Copper Ferrite	Pricing >
Copper Iron Oxide Nanoparticle Dispersion	Pricing >
Copper Iron Oxide Nanoparticles / Nanopowder	Pricing >

Linear Formula	$CuFe_2O_4$
Pubchem CID	16217788
MDL Number	MFCD00016056
EC No.	N/A
IUPAC Name	copper; oxido(oxo)iron
SMILES	[Cu+2].[O-][Fe]=O.[O-][Fe]=O
Inchl Identifier	InChI=1S/Cu.2Fe.4O/q+2;;;;;2*-1
Inchl Key	DXKGMXNZSJMWAF-UHFFFAOYSA-N

Signal Word	Warning
Hazard Statements	H302-H315-H319-H335-H410
Hazard Codes	Xn,N
Risk Codes	22-36/37/38-50/53
Safety Statements	26-61
RTECS Number	N/A
Transport Information	UN 3077 9/PG III
WGK Germany	3

GHS Pictograms	**GHS09 Environment** 

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SAFETY DATA SHEET

Date Accessed: 04/23/2024
Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #12018-79-0

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

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 3), H412

2.2 GHS Label elements, including precautionary statements

Pictogram
Signal word Warning
Hazard statement(s)
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.
Precautionary statement(s)

P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures
Synonyms : Copper ferrite
Formula : $CuFe_2O_4$
Molecular weight : 239.23 g/mol
Hazardous components
Component Classification Concentration
Diiron trioxide
CAS-No.
EC-No.
1309-37-1
215-168-2
>= 50 - < 70 %
Copper oxide
CAS-No.
EC-No.
1317-38-0
215-269-1
Aquatic Acute 1; Aquatic Chronic 3; H400, H412
>= 50 - < 70 %

SECTION 4. FIRST AID MEASURES

4.1 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.
4.2 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
4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
Iron oxides, Copper oxides
5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.
5.4 Further information
No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing Vapors, mist or gas. Ensure adequate
ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.
6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment
must be avoided.
6.3 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.
6.4 Reference to other sections
For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result
in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration
before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids
7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Component CAS-No. Value Control
parameters
Basis
Diiron trioxide 1309-37-1 TWA 5 mg/m3 USA. ACGIH
Threshold Limit Values
(TLV)
Remarks Pneumoconiosis
Not classifiable as a human carcinogen
TWA 5.000000
mg/m3
USA. ACGIH Threshold Limit Values
(TLV)
Pneumoconiosis
Not classifiable as a human carcinogen
TWA 15.000000
mg/m3
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants
TWA 5.000000
mg/m3
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants
TWA 10.000000

mg/m3
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants
See Appendix D - Substances with No Established
RELs
TWA 5.000000
mg/m3
USA. NIOSH Recommended
Exposure Limits
TWA 10.000000
mg/m3
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants
TWA 15.000000
mg/m3
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants
TWA 5.000000
mg/m3
USA. Occupational Exposure Limits
(OSHA) - Table Z-1 Limits for Air
Contaminants
TWA 5.000000
mg/m3
USA. NIOSH Recommended
Exposure Limits
See Appendix D - Substances with No Established
RELs
TWA 5 mg/m3 USA. NIOSH Recommended
Exposure Limits
See Appendix D - Substances with No Established
RELs
Copper oxide 1317-38-0 TWA 0.100000
mg/m3
USA. NIOSH Recommended
Exposure Limits
Also see specific listing for Copper (dusts and mists)
TWA 0.100000
mg/m3
USA. NIOSH Recommended
Exposure Limits
Also see specific listing for Copper (dusts and mists)
TWA 0.1 mg/m3 USA. NIOSH Recommended
Exposure Limits
Also see specific listing for Copper (dusts and mists)
8.2 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
Safety glasses with side-shields conforming to EN166
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
Impervious clothing, 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
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
a) Appearance Form: powder
Colour: red brown
b) Odor No data available
c) Odor Threshold No data available
d) pH No data available
e) Melting point/freezing
point
No data available
f) Initial boiling point and
boiling range
No data available
g) Flash point No data available
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower

flammability or
explosive limits
No data available
k) Vapor pressure No data available
l) Vapor density No data available
m) Relative density 5.4 g/mL at 25 °C (77 °F)
n) Water solubility No data available
o) Partition coefficient: noctanol/
water
No data available
p) Auto-ignition
temperature
No data available
q) Decomposition
temperature
No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available
9.2 Other safety information
No data available

SECTION 10. STABILITY AND REACTIVITY

10. STABILITY AND REACTIVITY
10.1 Reactivity
No data available
10.2 Chemical stability
Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
No data available
10.4 Conditions to avoid
No data available
10.5 Incompatible materials
Alkali metals, Powdered metals, Strong acids, Reducing agents, Peroxides, Chloroformates, Aluminum, Hydrogen
sulfide gas
10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
No data available
Inhalation: 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
No data available
Germ cell mutagenicity
No data available
Carcinogenicity
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Diiron trioxide)
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
No data available
Specific target organ toxicity - single exposure
No data available
Specific target organ toxicity - repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Overdose of iron compounds may have a corrosive effect on the gastrointestinal mucosa and be followed
by necrosis, perforation, and stricture formation. Several hours may elapse before symptoms that can include
epigastric pain, diarrhea, vomiting, nausea, and hematemesis occur. After apparent recovery a person may experience
metabolic acidosis, convulsions, and coma hours or days later. Further complications may develop leading to acute
liver necrosis that can result in death due to hepatic coma., 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 mottled appearance., Symptoms
of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver
damage, central nervous system excitation followed

by depression, jaundice, convulsions, paralysis, and coma. Death
may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and
demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It
has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available
12.2 Persistence and degradability
No data available
12.3 Bioaccumulative potential
No data available
12.4 Mobility in soil
No data available
12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 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
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY

HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide)
Marine pollutant:yes
IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Copper oxide)
Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing
inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

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:
Copper oxide
CAS-No.
1317-38-0
Revision Date
2007-07-01
SARA 311/312 Hazards
Acute Health Hazard
Massachusetts Right To Know Components
Diiron trioxide
CAS-No.
1309-37-1
Revision Date
2007-03-01
Pennsylvania Right To Know Components
Diiron trioxide
CAS-No.
1309-37-1
Revision Date
2007-03-01
Copper oxide 1317-38-0 2007-07-01
New Jersey Right To Know Components
Diiron trioxide
CAS-No.
1309-37-1
Revision Date
2007-03-01
Copper oxide 1317-38-0 2007-07-01
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or

any other
reproductive harm.

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.