1 Identification
Product identifier
Product name: Iron granules
Stock number: 39708
CAS Number: 7439-89-6
EC number: 231-096-4

Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, 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 business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification
Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

Label elements
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms

Signal word Warning
Hazard statements
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2B - Toxic material causing other toxic effects

Classification system
HMIS ratings (scale 0-4) (Hazardous Materials Identification System)
Health (acute effects) = 1
Flammability = 1
Physical Hazard = 1

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients
Chemical characterization: Substances
CAS# Description: 7439-89-6 Iron
Identification number(s): EC number: 231-096-4

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.

(Contd. on page 2)
Product name: Iron granules

After swallowing Seek medical treatment.
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 Fire-fighting 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
If this product is involved in a 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.
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up: Ensure adequate ventilation.
Prevention of secondary hazards: No special measures required.
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
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: No information known.
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:
Do not store together with acids.
Store away from oxidizing agents.
Store away from halogens.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
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:
7439-89-6 Iron (100.0%)
EV (Canada) Long-term value: 1* 5** mg/m³
as iron;*salts, water-soluble;**welding fume
TLV (Canada) Long-term value: 5 mg/m³
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.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.
Recommended filter device for short term use:
Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.
Material of gloves Nitrile rubber, NBR
Penetration time of glove material (in minutes) Not determined
Eye protection: Safety glasses
Body protection: Protective work clothing.

9 Physical and chemical properties
Information on basic physical and chemical properties
General information
Appearance:
Form: Various forms (powder/flake/crystalline/beads, etc.)
10 Stability and reactivity

- **Reactivity**: No information known.
- **Chemical stability**: Stable under recommended storage conditions.
- **Thermal decomposition / conditions to be avoided**: Decomposition will not occur if used and stored according to specifications.
- **Possibility of hazardous reactions**: Reacts with strong oxidizing agents
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: Acids, Oxidizing agents, Halogens
- **Hazardous decomposition products**: Metal oxide fume

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
- **LD/LC50 values that are relevant for classification**:
  - Oral LD50: 30000 mg/kg (rat)
- **Skin irritation or corrosion**: May cause irritation
- **Eye irritation or corrosion**: Causes serious eye irritation.
- **Sensitization**: No sensitizing effects known.
- **Germ cell mutagenicity**: No effects known.
- **Carcinogenicity**: The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.
  - No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
- **Reproductive toxicity**: No effects known.
- **Specific target organ system toxicity - repeated exposure**: No effects known.
- **Specific target organ system toxicity - single exposure**: May cause respiratory irritation.
- **Aspiration hazard**: No effects known.
- **Subacute to chronic toxicity**: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
- **Additional toxicological information**: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

- **Toxicity**: No further relevant information available.
- **Persistence and degradability**: No further relevant information available.
- **Bioaccumulative potential**: No further relevant information available.
- **Mobility in soil**: No further relevant information available.
- **Additional ecological information**:
  - **General notes**: Do not allow material to be released to the environment without proper governmental permits.
  - **Avoid transfer into the environment**.
  - **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, ADN, IMDG, IATA**: Not applicable
**Product name:** Iron granules

### 15 Regulatory information

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

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

#### Hazard pictograms

- GHS07

**Signal word** Warning

**Hazard statements**
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

**Precautionary statements**
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**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).
- SARA Section 313 (specific toxic chemical listings) Substance is not listed.

**California Proposition 65**
- Prop 65 - Chemicals known to cause cancer Substance is not listed.
- Prop 65 - Developmental toxicity, female Substance is not listed.
- Prop 65 - Developmental toxicity, male Substance is not listed.

**Other regulations, limitations and prohibitive regulations**

- Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

- Substance is not listed.

### 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 SDS:** Global Marketing Department

**Date of preparation / last revision:** 11/23/2015

**Abbreviations and acronyms:**
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- ICAO: International Civil Aviation Organization
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- DOT: U.S. Department of Transportation
- 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)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- vPvB: very Persistent and very Bioaccumulative
- ACS: American Chemical Society
- NTP: National Toxicology Program (USA)
- IARC: International Agency for Research on Cancer
- EPA: Environmental Protection Agency (USA)
- OSHA: Occupational Safety and Health Administration (USA)
- NTP: National Toxicology Program (USA)
- ACGIH: American Conference of Governmental Industrial Hygienists (USA)
- NRC: National Research Council (Canada)
- NIOSH: National Institute for Occupational Safety and Health (USA)
- EPA: Environmental Protection Agency (USA)