

SAFETY DATA SHEET

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifier: Aluminum Nitride (AlN) Ceramic

CAS Number: 24304-00-5

Relevant identified uses of the substance: Scientific research and development

Supplier details:

China Ceramic Manufacturer

No. 2-1, Langwei Industrial Zone, Liulian, Pingshan, Shenzhen, China.

Tel: +86-755-28675323

Emergency telephone number:

+86-755-28675323

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

The substance is not classified according to the Globally Harmonized System (GHS).

Hazards not otherwise classified No data available

GHS label elements N/A

Hazard pictograms N/A

Signal word N/A

Hazard statements N/A

WHMIS classification Not controlled

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

1

0

0

Health (acute effects) = 1

Flammability = 0

Physical Hazard = 0
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
24304-00-5 Aluminum nitride
Identification number(s):
EC number: 246-140-8

SECTION 4. FIRST AID MEASURES

Description of first aid measures

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm. Seek immediate medical advice.H

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.eg

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.M

If swallowed:

Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed:

No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents In case of fire, use sand, carbon dioxide or powdered extinguishing agent.

Never use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Nitrogen oxides (NOx)

Metal oxide fume

Ammonia

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions: Do not allow product to enter drains, sewage systems, or other water courses.

Methods and materials for containment and cleanup: Pick up mechanically.

Prevention of secondary hazards: No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling

Precautions for Safe Handling:

Handle under dry, protective (inert) gas.

Keep container tightly sealed.

Store in a cool, dry place in tightly closed containers.

Information About Protection Against Explosions and Fires:

No data available.

Storage

Conditions for Safe Storage, Including Any Incompatibilities:

General Requirements for Storage Rooms and Containers:

No special structural requirements.

Information About Storage in a Common Storage Facility:

Store away from water and moisture.

Do not store together with acids.

Keep away from strong bases.

Store separately from oxidizing agents.

Further Information About Storage Conditions:

Store under dry inert gas.

This product is moisture sensitive.

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Protect from humidity and water.

Specific End Use(s):

No data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

24304-00-5 Aluminum nitride (100.0%)

REL (USA) Long-term value: 2 mg/m³

as Al

TLV (USA) Long-term value: 1* mg/m³

as Al;*as respirable fraction

EL (Canada) Long-term value: 2 mg/m³

as Al

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:

Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if airpurifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves Nitrile rubber, NBR

Penetration time of glove material (in minutes) No data available

Eye protection: Safety glasses

Body protection: Protective work clothing.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Appearance Form: Solid in various forms Color: White to pale yellow

Odor Odorless

Odor threshold No data available

pH N/A

Melting point/Melting range $>2200\text{ }^{\circ}\text{C}$ ($>3992\text{ }^{\circ}\text{F}$)

Boiling point/Boiling range No data available

Sublimation temperature/start No data available

Flammability (solid, gas) No data available

Ignition temperature No data available

Decomposition temperature ca $977\text{ }^{\circ}\text{C}$ (ca $1791\text{ }^{\circ}\text{F}$)

Autoignition No data available

Danger of explosion No data available

Explosion limits Lower: No data available Upper: No data available

Vapor pressure N/A

Density at $20\text{ }^{\circ}\text{C}$ ($68\text{ }^{\circ}\text{F}$) 3.26 g/cm^3 (27.205 lbs/gal)

Relative density No data available

Vapor density N/A

Evaporation rate N/A

Solubility in/Miscibility with water Hydrolyzes slowly

Partition coefficient (n-octanol/water) No data available

Viscosity No data available

Dynamic: N/A
Kinematic: N/A
Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions Reacts with strong oxidizing agents
Conditions to avoid No data available
Incompatible materials:
Acids
Water/moisture
Bases
Oxidizing agents
Hazardous decomposition products:
Nitrogen oxides
Ammonia
Metal oxide fume

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance
LD/LC50 values relevant for classification No data
Skin irritation or corrosion May cause irritation
Eye irritation or corrosion May cause irritation
Sensitization No sensitizing effects known
Germ cell mutagenicity No effects known
Carcinogenicity ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals
Reproductive toxicity No effects known
Specific target organ system toxicity – repeated exposure No effects known
Specific target organ system toxicity – single exposure No effects known
Aspiration hazard No effects known
Subacute to chronic toxicity No effects known
Additional toxicological information To the best of our knowledge the acute and chronic toxicity of this substance is not fully known

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity: No data available
Persistence and degradability No data available
Bioaccumulative potential No data available
Mobility in soil No data available

Additional ecological information:

Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number

DOT, ADN, IMDG, IATA N/A

UN proper shipping name

DOT, ADN, IMDG, IATA N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class N/A

Packing group

DOT, IMDG, IATA N/A

Environmental hazards: N/A

Special precautions for user N/A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT): No

UN "Model Regulation": -

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements N/A

Hazard pictograms N/A

Signal word N/A

Hazard statements N/A

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Heeger Materials Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.