

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 1 of 8

Aluminum Metal, Fine Powder

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Aluminum Metal, Fine Powder

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25144

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Flammable

Flammable solids, category 1

Substances and mixtures, which in contact with water, emit flammable gases, category 2

Flammable Solid 1

Water Reactive Flammable Gas 2

Signal word :Danger

Hazard statements:

Flammable solid

In contact with water releases flammable gas

Precautionary statements:

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection

Handle under inert gas

Protect from moisture

In case of fire: Use agents recommended in section 5 for extinction

Store in a dry place. Store in a closed container

Dispose of contents and container as instructed in Section 13

Powder may exhibit Serious Eye Damage 1 hazard:

8%-50%

Powder may exhibit Eye Irritant 1 hazard:

5% - 8%

Solid (non powder form):

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 2 of 8

Aluminum Metal, Fine Powder

Not classified for physical or health hazards under GHS.

370/378: In case of fire: :

smother with dry powder for extinction. (Pressure from this media may cause severe dusting)

P501: Dispose of contents/container :

as directed in Section 13.

Combustible Dust Hazard: :

Keep away from all ignition sources including heat, sparks and flame. Keep container closed and grounded. Prevent dust accumulations to minimize explosion hazard.

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

| | |
|---------------------|---|
| Health | 1 |
| Flammability | 3 |
| Physical Hazard | 1 |
| Personal Protection | X |

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:

| | | |
|---------------------------|----------|-------|
| CAS 7429-90-5 | Aluminum | 100 % |
| Percentages are by weight | | |

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. Give artificial respiration, if necessary. (Use protective barrier device if possible.). If breathing difficult, give oxygen.

After skin contact: Seek medical attention if irritation persists or if concerned. Rinse skin for 15 minutes.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek immediate medical attention.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention immediately.

Most important symptoms and effects, both acute and delayed:

Nausea, Headache, Shortness of breath. May cause respiratory irritation. May cause skin irritation. May cause eye

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 3 of 8

Aluminum Metal, Fine Powder

irritation (mechanical). Ingestion may cause gastrointestinal irritation (large doses). Redness, tearing;

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: If in laboratory setting, follow laboratory fire suppression procedures. Smother with suitable dry powder for extinction. (Pressure from this media may cause severe dusting). Smother with sand, dry ground limestone, or use approved Class D extinguishers.

For safety reasons unsuitable extinguishing agents: Do not use water. Do not use halogenated extinguishing media. Do not use carbon dioxide.

Special hazards arising from the substance or mixture:

Combustion products may include metallic oxides or other toxic vapors. Combustible Solid, finely divided dust is easily ignited; may cause explosions.

Advice for firefighters:

Protective equipment: Use NIOSH-approved respiratory protection/breathing apparatus. Wear fire/ flame resistant/retardant clothing.

Additional information (precautions): Use spark-proof tools and explosion-proof equipment.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Do not expose spilled material to water. Avoid contact with eyes, skin, and clothing. Avoid generating dusty conditions. Use only spark-proof tools. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Do not expose spill to water. Obey local regulations.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Follow good hygiene procedures when handling chemical materials. Avoid ingestion and inhalation. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Wash thoroughly after handling. Remove and wash contaminated clothing. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid generation of dust or fine particulate. Dust may form flammable or explosive mixture with air, especially when damp. Do not allow water to get into the container because of violent reaction risk. Keep from contact with moist air and steam. Avoid contact with the eyes and skin.

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 4 of 8

Aluminum Metal, Fine Powder

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from alkalis. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Keep away from water. Store away from halogenated compounds. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly sealed. Keep away from combustibles. Keep away from acids.

SECTION 8 : Exposure controls/personal protection



Control Parameters:

7429-90-5, Aluminum (as Al) (pyrophoric powder), ACGIH TLV TWA 5 mg/m³
7429-90-5, Aluminum (as Al) (metal dust), ACGIH TLV TWA: 10 mg/m³
7429-90-5, Aluminum (as Al) (respirable), OSHA PEL TWA: 5 mg/m³
7429-90-5, Aluminum (as Al) (total), OSHA PEL TWA: 15 mg/m³
7429-90-5, Aluminum (as Al) (respirable), NIOSH REL: TWA 5 mg/m³
7429-90-5, Aluminum (as Al) (total), NIOSH REL: TWA 10 mg/m³

Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Eye protection:

Safety glasses with side shields or goggles.

General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9 : Physical and chemical properties

| | | | |
|---|--------------------|--|--------------------------------|
| Appearance (physical state,color): | Silver-gray powder | Explosion limit lower: Explosion limit upper: | Non Explosive Non Explosive |
| Odor: | Odorless | Vapor pressure: | Not Applicable |
| Odor threshold: | Not Applicable | Vapor density: | Not Applicable |
| pH-value: | Not Applicable | Relative density: | No Information |

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 5 of 8

Aluminum Metal, Fine Powder

| | | | |
|--|----------------|---|---|
| Melting/Freezing point: | 660°C | Solubilities: | Insoluble in water. |
| Boiling point/Boiling range: | 2467°C | Partition coefficient (n-octanol/water): | Not Applicable |
| Flash point (closed cup): | Not Applicable | Auto/Self-ignition temperature: | 760°C |
| Evaporation rate: | Not Applicable | Decomposition temperature: | Not Available |
| Flammability (solid,gaseous): | Not Available | Viscosity: | a. Kinematic:Not Applicable b. Dynamic: Not Applicable |
| Density: No Information Molecular Weight: 26.98 | | | |

SECTION 10 : Stability and reactivity

Reactivity:Corrodes in contact with acids & other metals. Ignition may occur if powders are mixed with halogens, carbon disulfide, or methyl chloride.Reacts violently and/or explosively with water, steam or moisture. May ignite or explode on contact with moist air. Water reactive.Material will react with water and may release flammable and/or toxic gas.

Chemical stability:No decomposition if used and stored according to specifications.Polished aluminum powders which have been treated with oils or wax for printing or paint purposes are not generally dangerous.Stable under normal temperatures and pressures.

Possible hazardous reactions:Combustible Solid, finely divided dust is easily ignited; may cause explosions.Dust can be an explosion hazard when exposed to heat or flame. May ignite or explode on contact with moist air. Aluminum powder may evolve hydrogen gas in contact with water. Bulk dust when damp with water may heat spontaneously. Hazard greater as mesh size increases (particle size decreases).

Conditions to avoid:Store away from oxidizing agents, strong acids or bases.Store away from combustible materials. Avoid exposure to air or water.

Incompatible materials:Strong oxidizers & acids.Halogenated hydrocarbons.

Hazardous decomposition products:Metallic oxides.

SECTION 11 : Toxicological information

| | |
|---|----------------------------|
| Acute Toxicity: | |
| Oral: | LD50 rat >15900 mg/kg bw |
| Chronic Toxicity: No additional information. | |
| Corrosion Irritation: | |
| Ocular: | May cause eye irritation. |
| Sensitization: | No additional information. |
| Single Target Organ (STOT): | No additional information. |
| Numerical Measures: | No additional information. |
| Carcinogenicity: | No additional information. |
| Mutagenicity: | No additional information. |
| Reproductive Toxicity: | No additional information. |

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 6 of 8

Aluminum Metal, Fine Powder

SECTION 12 : Ecological information

Ecotoxicity

LC50 Fish: Ctenopharyngodon idella (Grass carp, white amur) [AI 7429-90-5]: 260 ug/L/96 hr

LC50 Crustacea: Daphnia magna (Water flea) [AI 7429-90-5]: 2.6 mg/L/24 hr

LC50 Fish: Oncorhynchus mykiss (Rainbow trout) [AI 7429-90-5]: 120 ug/L/96 hr; static

Persistence and degradability:

Bioaccumulative potential: Birds and mammals are most likely exposed through dietary ingestion of soil or Al-contaminated foods.

Mobility in soil:

Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

SECTION 14 : Transport information

UN-Number

1396

UN proper shipping name

Aluminum powder, uncoated

Transport hazard class(es)



Class:

4.3 Substances which in contact with water emit flammable gases

Packing group:II

Environmental hazard:

Transport in bulk:

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Reactive, Acute, Fire

SARA Section 313 (Specific toxic chemical listings):

7429-90-5 Aluminum (fume or dust)

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 7 of 8

Aluminum Metal, Fine Powder

None of the ingredients is listed

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

7429-90-5 Aluminum, elemental

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.18.2014

Page 8 of 8

Aluminum Metal, Fine Powder

DNEL: Derived No-Effect Level (REACH)

Effective date : 11.18.2014

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