

1. Chemical and Company Identification

Product Name: Iron Oxide Nanoparticles in water
Product Use: Laboratory chemical – R&D use only
Manufacturer/Supplier: Cytodiagnosics Inc., 919 Fraser Drive, Unit 11, Burlington, Ontario,
Canada, L7L 4X8
Phone: (866) 344-3954
Web: <https://www.cytodiagnosics.com>
Information and Support: customer_service@cytodiagnosics.com

2. Hazards Identification

Classification of the substance or mixture: Not a hazardous substance or mixture.
GHS Label elements, including precautionary statements: Not a hazardous substance or mixture.
Hazards not otherwise classified or not covered by GHS: None.

3. Composition/Information on Ingredients

This product contains: Iron Oxide Nanoparticles (Fe_3O_4) in water
Chemical Formula: Fe_3O_4
Components:
Component 1: Iron Oxide, CAS# 1317-61-9
Component 2: Water, CAS# 7732-18-5
Component 3: Stabilizing ligands

4. First Aid Measures

In case of skin contact: In case of contact with skin, immediately remove contaminated clothing and wash extensively with soap and water and seek medical advice if symptoms occur.
In case of ingestion: If swallowed and person is conscious wash mouth with water, seek medical advice immediately.
In case of eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If case of inhalation: In case of accident by inhalation, remove to fresh air. If breathing becomes difficult seek medical advice. If not breathing, give artificial respiration.

5. Fire Fighting Measures

Suitable extinguishing media:
Product is not flammable.
Special protective equipment and precautions for fire-fighters:
Wear self-contained breathing apparatus if necessary. Wear protective gloves.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:
Use personal protective equipment. Avoid aerosols or dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.
Methods and materials for containment and cleaning up:
Dispose of in accordance to government regulations.
Do not allow product to enter drains or the environment. For disposal see section 13.

7. Handling and Storage**Precautions for safe handling:**

Impervious gloves, safety glasses and protective work clothing should be worn.

Conditions for safe storage:

Store at room temperature in the dark.

8. Exposure Controls/Personal Protection

General protective and hygienic measures: The standard precautionary measures for handling any chemical 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 and skin.

Breathing equipment: Use suitable respiratory when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9. Physical and Chemical Properties

Form: Liquid form – Crystalline powder, dissolved in a solvent

Color: Black

Odor: Odor dependent upon solvent used. Crystalline powder is odorless

Melting point/Melting range: ~1538°C to bulk melting point of Fe₃O₄ crystals. The solvent is liquid and melting point depends on the chemical composition of the solvent.

Boiling point/Boiling range: Determined by solvent used

Sublimation temperature / start: Not determined

Flash point: Dependent upon solvent used

Ignition temperature: Dependent upon solvent used

Decomposition temperature: Not determined

Danger of explosion: Dependent upon solvent used. Crystalline powder does not present an explosion hazard.

Explosion limits: Not determined

Vapor pressure: Dependent upon solvent used

Density: 5.2 g/cm³ (crystal at 20 °C) for the nanocrystal powder if isolated

Solubility in / Miscibility with Polar Solvents: Soluble when hydrophilic ligands are present

Solubility in / Miscibility with Non-Polar Solvents: Soluble when hydrophobic ligands are present

10. Stability and Reactivity

Reactivity: Stable under normal temperature and pressure.

Stability: Stable at room temperature in closed containers under normal storage and handling conditions

11. Toxicological Information

Acute toxicity: No data available

Skin: Irritant to skin and mucous membranes.

Eyes: Irritating effect.

Sensitization: No sensitizing effects known.

Additional toxicological information: Danger through skin absorption is unknown.

Target organs: Possibly liver and kidney.

EPA-B1: Not carcinogenic**IARC-1:** Not carcinogenic**NTP-2:** Not carcinogenic**ACGIH A2:** Not carcinogenic

To the best of our knowledge, the acute and chronic toxicity of this substance is not fully known. However, preliminary studies suggest iron oxide nanocrystals are not toxic.

WARNING: Many of the toxic effects of iron oxide are still being researched and are currently unknown at this point, Use at own risk.

12. Ecological Information

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

13. Disposal Considerations

Disposal: Consult a licensed waste disposal specialist for proper destruction. Observe all local, state and federal regulations.

14. Transport Information

DOT Classification: Not a DOT controlled material (United States)

Identification: Not applicable

Special provisions for transport: Not applicable

15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the safety data sheet contains all of the information required by those regulations.

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Known Act.

Pennsylvania Right to Know Components

Triiron tetraoxide CAS-No. 1317-61-9

New Jersey Right to Know Components

Triiron tetraoxide CAS-No. 1317-61-9

Polyethylene glycol (PEG) ligands

California Prop. 65 Components

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

16. Other Information**HMIS Rating**

Health Hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard: 0



NFPA Rating

Health Hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

This product is for laboratory research purposes, not for diagnostic or therapeutic use in humans or animals.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Users should make independent decisions regarding completeness of the information based on all sources available. Cytodiagnosics Inc. shall not be held liable for any damage resulting from handling or contact with the above product.

Revision Date: 1.1.2024