardous by-products or emissions.
Machining and Cutting: After dried, these materials may produce respirable and nuisance dusts when machined or cut. See Section 8 for exposure controls and personal protection during machining or installation procedures.

**Conditions for safe storage, including any incompatibilities**

High Temperature Conditions: Service significantly above the product design temperature may increase friability and the possibility of generating airborne dust. While not considered problematic during use, such dust may complicate removal activities. It is recommended that product use be carefully matched to design parameters.

After Service: Appropriate ventilation and respiratory protection should be provided in compliance with OSHA standards. Strict adherence to recommended safe work practices is advised. Product removal must consider possible pickup of contaminants found where used and the possibility of usage above design temperatures. See Section 8 for appropriate respiratory protection during removal of material the subject of this SDS.

Incompatible materials: Powerful oxidizers; fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, etc.

**Specific end use(s)**

No data available.

## Section 8. Exposure controls / personal protection

**Control parameters**

**Exposure**

| CAS No. | Ingredient | Source | Value |
|---|---|---|---|
| 1344-28-1 | Aluminum oxide | OSHA | 15 mg/m$^3$ (total dust), 5 mg/m$^3$ (respirable fraction) |
| | | ACGIH | No Established Limit |
| | | NIOSH | no established RELs |
| 7631-86-9 | Amorphous Silica | OSHA | TWA 20 mppcf (80 mg/m$^3$/%SiO2) |
| | | ACGIH | No Established Limit |
| | | NIOSH | TWA 6 mg/m$^3$ |

**Exposure controls**

**Respiratory**

Use appropriate protection pursuant to OSHA 29CFR 1910.134 and 29CFR 1926.103. The following information is provided as a guide and reflects industry recommendations for control of dust.
PPE < 1.0 f/cc No specific recommendation, use personal protective equipment based on local conditions.
PPE 1.0 f/cc to 5.0 f/cc Half-face, air purifying respirator equipped with a high efficiency particulate air (HEPA) filter cartridge.
PPE 5.0 to 25 f/cc Full-face, air purifying respirator equipped with a high efficiency particulate air (HEPA) filter cartridge
PPE > 25 f/cc Full-face, positive pressure, supplied air respirator.

**Eyes**

Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses without goggles. Do not get dust or liquids into eyes. Have eye washing facilities available when using products

**Skin**

Wear gloves, head coverings and full body clothing to prevent skin irritation. Disposable clothing may be used. Store work clothes and street clothes separately

**Engineering Controls**

Use dust suppression controls. Local exhaust ventilation, point of generation dust collection and/or down-draft work stations to minimize airborne dust generation are recommended when machining product threated with these materials.

**Other Work Practices**

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

## Section 9. Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical State** | Liquid |
| **Color** | White, Viscous |
| **Odor** | Slightly Acidic |
| **Melting point / freezing point** | >1871C (3400F) Dried |
| **Initial boiling point and boiling range** | Not Available |
| **Flammability (solid, gas)** | Not Applicable |
| **Upper/lower flammability or explosive limits** | **Lower Explosive Limit:** Not Available<br>**Upper Explosive Limit:** Not Available |
| **Flash Point** | Not Available |
| **Auto-ignition temperature** | Not Available |
| **Decomposition temperature** | Not Available |
| **pH** | 5 |
| **Viscosity (cSt)** | Not Available |
| **Solubility in Water** | Not Available |
| **Partition coefficient n-octanol/water (Log Kow)** | Not Available |
| **Vapor pressure (Pa)** | Not Available |
| **Relative Density** | 1.95 - 2.06 |
| **Vapor Density** | Not Available |
| **Evaporation rate (Ether = 1)** | Not Available |
| **VOC Content** | Not Available |

**Other information**

No other relevant information.

## Section 10. Stability and reactivity

**Reactivity**

Hazardous Polymerization will not occur.

**Chemical stability**

Stable under normal circumstances.

**Possibility of hazardous reactions**

No data available.

**Conditions to avoid**

No data available.

**Incompatible materials**

Powerful oxidizers; fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, etc.

**Hazardous decomposition products**

No hazardous decomposition data available.

## Section 11. Toxicological information

### Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

| Ingredient | Oral LD50, mg/kg | Skin LD50, mg/kg | Inhalation Vapor LC50, mg/L/4hr | Inhalation Dust/Mist LC50, mg/L/4hr | Inhalation Gas LC50, ppm |
|---|---|---|---|---|---|
| Aluminum oxide - (1344-28-1) | > 15,900.00, Rat - Category: NA | No data available. | No data available. | > 0.89, Rat - Category: NA | No data available. |
| Amorphous Silica - (7631-86-9) | > 5,000.00, Rat - Category: NA | > 5,000.00, Rabbit - Category: NA | No data available. | No data available. | No data available. |

### Carcinogen Data

| CAS No. | Ingredient | Source | Value |
|---|---|---|---|
| 1344-28-1 | Aluminum oxide | OSHA | Regulated Carcinogen: No; |
| | | NTP | Known: No; Suspected: No; |
| | | IARC | Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; |
| | | ACGIH | No Established Limit |
| 7631-86-9 | Amorphous Silica | OSHA | Regulated Carcinogen: No; |
| | | NTP | Known: No; Suspected: No; |
| | | IARC | Group 1: No; Group 2a: No; Group 2b: No; Group 3: Yes; |
| | | ACGIH | No Established Limit |

| Classification | Category | Hazard Description |
|---|---|---|
| Acute toxicity (oral) | --- | Not Applicable |
| Acute toxicity (dermal) | --- | Not Applicable |
| Acute toxicity (inhalation) | --- | Not Applicable |
| Skin corrosion/irritation | --- | Not Applicable |
| Serious eye damage/irritation | --- | Not Applicable |
| Respiratory sensitization | --- | Not Applicable |
| Skin sensitization | --- | Not Applicable |
| Germ cell mutagenicity | --- | Not Applicable |
| Carcinogenicity | --- | Not Applicable |
| Reproductive toxicity | --- | Not Applicable |
| STOT-single exposure | --- | Not Applicable |
| STOT-repeated exposure | --- | Not Applicable |
| Aspiration hazard | --- | Not Applicable |

**Possible routes of entry:** No data available.

**Symptoms and effects, both acute and delayed:**
Note to Physicians: Aluminum Oxide dusts have caused no systemic or pathological problems. The material is inert in the body. Some individuals may experience allergic sensitivity reactions. These are generally limited to mild

occupational dermatitis. Chronic inhalation may result in pleural plaques not associated with cancers. Other effects principally derived from physical abrasion. These products contain a small percentage of amorphous silica, however, not in sufficient quantity to produce free crystalline silica upon heating. Dusts are therefore considered of the inert (nuisance) type and would not be expected to cause permanent damage to tissues on inhalation unless the exposure is severe. Chronic exposure may produce radioplaque deposits in the pulmonary system with little or no parenchymal reactions. Some individuals may exhibit allergenic reactions ranging from asthmatic symptoms to benign pneumoconiosis. Treat symptomatically.

## Section 12. Ecological information

**Toxicity**

No additional information provided for this product. See Section 3 for chemical specific data.

**Aquatic Ecotoxicity**

| Ingredient | 96 hr LC50 fish, mg/L | 48 hr EC50 crustacea, mg/L | ErC50 algae, mg/L |
|---|---|---|---|
| Aluminum oxide - (1344-28-1) | 114.97, Channa marulius | 1.90, Ceriodaphnia dubia | 0.57, Pseudokirchneriella subcapitata |
| Amorphous Silica - (7631-86-9) | 1,033.02, Fishes species | 512.08, Daphnid species | > 10,000.00, Desmodesmus subspicatus |

**Persistence and degradability**

There is no data available on the preparation itself.

**Bioaccumulative potential**

Not Available

**Mobility in soil**

No data available.

**Results of PBT and vPvB assessment**

This product contains no PBT/vPvB/vPvM chemicals.

**Other adverse effects**

No data available.

## Section 13. Disposal considerations

**Waste treatment methods**

Waste should not be released to sewers. Observe all federal, state, and local regulations when disposing of this substance.

## Section 14. Transport information

| | DOT (Domestic Surface Transportation) | IMO / IMDG (Ocean Transportation) | ICAO/IATA |
|---|---|---|---|
| **UN number** | Not Regulated | Not Regulated | Not Regulated |
| **UN proper shipping name** | Not Regulated | Not Regulated | Not Regulated |
| **Transport hazard class(es)** | **DOT Hazard Class:** Not Applicable<br>**Sub Class:** Not Applicable | **IMDG:** Not Applicable<br>**Sub Class:** Not Applicable | **Air Class:** Not Applicable<br>**Sub Class:** Not Applicable |
| **Packing group** | Not Applicable | Not Applicable | Not Applicable |

**Environmental hazards**

Marine Pollutant: No;

**Special precautions for user**

Not Applicable

## Section 15. Regulatory information

**Regulatory Overview** The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Classification of the substance or mixture under OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7).

**Toxic Substance Control Act (TSCA)**

| CAS Number | Ingredient | Toxic Substance Control Act (TSCA) | Comments | Status |
|---|---|---|---|---|
| 0001344-28-1 | Aluminum oxide | Yes | | ACTIVE |
| 0007631-86-9 | Amorphous Silica | Yes | | ACTIVE |

**EPCRA 302 Extremely Hazardous:**
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**EPCRA 313 Toxic Chemicals:**

Aluminum oxide

**Proposition 65 - Carcinogens (>0.0%):**
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**Proposition 65 - Developmental Toxins (>0.0%):**
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**Proposition 65 - Female Repro Toxins (>0.0%):**
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**Proposition 65 - Male Repro Toxins (>0.0%):**
To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

**Proposition 65 Label Warning:**

This product contains no chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

## Section 16. Other information

**Revision Date** 11/27/2024

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

Not Applicable

Disclaimer: The information presented herein is supplied as a guide to those who handle or use this product. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

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