



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
US OSHA Hazard Communication Standard (29 CFR 1910.1200)

Revision date 24-Apr-2026

Revision Number 8

## 1. Identification

### Product identifier

Product Name REACTIVE ALUMINA SPINEL

### Other means of identification

Product Code(s) 1000

Synonyms None

### Recommended use of the chemical and restrictions on use

Recommended use Refractory

Restrictions on use No information available

### Details of the supplier of the safety data sheet

#### Supplier Address

Almatis, Inc.  
P.O. Box 300  
4701 Alcoa Road  
Bauxite, AR 72022  
USA  
Telephone: +1 501-776-4677

#### Manufacturer Address

Qingdao Almatis Co., Ltd.  
No.1 Song Hua Jiang Road  
QGD Econ Dev & Tech Develop Zone  
Huangdao 266510  
P.R. China  
Phone: +86 532 86957300

### Emergency telephone number

Emergency Telephone Argentina: +54 11 5219 8871

## 2. Hazard(s) identification

### Classification of the substance or mixture

#### Hazards not otherwise classified (HNOC)

Not applicable.

### Label elements

#### Hazard statements

#### Hazards classified under paragraph (d)(1)(i)(B) of 1910.1200

No information available.

**Other information**

No information available.

**3. Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

| Chemical name                                | CAS No.   | Weight-% | Trade secret |
|--|-----------|----------|--------------|
| Spinel (Mg(AlO <sub>2</sub> ) <sub>2</sub> ) | 1302-67-6 | 40-60    | *            |
| Aluminum oxide                               | 1344-28-1 | 40-60    | *            |

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

**4. First-aid measures****Description of first aid measures**

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Remove to fresh air.   |
| <b>Eye contact</b>  | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| <b>Skin contact</b> | Wash skin with soap and water.   |
| <b>Ingestion</b>    | Rinse mouth.   |

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

|                            |  |
|----------------------------|--|
| <b>Symptoms</b>            | Contact with dust can cause mechanical irritation or drying of the skin. |
| <b>Effects of Exposure</b> | No information available.  |

**Indication of any immediate medical attention and special treatment needed**

|                           |                        |
|---------------------------|------------------------|
| <b>Note to physicians</b> | Treat symptomatically. |
|---------------------------|------------------------|

**5. Fire-fighting measures**

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>               | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| <b>Unsuitable extinguishing media</b>             | Do not scatter spilled material with high pressure water streams.                                       |
| <b>Specific hazards arising from the chemical</b> | No information available.   |
| <b>Explosion data</b>                             |   |
| <b>Sensitivity to mechanical impact</b>           | None.   |

**Sensitivity to static discharge** None.

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**6. Accidental release measures**

Personal precautions, protective equipment and emergency procedures

**Personal precautions** Ensure adequate ventilation.

Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**Reference to other sections** Personal protective equipment [PPE]. Disposal. Advices on safe handling.

**7. Handling and storage**

Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place.

**8. Exposure controls/personal protection**

Control parameters

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical name               | ACGIH TLV  | OSHA PEL   | NIOSH |
|-----------------------------|--|--|-------|
| Aluminum oxide<br>1344-28-1 | TWA: 1 mg/m <sup>3</sup> respirable particulate matter | TWA: 15 mg/m <sup>3</sup> total dust<br>TWA: 5 mg/m <sup>3</sup> respirable fraction<br>(vacated) TWA: 10 mg/m <sup>3</sup> total dust<br>(vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction | -     |

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

**Engineering controls**                      Showers  
 Eyewash stations  
 Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**                      Appropriate eye/face protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction.

**Hand protection**                              Appropriate hand protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction.

**Skin and body protection**                      Appropriate skin and body protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction.

**Respiratory protection**                      Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

**Appearance**                                      white Powder  
**Physical state**                                      Solid  
**Color**    white  
**Odor (includes odor threshold)**              None

| <u>Property</u>  | <u>Values</u>                  | <u>Remarks • Method</u>  |
|--|--------------------------------|--------------------------|
| <b>Melting point / freezing point</b>                            | 1900 - 2135 °C / °F            |                          |
| <b>Boiling point (or initial boiling point or boiling range)</b> | - / °F                         | Estimated                |
| <b>Flammability</b>  | No data available              | None known               |
| <b>Flammability Limit in Air</b>                                 |                                | None known               |
| <b>Upper flammability or explosive limits</b>                    | No data available              |                          |
| <b>Lower flammability or explosive limits</b>                    | No data available              |                          |
| <b>Flash point</b>   | - / °F                         | Not applicable           |
| <b>Autoignition temperature</b>                                  | - / °F                         | Does not ignite          |
| <b>Decomposition temperature</b>                                 | No data available              | None known               |
| <b>SADT (°C)</b>   | No data available              | None known               |
| <b>pH</b>  | 9.00                           | aqueous solution         |
| <b>pH (as aqueous solution)</b>                                  | No data available              | None known               |
| <b>Kinematic viscosity</b>                                       | No data available              | None known               |
| <b>Dynamic viscosity</b>   | No data available              | None known               |
| <b>Solubility</b>  | insoluble                      |                          |
| <b>Water solubility</b>  | No data available    insoluble |                          |
| <b>Partition coefficient n-octanol/water (log value)</b>         | No data available              | None known               |
| <b>Vapor pressure (includes evaporation rate)</b>                | No data available              | None known               |
| <b>Density and/or relative density</b>                           | No data available              | None known               |
| <b>Bulk density</b>  | Not determined                 |                          |
| <b>Liquid Density</b>  | =3.2 g/cm <sup>3</sup>         |                          |
| <b>Relative vapor density</b>                                    | No data available              | No information available |
| <b>Particle characteristics</b>                                  |                                | None known               |
| <b>Particle Size</b>   | No data available              |                          |
| <b>Particle Size Distribution</b>                                | No data available              |                          |

**Other information**

Information with regard to physical hazard classes

Explosives None

**10. Stability and reactivity**

**Reactivity** No information available.

**Chemical stability** Stable under normal conditions.

**Possibility of hazardous reactions** None under normal processing.

**Conditions to avoid** None known based on information supplied.

**Incompatible materials** None known based on information supplied.

**Hazardous decomposition products** Not applicable.

**11. Toxicological information**Information on likely routes of exposure

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available.

**Skin contact** Specific test data for the substance or mixture is not available.

**Ingestion** Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** No information available.

**Acute toxicity** No information available.

**Numerical measures of toxicity** No information available

| Chemical name   | Oral LD50             | Dermal LD50 | Inhalation LC50        |
|---|-----------------------|-------------|------------------------|
| Spinel (Mg(AlO <sub>2</sub> ) <sub>2</sub> )<br>1302-67-6 | -                     | -           | > 3.5 mg/L ( Rat ) 4 h |
| Aluminum oxide<br>1344-28-1                               | > 15900 mg/kg ( Rat ) | -           | -                      |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** No information available.

**Serious eye damage/eye irritation** No information available.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

|                                 |                           |
|---------------------------------|---------------------------|
| <b>Carcinogenicity</b>          | No information available. |
| <b>Reproductive toxicity</b>    | No information available. |
| <b>STOT - single exposure</b>   | No information available. |
| <b>STOT - repeated exposure</b> | No information available. |
| <b>Aspiration hazard</b>        | No information available. |
| <b>Other adverse effects</b>    | No information available. |
| <b>Interactive effects</b>      | No information available. |

## 12. Ecological information

|                                      |   |
|--------------------------------------|---|
| <b>Ecotoxicity</b>                   | Aquatic toxicity is unlikely due to low solubility. |
| <b>Persistence and degradability</b> | No information available.                           |
| <b>Bioaccumulation</b>               | There is no data for this product.                  |
| <b>Mobility</b>                      | No information available.                           |
| <b>Other adverse effects</b>         | No information available.                           |

## 13. Disposal considerations

### Disposal methods

|  |   |
|--|---|
| <b>Waste from residues/unused products</b> | Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. |
| <b>Contaminated packaging</b>              | Do not reuse empty containers.  |

## 14. Transport information

|                          |               |
|--------------------------|---------------|
| <b><u>DOT</u></b>        | Not regulated |
| <b><u>TDG</u></b>        | Not regulated |
| <b><u>MEX</u></b>        | Not regulated |
| <b><u>ICAO (air)</u></b> | Not regulated |

IATA Not regulated

IMDG Not regulated

## 15. Regulatory information

### International Regulations

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

### International Inventories

**TSCA** Complies.

**DSL/NDSL** Not Listed.

**EINECS/ELINCS** Complies.

**ENCS** Complies.

**IECSC** Not Listed.

**KECI** Complies.

**PICCS** Not Listed.

**AIIC** Complies.

**NZIoC** Contact supplier for inventory compliance status.

**TCSI** Contact supplier for inventory compliance status.

#### **Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing Chemicals Inventory

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**TCSI** - Taiwan Chemical Substance Inventory

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

#### **CAA (Clean Air Act)**

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated under applicable state right-to-know regulations

| Chemical name   | New Jersey | Massachusetts | Pennsylvania |
|---|------------|---------------|--------------|
| Spinel (Mg(AlO <sub>2</sub> ) <sub>2</sub> )<br>1302-67-6 | -          | -             | Present      |
| Aluminum oxide<br>1344-28-1                               | X          | X             | X            |

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. Other information**

|             |                         |                       |                           |                              |
|-------------|-------------------------|-----------------------|---------------------------|------------------------------|
| <b>NFPA</b> | <b>Health hazards</b> 0 | <b>Flammability</b> 0 | <b>Instability</b> 0      | <b>Special hazards</b> -     |
| <b>HMIS</b> | <b>Health hazards</b> 0 | <b>Flammability</b> 0 | <b>Physical hazards</b> 0 | <b>Personal protection</b> - |

**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend**

|         |   |
|---------|---|
| ACGIH   | American Conference of Governmental Industrial Hygienists                                       |
| ADN     | Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe) |
| ADR     | Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)             |
| AiIC    | Australian Inventory of Industrial Chemicals  |
| ATE     | Acute Toxicity Estimate   |
| ASTM    | American Society for the Testing of Materials   |
| bar     | Biological Reference Values for Chemical Compounds in the Work Area                             |
| BAT     | Biological tolerance values for occupational exposure   |
| BEL     | Biological exposure limits  |
| bw      | Body weight   |
| Ceiling | Maximum limit value   |
| CMR     | Carcinogen, Mutagen or Reproductive Toxicant  |
| DOT     | Department of Transportation (United States)  |
| DSL     | Domestic Substances List (Canada)   |
| EmS     | Emergency Schedule  |
| ENCS    | Existing and New Chemical Substances (Japan)  |
| EPA     | Environmental Protection Agency   |
| GHS     | Globally Harmonized System  |
| HMIS    | Hazardous Materials Identification System   |
| IARC    | International Agency for Research on Cancer   |
| IATA    | International Air Transport Association   |

|         |   |
|---------|---|
| IBC     | International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk |
| ICAO    | International Civil Aviation Organization   |
| IECSC   | Inventory of Existing Chemical Substances in China  |
| IMDG    | International Maritime Dangerous Goods  |
| IMO     | International Maritime Organization   |
| ISO     | International Organization for Standardization  |
| KECI    | Korean Existing Chemicals Inventory   |
| LC50    | Lethal Concentration to 50% of a test population  |
| LD50    | Lethal Dose to 50% of a test population (Median Lethal Dose)  |
| MARPOL  | International Convention for the Prevention of Pollution from Ships                                 |
| NFPA    | National Fire Protection Association  |
| NIOSH   | National Institute for Occupational Safety and Health   |
| n.o.s.  | Not Otherwise Specified   |
| NOAEC   | No Observed Adverse Effect Concentration  |
| NOAEL   | No Observed Adverse Effect Level  |
| NOELR   | No Observable Effect Loading Rate   |
| NTP     | National Toxicology Program (United States)   |
| NZIoC   | New Zealand Inventory of Chemicals  |
| OECD    | Organization for Economic Cooperation and Development   |
| OEL     | Occupational exposure limits  |
| OSHA    | Occupational Safety and Health Administration of the US Department of Labor                         |
| PBT     | Persistent, Bioaccumulative and Toxic substance   |
| PICCS   | Philippines Inventory of Chemicals and Chemical Substances  |
| PMT     | Persistent, Mobile and Toxic  |
| PPE     | Personal protective equipment   |
| QSAR    | Quantitative Structure Activity Relationship  |
| RID     | Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)                 |
| SADT    | Self-Accelerating Decomposition Temperature   |
| SAR     | Structure-activity relationship   |
| SARA    | Superfund Amendments and Reauthorization Act  |
| SDS     | Safety Data Sheet   |
| SL      | Surface Limit   |
| STEL    | Short Term Exposure Limit   |
| STOT RE | Specific target organ toxicity - Repeated exposure  |
| STOT SE | Specific target organ toxicity - Single exposure  |
| TCSI    | Taiwan Chemical Substance Inventory   |
| TDG     | Transport of Dangerous Goods (Canada)   |
| TSCA    | Toxic Substances Control Act (United States)  |
| TWA     | Time-Weighted Average   |
| UN      | United Nations  |
| VOC     | Volatile organic compounds  |
| vPvB    | Very Persistent and Very Bioaccumulative  |
| vPvM    | Very Persistent and Very Mobile   |
| Sen+    | Sensitizer  |
| Sk*     | Skin designation  |
| **      | Hazard Designation  |

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 Environmental Protection Agency  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)

National Institute of Technology and Evaluation (NITE)  
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
U.S. National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**