


Iron Nickel Zinc Oxide	Pricing >
Nickel Zinc Iron Oxide Nanoparticle Dispersion	Pricing >
Nickel Zinc Iron Oxide Nanoparticles / Nanopowder	Pricing >

Linear Formula	NiZnFe ₄ O ₄
Pubchem CID	16217786
MDL Number	MFCD06200997
EC No.	N/A
IUPAC Name	copper; nickel(2+); oxido(oxo)iron
Beilstein/Reaxys No.	N/A
SMILES	[O-][Fe]=O.[O-][Fe]=O.[O-][Fe]=O.[O-][Fe]=O.[Ni+2].[Cu+2]
Inchl Identifier	1S/Cu.4Fe.Ni.8O/q+2;;;;;+2;;;;;4*-1
Inchl Key	ZVNYTSWDRSTIPL-UHFFFAOYSA-N
Signal Word	Warning
Hazard Statements	H315-H317-H319-H335
Hazard Codes	Xi
Precautionary Statements	P261-P264-P271-P272-P280-P302+P352-P304+P340-P305+P351+P338-P312-P333+P313-P337+P313-P362-P403+P233-P405-P501
Risk Codes	49-36/37/38-43
Safety Statements	53-26-36/37-45
RTECS Number	NO7118000
Transport Information	N/A
WGK Germany	3
GHS Pictograms	GHS07 Exclamation Point 

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SAFETY DATA SHEET

Date Accessed: 06/18/2021

Date Revised: 05/15/2015

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #12645-50-0

Relevant identified uses of the substance:
Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:
Domestic, North America +1 800-424-9300
International +1 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Skin sensitisation (Category 1), H317
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.
GHS Label elements, including precautionary statements
Pictogram



Signal word: Warning
Hazard statement(s)
H315
Causes skin irritation.
H317
May cause an allergic skin reaction.
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.
P272
Contaminated work clothing should not be allowed out of the workplace.
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/doctor if you feel unwell.

P321

Specific treatment (see supplemental first aid instructions on this label).

P333 + P313

If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313

If eye irritation persists: Get medical advice/ attention.

P362

Take off contaminated clothing and wash before reuse.

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.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Synonyms:

Zinc nickel iron oxide

Nickel zinc ferrite

Zinc nickel ferrite

Formula: Fe₄NiO₄Zn

Molecular weight: 411.46 g/mol

CAS-No.: 12645-50-0

SECTION 4. FIRST AID MEASURES

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Move out of dangerous area.

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.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas.

Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

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.

Reference to other sections

For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

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).

Skin 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.

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.

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).

Control of environmental exposure

Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Form: powder
Colour: dark brown, black
Odour
No data available
Odour Threshold
No data available
pH
No data available
Melting point/freezing point
No data available
Initial boiling point and boiling range
No data available
Flash point
Not applicable
Evaporation rate
No data available
Flammability (solid, gas)
No data available
Upper/lower flammability or explosive limits
No data available
Vapour pressure
No data available
Vapour density
No data available
Relative density
2.81 g/mL at 25 °C (77 °F)
Water solubility
insoluble
Partition coefficient: n-octanol/water
No data available
Auto-ignition temperature
No data available
Decomposition temperature
No data available
Viscosity
No data available
Explosive properties
No data available
Oxidizing properties
No data available
Other safety information
No data available

SECTION 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

Incompatible materials
Strong oxidizing agents
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.
- Nickel/nickel oxides, Iron oxides, Zinc/zinc oxides
Other decomposition products
- No data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity
No data available
Dermal:
No data available
No data available
Skin corrosion/irritation
No data available
Serious eye damage/eye irritation
No data available
Respiratory or skin sensitisation
Germ cell mutagenicity
No data available
Carcinogenicity
May cause cancer by inhalation.
IARC: 1-Group 1: Carcinogenic to humans (Nickel zinc ferrite)
IARC: 1-Group 1: Carcinogenic to humans (Nickel zinc ferrite)
NTP: Known-Known to be human carcinogen (Nickel zinc ferrite)
NTP: Known-Known to be human carcinogen (Nickel zinc ferrite)
OSHA:
No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
Reproductive toxicity
No data available
Reproductive toxicity-Rat-Inhalation
Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).
Reproductive toxicity-Rat-Inhalation
Effects on Fertility: Pre-implantation mortality (e.g., reduction in number corpora lutea). Effects on Embryo or Fetus: Fetal death.
No data available

Specific target organ toxicity -single exposure
Inhalation-May cause respiratory irritation.
Specific target organ toxicity -repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
RTECS: NO7118000

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
No data available
Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical
safety assessment not required/not conducted
Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
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.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

SECTION 15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Nickel zinc ferrite

CAS-No.12645-50-0

Revision Date 2015-07-08

SARA 311/312

Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know

Components

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

Pennsylvania Right To Know

Components

Nickel zinc ferrite

CAS-No.12645-50-0

Revision Date

2015-07-08

New Jersey Right To Know

Components

Nickel zinc ferrite

CAS-No.12645-50-0

Revision Date

2015-07-08

California Prop. 65

Components

WARNING! This product contains a chemical known to the

State of California to cause cancer.

Nickel zinc ferrite

CAS-No.12645-50-0

Revision Date

2007-09-28

WARNING! This product contains a chemical known to the

State of California to cause cancer.

Nickel zinc ferrite

CAS-No.12645-50-0

Revision Date

2007-09-28

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all

inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2016 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.
