

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Iron Oxide Nanorings, Research Grade**

Catalog Number: NovaRing-FeO-200

Formula: Fe₂O₃

Diameter: ~ 200 nm

Length: ~ 150 nm

Supplier: Novarials Corporation
800 W Cummings Park, Suite 4600
Woburn, MA 01801

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2. HAZARDS IDENTIFICATION

Emergency Overview

GHS Label elements, including precautionary statements



Signal word **Warning**

Hazard statement(s)

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection/face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P321 Specific treatment.
P332 + P313 If skin irritation occurs: Get medical advice/attention.

P337 + P313 If eye irritation persists: Get medical advice/attention.
 P362 Take off contaminated clothing and wash before reused.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents/container to an approved waste disposal plant.

NFPA Ratings

Health Hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0

HMIS Ratings

Health Hazard: 2
Chronic Health Hazard:
Flammability: 0
Physical Hazard: 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Ferric oxide
 Formula: Fe₂O₃
 Molecular weight: 159.69 g/mol

Component	Concentration
Diiron Trioxide	
CAS-No.	1309-37-1
EC-No.	215-168-2

4. FIRST AID MEASURES

General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions – Iron Oxides

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. Protect against electrostatic charges.

Conditions for safe storage

Keep container tightly closed in a cool, dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Personal protective equipment****Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye/Face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Control of environmental exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Form powder
Color orange

Safety data

pH no data available
Melting point/freezing point no data available
Boiling point no data available
Flash point no data available
Ignition temperature no data available
Auto ignition temperature no data available
Lower explosion limit no data available
Upper explosion limit no data available
Vapour pressure no data available
Density no data available
Water solubility insoluble
Partition coefficient:
n-octanol/water no data available
Relative vapour density no data available
Odour no data available
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY**Reactivity**

no data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Materials to avoid

Chloroformates, Peroxides, Strong acid.

Hazardous decomposition products

Other decomposition products -no data available

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

no data available

Skin corrosion/irritation

Skin – Human - Result: Skin irritation

Serious eye damage/eye irritation

Eye – Human - Result: Eye irritation

Eye – Human - Result: Moderate eye irritation

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Carcinogenicity – rat – Subcutaneous

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic: Tumors at site or application.

IARC: 3-Group 3: Not classifiable as to its carcinogenicity to humans.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity -single exposure (Globally Harmonized System)

Inhalation: may cause respiratory irritation.

Specific target organ toxicity -repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Additional Information

Long term inhalation exposure to iron oxide (fume or dust) can cause siderosis. Siderosis is considered to be a benign pneumoconiosis and does not normally cause significant physiologic impairment. Siderosis can be observed on x-rays with the lungs having a mottle appearance. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION**Toxicity**

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US), IMDG, IATA

Not a dangerous goods.

15. REGULATORY INFORMATION

SARA 302 Components

Not required

SARA 313 Components

Not required

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

Diiron trioxide

CAS-No. 1309-37-1

Pennsylvania Right To Know Components

Diiron trioxide

CAS-No. 1309-37-1

New Jersey Right To Know Components

Diiron trioxide

CAS-No. 1309-37-1

California Prop. 65 Components

This product does not contain any chemical known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. DISCLAIMER

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