



# Safety Data Sheet

SkySpring Nanomaterials, Inc.

www.ssnano.com

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## 1 Identification of substance:

### Product details:

- Product name: Aluminum powder
- Product numbers: 0226XH
- Manufacturer/Supplier:  
SkySpring Nanomaterials, Inc.  
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## 2 Hazards identification

### 2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 1), H228

Chemicals which, in contact with water, emit flammable gases (Category 2), H261

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word      Danger

Hazard statement (s)

H250              Catches fire spontaneously if exposed to air

H261              In contact with water releases flammable gases.

Precautionary statement(s)

P210              Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P222              Do not allow contact with air.

P223              Do not allow contact with water.

P231 + P232      Handle under inert gas. Protect from moisture.

P280              Wear protective gloves/ eye protection/ face protection.

P335 + P334      Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.

P370 + P378      In case of fire: Use dry sand, dry chemical or alcohol resistant foam to extinguish

P402+P404      Store in dry place and close container

P501              Dispose of contents/ container to an approved waste disposal plant

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS Combustible dust

## 3 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Aluminum (CAS# 7429-90-5), 100%  
Identification number(s):  
EINECS Number: 231-072-3  
EU Number: 013-001-00-6

#### 4 First aid measures

- \* After inhalation  
Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.
- \* After skin contact  
Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.
- \* After eye contact  
Rinse opened eye for several minutes under running water. Then consult a doctor.
- \* After swallowing Seek immediate medical advice.

#### 5 Fire fighting measures

- \* Suitable extinguishing agents  
Special powder for metal fires. Do not use water.
- \* For safety reasons unsuitable extinguishing agents Water
- \* Protective equipment:  
Wear self-contained respirator.  
Wear fully protective impervious suit.

#### 6 Accidental release measures

- \* Person-related safety precautions:  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Keep away from ignition sources
- \* Measures for environmental protection:  
Do not allow material to be released to the environment without proper governmental permits.
- \* Measures for cleaning/collecting:  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents  
Keep away from ignition sources.
- \* Additional information:  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

#### 7 Handling and storage

- \* Handling
- \* Information for safe handling:  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

- \* Information about protection against explosions and fires:  
Keep ignition sources away.  
Substance/product is self ignitable.
  
- \* Storage
  
- \* Requirements to be met by storerooms and receptacles:  
No special requirements.
  
- \* Information about storage in one common storage facility:  
Store away from oxidizing agents.  
Store away from water/moisture.  
Do not store together with acids.
  
- \* Further information about storage conditions:  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.

## 8 Exposure controls and 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.

Components with limit values that require monitoring at the workplace:

Aluminum powder	
	mg/m <sup>3</sup>
ACGIH TLV	10
Belgium TWA	10
Denmark TWA	10
Finland TWA	10
France TWA	10
Germany MAK	6
Hungary TWA	2
Ireland TWA	10
Netherlands TWA	10
Sweden TWA	5
Switzerland TWA	6
United Kingdom TWA	10
USA PEL (respirable)	5

- \* Additional information: No data
  
- \* Personal protective equipment
  
- \* General protective and hygienic measures  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.

- \* Breathing equipment:  
Use suitable respirator when high concentrations are present.
- \* Protection of hands: Impervious gloves
- \* Eye protection:  
Safety glasses  
Full face protection
- \* Body protection: Protective work clothing.

## 9 Physical and chemical properties:

- \* General Information
- \* Form: Powder
- \* Color: Black
- \* Odor: Odorless
- \* Value/Range Unit Method
- \* Change in condition
- \* Melting point/Melting range: 660 ° C
- \* Boiling point/Boiling range: 2467 ° C
- \* Sublimation temperature / start: Not determined
- \* Flash point: Not applicable
- \* Flammability (solid, gaseous)  
Contact with water liberates extremely flammable gases.
- \* Ignition temperature: 400 ° C
- \* Decomposition temperature: Not determined
- \* Auto igniting: Spontaneously flammable in air.
- \* Explosion limits:
- \* Lower: Not determined
- \* Upper: Not determined
- \* Vapor pressure: Not determined
- \* Density: at 20 ° C 2.699 g/cm<sup>3</sup>
- \* Solubility in / Miscibility with
- \* Water:  
Contact with water releases flammable gases  
Not determined

## 10 Stability and reactivity

- \* Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.
- \* Materials to be avoided:
- \* Dangerous reactions

Contact with water releases flammable gases  
Spontaneously flammable in air.

\* Dangerous products of decomposition: Hydrogen

## 11 Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity

No data available

Inhalation

:

No data available

Dermal

:

No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Specific target organ toxicity

- No data available

single exposure

No data available

Specific target organ toxicity

-

repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS

:

BD0330000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### 12 Ecological information:

- \* General notes:  
Do not allow material to be released to the environment without proper governmental permits.

#### 13 Disposal considerations

- \* Product:
- \* Recommendation  
Consult state, local or national regulations to ensure proper disposal.
- \* Uncleaned packagings:
- \* Recommendation:  
Disposal must be made according to official regulations.

#### 14 Transport information

- \* DOT regulations:
- \* Hazard class: 4.3
- \* Identification number: UN1396
- \* Packing group: II
- \* Poison inhalation hazard:  
No
- \* Proper shipping name (technical name):  
Aluminum powder, uncoated
- \* Land transport ADR/RID (cross-border)
- \* ADR/RID class: 4.3 Substances which, in contact with water, emit flammable gases
- \* Item: 13b
- \* Danger code (Kemler): 423
- \* UN-Number: 1396
- \* Description of goods: Aluminium powder, uncoated
- \* Maritime transport IMDG:
- \* IMDG Class: 4.3
- \* UN Number: 1396

- \* EMS Number: 4.2-02
- \* Proper shipping name: Aluminium powder, uncoated
- \* Air transport ICAO-TI and IATA-DGR:
- \* ICAO/IATA Class: 4.3
- \* UN/ID Number: 1396
- \* Proper shipping name: Aluminum powder, uncoated

#### 15 Regulations

- \* Product related hazard informations:
- \* Hazard symbols: F Highly flammable
- \* Risk phrases:
  - 15 Contact with water liberates extremely flammable gases.
  - 17 Spontaneously flammable in air.
- \* Safety phrases:
  - 7/8 Keep container tightly closed and dry.
  - 43 In case of fire, use metallic extinguishing powder. Never use water.
- \* National regulations  
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.
- \* Information about limitation of use:  
For use only by technically qualified individuals.

#### 16 Other information:

- \*  
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.