CoorsTek

# SAFETY DATA SHEET

## SECTION 1. IDENTIFICATION

**GHS product identifier** Aluminum Nitride Ceramic

**Other means of identification** Aluminum Nitride, Sintered (fired) Aluminum Nitride

**Product Type** Solid.

**Supplier's details**

CoorsTek, Inc.
14143 Denver West Parkway, Suite 400
Golden, CO 80401
Phone: +1 303 271 7000
Fax: +1 303 271 7009
coorstek.com

**Emergency telephone number** (with hours of operation)

+1 303 271 7000
8am-5pm MDT (M-F)

## SECTION 2. HAZARDS IDENTIFICATION

**OSHA/HCS status** While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** Not classified

### GHS LABEL ELEMENTS

**Signal word** No signal word

**Hazard statements** No known significant effects or critical hazards

### PRECAUTIONARY STATEMENTS

**Prevention** Not applicable

**Response** Not applicable

**Storage** Not applicable

**Disposal** Not applicable

**Hazards not otherwise classified** None known


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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/mixture** Mixture

**Other means of identification** Aluminum Nitride, Sintered (fired) Aluminum Nitride

### CAS NUMBER/OTHER IDENTIFIERS

**CAS number** Not applicable

**Product code** Not available

| Ingredient name | % | CAS Number |
|---|---|---|
| Aluminum nitride | 75 - 90 | 24304-00-5 |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4. FIRST AID MEASURES

### DESCRIPTION OF NECESSARY FIRST AID MEASURES

**Eye contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact** Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.

**Ingestion** Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.


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## SECTION 4. FIRST AID MEASURES CONTINUED

### MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

#### Potential acute health effects

**Eye contact** No known significant effects or critical hazards.

**Inhalation** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact** No known significant effects or critical hazards

**Ingestion** No known significant effects or critical hazards

#### Over-exposure signs/symptoms

**Eye contact** No known significant effects or critical hazards

**Inhalation** No known significant effects or critical hazards

**Skin contact** No known significant effects or critical hazards

**Ingestion** No known significant effects or critical hazards

### INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY

**Notes to physician** In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** No specific treatment

**Protection of first-aiders** No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)


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## SECTION 5. FIRE-FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Suitable extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**

None known. Product may generate small amounts of ammonia when in water.

**Specific hazards arising from the chemical**

No specific fire or explosion hazard

**Hazardous thermal decomposition products**

Decomposition products may include the following materials:
- Nitrogen Oxides
- Metal oxide/oxides

**Special protective actions for fire-fighters**

No special protection is required

**Special protective equipment for fire-fighters**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT & EMERGENCY PROCEDURES

**For non-emergency personnel**

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.

**For emergency responders**

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in “For non-emergency personnel”.

**Environmental precautions**

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### METHODS & MATERIALS FOR CONTAINMENT AND CLEANING UP

**Large spill**

Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



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## SECTION 7. HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING

**Protective measures** Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** Store in accordance with local regulations. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### CONTROL PARAMETERS

**Occupational exposure limits** None

**Appropriate engineering controls** Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### INDIVIDUAL PROTECTION MEASURES

**Hygiene measures** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side shields.


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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION CONTINUED

### SKIN PROTECTION

**Hand protection** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

| | |
|---|---|
| **Physical state** | Solid |
| **Color** | White to pale yellow |
| **Odor** | Ammonia [Slight] |
| **Odor threshold** | Not applicable |
| **pH** | Not applicable |
| **Melting point** | >2200° C (>3992° F) |
| **Boiling point** | >2500° C (>4532° F) |
| **Flash point** | Not applicable |
| **Evaporation rate** | Not applicable |
| **Flammability (solid, gas)** | Not available |
| **Lower and upper explosive (flammable) limits** | Not applicable |


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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES CONTINUED

| | |
|---|---|
| **Vapor pressure** | Not applicable |
| **Vapor density** | Not applicable |
| **Relative density** | Not available |
| **Solubility** | Very slightly soluble in the following materials: cold water and hot water |
| **Partition coefficient: n- octanol/water** | Not applicable |
| **Auto-ignition temperature** | Not flammable |
| **Decomposition temperature** | Not available |
| **Viscosity** | Not applicable |

## SECTION 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | No specific test data related to reactivity available for this product or its ingredients. |
| **Chemical stability** | The product is stable. |
| **Possibility of hazardous reactions** | Under normal conditions of storage and use, hazardous reactions will not occur. |
| **Conditions to avoid** | No specific data |
| **Incompatible materials** | Reactive or incompatible with the following materials: moisture<br>Ammonia gas may be formed when the material comes into contact with water. |
| **Hazardous decomposition products** | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |



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## SECTION 11. TOXICOLOGICAL INFORMATION

**Acute toxicity** There is no data available.

**Irritation/Corrosion** There is no data available.

**Sensitization** There is no data available.

**Mutagenicity** There is no data available.

**Carcinogenicity** There is no data available.

**Reproductive toxicity** There is no data available.

**Teratogenicity** There is no data available.

**Specific target organ toxicity (single exposure)**

| Name | Category | Route of exposure | Target organs |
|---|---|---|---|
| Aluminum nitride | Category 3 | Not applicable | Respiratory tract irritation |

**Specific target organ toxicity (repeated exposure)** There is no data available

**Aspiration hazard** There is no data available

**Information on the likely routes of exposure** There is no data available

Routes of entry anticipated: Oral, Dermal, Inhalation

**POTENTIAL ACUTE HEALTH EFFECTS**

**Eye contact** No known significant effects or critical hazards

**Inhalation** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact** No known significant effects or critical hazards

**Ingestion** No known significant effects or critical hazards

**SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS**

**Eye contact** No known significant effects or critical hazards

**Inhalation** No known significant effects or critical hazards

**Skin contact** No known significant effects or critical hazards


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## SECTION 11. TOXICOLOGICAL INFORMATION CONTINUED

**Ingestion** No known significant effects or critical hazards

### DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE

### SHORT TERM EXPOSURE

**Potential immediate effects** No known significant effects or critical hazards

**Potential delayed effects** No known significant effects or critical hazards

### LONG TERM EXPOSURE

**Potential immediate effects** No known significant effects or critical hazards

**Potential delayed effects** No known significant effects or critical hazards

### POTENTIAL CHRONIC HEALTH EFFECTS

**General** No known significant effects or critical hazards

**Carcinogenicity** No known significant effects or critical hazards

**Mutagenicity** No known significant effects or critical hazards

**Teratogenicity** No known significant effects or critical hazards

**Developmental effects** No known significant effects or critical hazards

**Fertility effects** No known significant effects or critical hazards

### NUMERICAL MEASURES OF TOXICITY

**Acute toxicity estimates** No data available


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## SECTION 12. ECOLOGICAL INFORMATION

**Toxicity** There is no data available

**Persistence and degradability** There is no data available

**Bioaccumulative potential** There is no data available

**MOBILITY IN SOIL**

**Soil/water partition coefficient ($K_{OC}$)** No data available

**Other adverse effects** No known significant effects or critical hazards

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods** The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14. TRANSPORT INFORMATION

| | DOT | IMDG | IATA |
|---|---|---|---|
| UN Number | Not regulated | Not regulated | Not regulated |
| UN proper shipping name | - | - | - |
| Transport hazard class(es) | - | - | - |
| Packing group | - | - | - |
| Environmental hazards | No | No | No |
| Additional information | - | - | - |

**AERG: NOT APPLICABLE**

**Special precautions for user** **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.


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## SECTION 15. REGULATORY INFORMATION

**U.S. Federal regulations**
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
**United States inventory (TSCA 8b):** All components are listed or exempted.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)**
Not listed

**Clean Air Act Section 602**
**Class I Substances** Not listed
**Class II Substances** Not listed

**DEA List I Chemicals (Precursor Chemicals)** Not listed

**DEA List II Chemicals (Essential Chemicals)** Not listed

**SARA 302/304** Composition/information on ingredients: no products were found

**SARA 304 RQ** Not applicable

**SARA 311/312** Not applicable

**Composition/information on ingredients**

| Name | % | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|---|---|---|---|---|---|---|
| Aluminium Nitride | >90 | No | No | No | Yes | No |

**STATE REGULATIONS**

**Massachusetts** None of the components are listed.

**New York** None of the components are listed.

**New Jersey** None of the components are listed.

**Pennsylvania** None of the components are listed.

**California Prop. 65** No products were found


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## SECTION 16. OTHER INFORMATION

**Procedure used to derive the classification**

| Classification | Justification |
|---|---|
| Not classified | - |

**HISTORY**

**Date of issue mm/dd/yyyy** 05/30/2016

**Date of previous issume** 03/15/2013

**Version** 2

**Prepared by** KMK Regulatory Services Inc.

**Notice to reader**

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