

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/16/2006

Reviewed on 02/07/2006

1 Identification of substance:**Product details:****Product name:** Aluminum flake**Stock number:** 44262**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.
 After normal hours call Chemtrec at (800) 424-9300.

2 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**3 Hazards identification****Hazard description:**

F Highly flammable

Information pertaining to particular dangers for man and environment

R 15 Contact with water liberates extremely flammable gases.

R 17 Spontaneously flammable in air.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	3
REACTIVITY	2

Health (acute effects) = 1

Flammability = 3

Reactivity = 2

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.

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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:**

Handle under dry protective gas.

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:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

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Protect from humidity and water.

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 metal

	mg/m ³
ACGIH TLV	10 (dust) 5 (pyro powder)
Alberta Canada TWA	10; 20-STEL (dust) 5; 10-STEL (pyro powder)
Belgium TWA	10 (dust) 5 (pyro powder)
BC Canada TWA	3 (resp dust); 10 (total dust) 5 (pyro powder)
Germany MAK	1.5 (resp dust)
Ireland TWA	5 (resp dust); 10 (total inhal dust)
Japan TWA	0.5 (resp dust); 2 (total dust)
Netherlands MAC-TGG	10 (dust) 5 (pyro powder)
Quebec Canada TWA	10 (dust) 5 (pyro powder)
Sweden TWA	4 (resp dust); 10 (total dust)
United Kingdom TWA	4 (resp dust); 10 (total inhal dust)
USA PEL	5 (resp dust); 15 (total dust) 5 (pyro powder)

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:	Flakes
Color:	Silver grey
Odor:	Odorless

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Change in condition

Melting point/Melting range: 660°C (1220°F)
Boiling point/Boiling range: 2467°C (4473°F)
Sublimation temperature / start: Not determined

Flash point: Not applicable

Flammability (solid, gaseous) Contact with water liberates extremely flammable gases.

Ignition temperature: 400°C (752°F)

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 (68°F): 2.699 g/cm³

Solubility in / Miscibility with Water: Contact with water releases flammable gases

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:

Water/moisture
 Acids

Dangerous reactions

Contact with water releases flammable gases
 Spontaneously flammable in air.

Dangerous products of decomposition: Hydrogen

11 Toxicological information**Acute toxicity:****Primary irritant effect:**

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Reproductive effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Aluminum may be implicated in Alzheimers disease. Inhalation of aluminum containing dusts may cause pulmonary disease.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).

Endocrine - hypoglycemia.

Lungs, Thorax, or Respiration - fibrosis (interstitial)

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Lung, Thorax, or Respiration - cough.
 Lungs, Thorax, or Respiration - dyspnea.
 Nutritional and Gross Metabolic - weight loss or decreased weight gain.
 Reproductive - Effects on Newborn - behavioral.
 Reproductive - Effects on Newborn - delayed effects.
 Reproductive - Effects on Newborn - physical.
 Reproductive - Effects on Newborn - other postnatal measures or effects.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
 No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

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):	ALUMINIUM POWDER, UNCOATED
Label	Dangerous when Wet

Land transport ADR/RID (cross-border)

ADR/RID class:	4.3 (W2) Substances which, in contact with water, emit flammable gases
Danger code (Kemler):	423
UN-Number:	1396
Packaging group:	II

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Description of goods: 1396 ALUMINIUM POWDER, UNCOATED**Maritime transport IMDG:**

IMDG Class: 4.3
UN Number: 1396
Label 4.3
Packaging group: II
EMS Number: F-G,S-O
Proper shipping name: ALUMINIUM POWDER, UNCOATED

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 4.3
UN/ID Number: 1396
Label 4.3
Packaging group: II
Proper shipping name: ALUMINIUM 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.

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Department issuing MSDS: Health, Safety and Environmental Department.

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USA