

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 05/26/2009

Reviewed on 04/13/2009

**1 Identification of substance:****Product details:****Product name:** Iron pieces**Stock number:** 45090**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#)**

Iron (CAS# 7439-89-6): 100%

**Identification number(s):****EINECS Number:** 231-096-4**3 Hazards identification****Hazard description:** Not applicable**Information pertaining to particular dangers for man and environment** Not applicable**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

|            |   |
|------------|---|
| HEALTH     | 0 |
| FIRE       | 0 |
| REACTIVITY | 0 |

Health (acute effects) = 0

Flammability = 0

Reactivity = 0

**GHS label elements** Void**4 First aid measures****General information** No special measures required.**After inhalation** Seek medical treatment in case of complaints.**After skin contact** Generally the product does not irritate the skin.**After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing** Seek medical treatment.**5 Fire fighting measures****Suitable extinguishing agents** Special powder for metal fires. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Metal oxide fume

**Protective equipment:** No special measures required.**6 Accidental release measures****Person-related safety precautions:** Not required.**Measures for environmental protection:**

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

**Measures for cleaning/collecting:** Pick up mechanically.**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.

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**7 Handling and storage****Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

**Information about protection against explosions and fires:** No special measures required.**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** None.**8 Exposure controls and personal protection****Additional information about design of technical systems:** No further data; see item 7.**Components with limit values that require monitoring at the workplace:** Not required.**Additional information:** No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

**Breathing equipment:** Not required.**Protection of hands:** Not required.**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

|               |          |
|---------------|----------|
| <b>Form:</b>  | Pieces   |
| <b>Color:</b> | Grey     |
| <b>Odor:</b>  | Odorless |

**Change in condition**

|   |                 |
|---|-----------------|
| <b>Melting point/Melting range:</b>     | 1536°C (2797°F) |
| <b>Boiling point/Boiling range:</b>     | 3000°C (5432°F) |
| <b>Sublimation temperature / start:</b> | Not determined  |

**Flash point:** Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

|               |                |
|---------------|----------------|
| <b>Lower:</b> | Not determined |
| <b>Upper:</b> | Not determined |

**Vapor pressure at 1787°C (3249°F):** 1.33 hPa (1 mm Hg)**Density at 20°C (68°F):** 7.87 g/cm<sup>3</sup>**Solubility in / Miscibility with**

|               |           |
|---------------|-----------|
| <b>Water:</b> | Insoluble |
|---------------|-----------|

**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:****Dangerous reactions** No dangerous reactions known**Dangerous products of decomposition:** Metal oxide fume**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

|      |      |                          |
|------|------|--------------------------|
| Oral | LD50 | 20000 mg/kg (guinea pig) |
|      |      | 30000 mg/kg (rat)        |

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**Primary irritant effect:****on the skin:** Powder: irritant effect**on the eye:** Powder: irritant effect**Sensitization:** No sensitizing effects known.**Other information (about experimental toxicology):**

Tumorigenic effects have been observed on tests with laboratory animals.

**Subacute to chronic toxicity:**

Iron compounds may cause vomiting, diarrhea, pink urine, black stool, and liver damage. May cause damage to the kidneys. Irritating to the respiratory tract, they may cause pulmonary fibrosis if dusts are inhaled.

**Subacute to chronic toxicity:**

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

Behavioral - irritability.

Gastrointestinal - nausea or vomiting.

Blood - normocytic anemia.

Blood - other changes.

Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - catalases.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Liver - other changes.

Liver - tumors.

Lungs, Thorax, or Respiration - chronic pulmonary edema.

Lungs, Thorax, or Respiration - tumors.

Lungs, Thorax, or Respiration - other changes.

Tumorigenic - active as anti-cancer agent.

Tumorigenic - protects against induction of experimental tumors.

Tumorigenic - equivocal tumorigenic agent by RTECS criteria.

**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**

Not a hazardous material for transportation.

**DOT regulations:****Hazard class:** None**Land transport ADR/RID (cross-border)****ADR/RID class:** None**Maritime transport IMDG:****IMDG Class:** None**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** None**Transport/Additional information:** Not dangerous according to the above specifications.**15 Regulations****Product related hazard informations:**

Observe the general safety regulations when handling chemicals

**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).

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**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.

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

**Contact:** Zachariah Holt

**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

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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