

**Material Safety Data Sheet**

According to OSHA and ANSI

Printing date 12/07/2011

Reviewed on 12/05/2011

**1 Identification of the substance/mixture and of the company/undertaking****Product identifier****Product name:** Zinc powder**Stock number:** 39694**CAS Number:**

7440-66-6

**EC number:**

231-175-3

**Index number:**

030-001-00-1

**Relevant identified uses of the substance or mixture and uses advised against.****Sector of Use** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

**2 Hazards identification****Classification of the substance or mixture**

GHS02 Flame

H250 Catches fire spontaneously if exposed to air.

H260 In contact with water releases flammable gases which may ignite spontaneously.



GHS09 Environment

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

F; Highly flammable

R15-17: Contact with water liberates extremely flammable gases. Spontaneously flammable in air.



N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Information concerning particular hazards for human and environment:** Not applicable**Label elements****Labelling according to EU guidelines:****Code letter and hazard designation of product:**

F Highly flammable

N Dangerous for the environment

**Risk phrases:**

15 Contact with water liberates extremely flammable gases.

17 Spontaneously flammable in air.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Safety phrases:**

43 In case of fire, use metallic extinguishing powder. Never use water.

46 If swallowed, seek medical advice immediately and show this container or label.

60 This material and its container must be disposed of as hazardous waste.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

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**Product name:** Zinc powder

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**Hazard description:****WHMIS classification**

B6 - Reactive flammable material

**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

**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition/information on ingredients****Chemical characterization: Substances****CAS# Description:**

7440-66-6 Zinc

**Identification number(s):****EC number:** 231-175-3**Index number:** 030-001-00-1**4 First aid measures****Description of 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 medical treatment.**Information for doctor****Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**5 Firefighting measures****Extinguishing media****Suitable extinguishing agents** Special powder for metal fires. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards arising from the substance or mixture**

Spontaneously flammable in air.

In case of fire, the following can be released:

Metal oxide fume

**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

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**Methods and material for containment and cleaning up:**

Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents  
Keep away from ignition sources.

**Reference to other sections**

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****Precautions 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:**

Substance/product is self ignitable.

**Conditions for safe storage, including any incompatibilities****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.  
Do not store together with acids.  
Store away from strong bases.  
Store away from air.  
Store away from water/moisture.

**Further information about storage conditions:**

Store under dry inert gas.  
This product is moisture sensitive.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from humidity and water.  
This product is air sensitive.  
**Specific end use(s)** No further relevant information available.

**8 Exposure controls/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.

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

**Additional information:** No data

**Exposure controls****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.  
Maintain an ergonomically appropriate working environment.  
**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Protection of hands:**

Impervious gloves  
Check protective gloves prior to each use for their proper condition.

**Material of gloves**

The selection of suitable gloves not only depends on the material, but also on quality.  
Quality will vary from manufacturer to manufacturer.

**Eye protection:**

Safety glasses  
Full face protection

**Body protection:** Protective work clothing.

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**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Powder
Color:	Grey
Odor:	Odorless
Odor threshold:	Not determined.

pH-value:	Not applicable.
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**Change in condition**

Melting point/Melting range:	419.5°C (787 °F)
Boiling point/Boiling range:	907°C (1665 °F)
Sublimation temperature / start:	Not determined

Flammability (solid, gaseous)	Contact with water liberates extremely flammable gases.
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Auto igniting:	Spontaneously flammable in air.
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**Explosion limits:**

Lower:	Not determined
Upper:	Not determined

Vapor pressure at 487°C (909 °F):	1 hPa (1 mm Hg)
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Density at 20°C (68 °F):	7.14 g/cm <sup>3</sup> (59.583 lbs/gal)
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Relative density	Not determined.
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Vapor density	Not applicable.
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Evaporation rate	Not applicable.
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**Solubility in / Miscibility with**

Water:	Contact with water releases flammable gases
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Segregation coefficient (n-octanol/water):	Not determined.
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**Viscosity:**

dynamic:	Not applicable.
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kinematic:	Not applicable.
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Other information	No further relevant information available.
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**10 Stability and reactivity****Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions**

Spontaneously flammable in air.

Contact with water releases flammable gases

**Incompatible materials:**

Acids

Bases

Oxidizing agents

Air

Water/moisture

**Hazardous decomposition products:** Metal oxide fume**11 Toxicological information****Information on toxicological effects****Acute toxicity:****Primary irritant effect:**

on the skin: May cause irritation

on the eye: May cause irritation

**Sensitization:** No sensitizing effects known.**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

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The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

## 12 Ecological information

### Toxicity

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

### Behavior in environmental systems:

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

### Ecotoxicological effects:

**Remark:** Very toxic for aquatic organisms

### Additional ecological information:

### General notes:

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Very toxic for aquatic organisms

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

### Waste treatment methods

**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

### UN-Number

DOT, ADR, IMDG, IATA

UN1436

### UN proper shipping name

DOT, IMDG, IATA

ZINC POWDER

ADR

1436 ZINC POWDER, ENVIRONMENTALLY HAZARDOUS

### Transport hazard class(es)

DOT, IMDG, IATA



### Class

4.3 Substances which, in contact with water, emit flammable gases.

### Label

4.3+4.2

### ADR



### Class

4.3 (WS) Substances which, in contact with water, emit flammable gases

### Label

4.3+4.2

### Packing group

DOT, ADR, IMDG, IATA

III

### Environmental hazards:

Environmentally hazardous substance, solid;  
Marine Pollutant

### Marine pollutant:

No

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<b>Special marking (ADR):</b>	Symbol (fish and tree)
<b>Special precautions for user</b>	Warning: Substances which, in contact with water, emit flammable gases
<b>Danger code (Kemler):</b>	423
<b>EMS Number:</b>	F-G,S-O
<b>Segregation groups</b>	Heavy metals and their salts (including their organometallic compounds), powdered metals
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>UN "Model Regulation":</b>	UN1436, ZINC POWDER, ENVIRONMENTALLY HAZARDOUS, 4.3 (4.2), III

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Product related hazard informations:**

**Hazard symbols:**

F Highly flammable

N Dangerous for the environment

**Risk phrases:**

15 Contact with water liberates extremely flammable gases.

17 Spontaneously flammable in air.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Safety phrases:**

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**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

**REACH - Pre-registered substances** Substance is listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**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.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:**

Zachariah C. Holt

Global EHS Manager

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

EINECS: European Inventory of Existing Commercial Chemical Substances

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

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

USA