STANFORD ADVANCED MATERIALS

SAFETY DATA SHEET

Creation Date 25-Oct-2010 **Revision Date** 25-Apr-2019 **Revision Number** 2

1. Identification

Product Name **Aluminum powder**

CAS-No 7429-90-5
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Stanford Advanced Materials

23661 Birtcher Dr., Lake Forest, CA 92630 U.S.A.

sales@samaterials.com

(949) 407-8904

www.samaterials.com

Emergency Telephone Number
During normal business hours (Monday-Friday, 8am-7pm EST), call (949) 407-8904

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Substances/mixtures which, in contact with water, emit flammable gases	Category 2
Pyrophoric solids	Category 1
Combustible dust	Yes

Label Elements

Signal Word
Danger

Hazard Statements
May form combustible dust concentrations in air
In contact with water releases flammable gas
Catches fire spontaneously if exposed to air

Precautionary Statements
Prevention
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Do not allow contact with air
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from any possible contact with water, because of violent reaction and possible flash fire
Handle under inert gas. Protect from moisture
Skin
Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages
Fire
In case of fire: Use fire-fighting equipment on basis class D for extinction
Storage
Store under an inert atmosphere
Store in a dry place. Store in a closed container
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Aluminium	7429-90-5	>95

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Inhalation Move to fresh air. Get medical attention if symptoms occur. If not breathing, give artificial respiration.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms and effects No information available.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Dry sand; dry clay; Limestone powder; approved class D extinguishers.

Unsuitable Extinguishing Media DO NOT USE WATER, Carbon dioxide (CO2), Dry chemical, Do not use halogenated extinguishing agents or foam

Flash Point	No information available
Method -	No information available

Autoignition Temperature 400 °C / 752 °F

Explosion Limits

Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Water reactive. Contact with water liberates extremely flammable gases. Spontaneously flammable in air. Fine dust dispersed in air may ignite. Dust can form an explosive mixture in air. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Hydrogen Fumes of aluminum or aluminum oxide.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	3	1	W

6. Accidental release measures

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Avoid dust formation. Avoid contact with skin, eyes and clothing.

Environmental Precautions Avoid release to the environment.

Methods for Containment and Clean Up Remove all sources of ignition. Do not expose spill to water. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Handle under inert gas, protect from moisture. Wear personal protective equipment. Avoid dust formation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Do not allow contact with water.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area. Store under an inert atmosphere. Keep away from water.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Aluminium	TWA: 1 mg/m³	(Vacated) TWA: 15 mg/m³ (Vacated) TWA: 5 mg/m³ TWA: 15 mg/m³ TWA: 5 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 1 mg/m³ TWA: 5 mg/m³

Legend

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

Engineering Measures Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Grey
Odor	Odorless
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	660 °C / 1220 °F
Boiling Point/Range	2327 °C / 4220.6 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	2.7020
Solubility	insoluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	400 °C / 752 °F
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Al
Molecular Weight	26.98

10. Stability and reactivity

Reactive Hazard Yes

Stability Water reactive. Moisture sensitive. Air sensitive. Pyrophoric: Spontaneously flammable in air.

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

Incompatible Materials Water, Strong acids, Strong bases, Alcohols, Halogens, Halogenated compounds, Carbon dioxide (CO2)

Hazardous Decomposition Products Hydrogen, Fumes of aluminum or aluminum oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions Contact with water liberates extremely flammable gases.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Aluminium	7429-90-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

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Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1396
Proper Shipping Name ALUMINUM POWDER, UNCOATED
Hazard Class 4.3
Packing Group II

TDG

UN-No UN1396
Proper Shipping Name ALUMINUM POWDER, UNCOATED
Hazard Class 4.3
Packing Group II

IATA

UN-No UN1396
Proper Shipping Name ALUMINIUM POWDER, UNCOATED
Hazard Class 4.3
Packing Group II

IMDG/IMO

UN-No UN1396
Proper Shipping Name ALUMINIUM POWDER, UNCOATED
Hazard Class 4.3
Packing Group II

15. Regulatory information

United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Aluminium	7429-90-5	X	ACTIVE	-

Legend:
TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Aluminium	7429-90-5	X	-	231-072-3	X	-	X	X	KE-00881

U.S. Federal Regulations

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Aluminium	7429-90-5	>95	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Aluminium	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:
Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Aluminium	Theft STQs - 100lb (powder)

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By
Health, Safety and Environmental Department
Email: tech@alfa.com
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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS