1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product name: Aluminum (Al) Powder
Aluminum (Al) CAS#: 7429-90-5

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Research

1.3 Details of the supplier of the safety data sheet
Company: US Research Nanomaterials, Inc.
3302 Twig Leaf Lane
Houston, TX 77084
USA
Telephone: +1 832-460-3661
Fax: +1 281-492-8628

1.4 Emergency telephone number
Emergency Phone # : (832) 359-7887

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
Substances/mixtures which, in contact with water, emit flammable gases.
Catches fire spontaneously if exposed to air

Precautionary statement(s)
Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Do not allow contact with air, handle under inert gas. Protect from moisture.
P233: Keep container tightly closed.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240: Ground/Bond container and receiving equipment.
P241: Use explosion-proof-electrical/ventilating/lighting/…/equipment
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P370+P378: In case of fire: Use ... for extinction.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Aluminum (Al) CAS#: 7429-90-5

4. FIRST AID MEASURES

4.1 Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use CO2, dry chemical, or foam for extinction.

5.2 Special hazards arising from the substance or mixture
Flammable. Risk of ignition. Dust can form an explosive mixture in air. Keep product and empty container away from heat and sources of ignition.
5.3 Advice for firefighters
Wear self contained breathing apparatus for firefighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions
Avoid release to the environment. See Section 12 for additional ecological information.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Keep away from any possible contact with water, because of violent reaction and possible flash fire. Do not allow contact with air, handle under inert gas. Protect from moisture. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
ACGIH TLV: TWA: 1 mg/m³
OSHA PEL: (Vacated) TWA: 15 mg/m³, (Vacated) TWA: 5 mg/m³, TWA: 15 mg/m³, TWA: 5 mg/m³
NIOSH IDLH: TWA: 10 mg/m³, TWA: 5 mg/m³
Quebec: TWA: 10 mg/m³, TWA: 5 mg/m³
Mexico OEL (TWA): TWA: 10 mg/m³, TWA: 5 mg/m³
Ontario TWAEV: TWA: 1 mg/m³

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

8.2 Exposure controls
### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

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<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
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<tr>
<td>Odor</td>
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<td>Odor Threshold</td>
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<td>Evaporation rate</td>
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<tr>
<td>OSHA Flammability Class</td>
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<td>Upper/lower flammability or explosive limits</td>
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<td>Viscosity</td>
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<td>Explosive properties</td>
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<tr>
<td>Molecular Weight</td>
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</tbody>
</table>
### 9.2 Other safety information
no data available

### 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity
Water reactive.

#### 10.2 Chemical stability

#### 10.3 Possibility of hazardous reactions
None under normal processing.

#### 10.4 Conditions to avoid
Avoid dust formation. Incompatible products. Exposure to air. Exposure to moist air or water. Excess heat.

#### 10.5 Incompatible materials
Water, Strong acids, Strong bases, Alcohols, Halogens, Halogenated compounds, Carbon dioxide (CO2)

#### 10.6 Hazardous decomposition products
Hydrogen, Fumes of aluminum or aluminum oxide
In the event of fire: see section 5

### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

**Acute toxicity**
No information available

**Skin corrosion/irritation**
No information available

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

**Respiratory or skin sensitisation**
No information available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**
Not listed

**Reproductive toxicity**
no data available

**Specific target organ toxicity - single exposure**
no data available

**Specific target organ toxicity - repeated exposure**
no data available

**Aspiration hazard**
Product may be an aspiration hazard

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

### 12. ECOLOGICAL INFORMATION
12.1 Ecotoxicity
No information available

12.2 Persistence and degradability
No information available

12.3 Bioaccumulative potential
No information available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
Do not allow product to enter surface waters, wastewater or soil.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

14. TRANSPORT INFORMATION

US DOT Information
Shipping Name: ALUMINUM POWDER, UNCOATED.
Hazard Class: 4.3
UN/NA #: UN1396
Packing Group: II

IMDG Information
Shipping Name: ALUMINUM POWDER, UNCOATED.
Hazard Class: 4.3
UN/NA #: UN1396
Packing Group: II

IATA Information
Shipping Name: ALUMINUM POWDER, UNCOATED.
Hazard Class: 4.3
UN/NA #: UN1396
Packing Group: II

15. REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H260: In contact with water releases flammable gases which may ignite spontaneously.
H261: In contact with water releases flammable gases.

HMIS Rating
Health hazard: 1
Chronic Health Hazard:
Flammability: 3
Physical Hazard 0

NFPA Rating
Health hazard: 1
Fire Hazard: 3
Reactivity Hazard: 0

Further information
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.
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment 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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.