

Strontium Iron Oxide Nanoparticles (SrFe12O19)

US Research Nanomaterials, Inc.

Material Safety Data Sheet

acc. to OSHA and ANSI

1 Identification of substance:

Product details:

Product name: Strontium dodecairon nonadecaoxide

Stock number: US3968

Manufacturer/Supplier:

US Research Nanomaterials, Inc.

3302 Twig Leaf Lane

Houston, Texas 77084, USA

www.us-nano.com

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Strontium dodecairon nonadecaoxide

(CAS# 12023-91-5), 100%

Identification number(s):

EINECS Number: 234-685-4

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 (acute effects) =

1 Flammability = 0

Reactivity = 0

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.

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

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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:

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

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.

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:

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.

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:

Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

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:

Not required.

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

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

- Form:** Powder
- Color:** Black
- Odor:** Not determined

	<u>Value/Range</u>	<u>Unit</u>	<u>Method</u>
<input type="checkbox"/> Change in condition			
<input type="checkbox"/> Melting point/Melting range:	>450	° C	
<input type="checkbox"/> Boiling point/Boiling range:	Not determined		
<input type="checkbox"/> Sublimation temperature / start:	Not determined		
<input type="checkbox"/> Flash point:	Not applicable		
<input type="checkbox"/> Ignition temperature:	Not determined		
<input type="checkbox"/> Decomposition temperature:	Not determined		
<input type="checkbox"/> Danger of explosion:	Product does not present an explosion hazard.		
<input type="checkbox"/> Explosion limits:			
<input type="checkbox"/> Lower:	Not determined		
<input type="checkbox"/> Upper:	Not determined		
<input type="checkbox"/> Vapor pressure:	Not determined		
<input type="checkbox"/> Density:	at 20 ° C	5.1 g/cm ³	
<input type="checkbox"/> Solubility in / Miscibility with			
<input type="checkbox"/> Water:	Not determined		

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:** Oxidizing agents
- Dangerous reactions** No dangerous reactions known
- Dangerous products of decomposition:** Metal oxide fume

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.

Subacute to chronic toxicity:

Strontium has a low order of toxicity. High doses have caused changes in blood clotting factors, adrenal function and liver function.

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.

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

- Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

37 Wear suitable gloves.

- 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.