

# Nickel Copper Iron Manganese powder: sc-301463



The Power to Question

## MATERIAL SAFETY DATA SHEET

### 1 Identification of substance:

**Product Name:** Nickel Copper Iron Manganese powder

**Catalog Number:** sc-301463

**Supplier:** Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

**Emergency:** ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### 2 Composition/Data on components:

**Chemical characterization:**

**Description:** (CAS# 11105-19-4)

Nickel (CAS# 7440-02-0), >63%

Copper (CAS# 7440-50-8), 28-34%

Iron (CAS# 7439-89-6), <2.5%

Manganese (CAS# 7439-96-5), <2%

**Formula:** 11105-19-4

**Molecular Weight:** 233.03

### 3 Hazards identification

**Hazard description:**



Xn Harmful  
F Highly flammable

**Information pertaining to particular dangers for man and environment**

R 11 Highly flammable.

R 40 Limited evidence of a carcinogenic effect.

R 43 May cause sensitization by skin contact.

**Classification system**

**HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	2
FIRE	3
REACTIVITY	2

Health (acute effects) = 2

Flammability = 3

Reactivity = 2

**GHS label elements**



Warning



Warning



Warning

2.7/2 - Flammable solid.

3.6/2 - Suspected of causing cancer.

3.4/1 - May cause an allergic skin reaction.

**Prevention:**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/ equipment.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

Use personal protective equipment as required.

**Response:**

IF ON SKIN: Wash with plenty of soap and water.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see label).

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

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

#### 4 First aid measures

##### After inhalation

Supply fresh air and to be sure call for a doctor.  
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** Special powder for metal fires. Do not use water.

**For safety reasons unsuitable extinguishing agents** Water

##### 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

Keep away from ignition sources

##### Measures for environmental protection:

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

##### Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

##### 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.

Prevent formation of dust.

##### Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

##### Storage

**Requirements to be met by storerooms and receptacles:** Store in a cool location.

##### Information about storage in one common storage facility:

Do not store together with acids.

Do not store together with alkalies (caustic solutions).

Store away from oxidizing agents.

##### 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:

Manganese, elemental & inorganic compounds (as Mn)

mg/m<sup>3</sup>

ACGIH TLV 0.2

Austria MAK 5

Belgium TWA 5

Denmark TWA 2.5

Finland TWA 0.5

Hungary TWA	0.3; 0.6-STEL
Germany MAK	0.55
Japan OEL	0.3 (respirable dust)
Korea TLV	0.2
Netherlands MAC-TGG	1; 3-MAC-K
Norway TWA	2.5
Poland TWA	0.3; 5-MAC
Russia	0.2-STEL (fume)
Sweden NGV	1; 2.5-TGV (respirable dust)
	2.5; 5-TGV (total dust)
United Kingdom TWA	5
USA PEL	5-Ceiling

**Copper**

	mg/m3
ACGIH TLV	1 (dust, mist)
	0.2 (fume)
Austria MAK	1
	0.1 (fume)
Belgium TWA	0.2 (fume)
	1 (dust)
Denmark TWA	0.1
Finland TWA	0.2 (fume)
	1 (dust)
France VME	0.1 (fume)
	1 (dust)
	1; 2-STEL (dust)
Germany MAK	0.1 (fume)
	1 (dust)
Hungary TWA	0.2; 0.4-STEL (dust)
Korea TLV	1 (dust, mist)
	0.2 (fume)
Netherlands MAC-TGG	1 (dust)
Norway TWA	0.05
	0.1 (fume)
Poland TWA	0.1; 0.3-STEL (fume)
	1; 2-STEL (dust)
Russia	1-STEL (dust)
Sweden NGV	0.2 (resp. dust)
	1 (total dust)
Switzerland MAK-W	0.1; 0.2-KZG-W (fume)
	1; 1-KZG-W
United Kingdom TWA	0.2 (fume)
	1; 2-STEL (dust, mist)
	1; 3-STEL
USA PEL TWA	0.1 (fume)
	1 (dust, mist)

**Nickel and inorganic compounds, as Ni**

	mg/m3
ACGIH TLV	1.5; A5 (metal)
	0.2; A1 (insoluble compounds)
	0.1; A4 (soluble compounds)
Austria	Carcinogen
Denmark TWA	0.5
Finland TWA	0.1 (skin) Carcinogen
France VME	1; C3-Carcinogen
Germany	Carcinogen
Hungary	0.005-STEL; Carcinogen (insoluble compounds)
Japan OEL	1; 2B-Carcinogen
Korea TLV	1.5
Netherlands MAC-TGG	1; Carcinogen
	1 (insoluble compounds)
Poland TWA	0.25
Russia	0.05-STEL
Sweden NGV	0.5 (dust)
Switzerland MAK-W	0.5; Carcinogen
United Kingdom TWA	0.1
USA PEL	1

**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	
<b>Form:</b>	Powder
<b>Color:</b>	Grey
<b>Odor:</b>	Odorless
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined
<b>Flash point:</b>	Not applicable
<b>Flammability (solid, gaseous)</b>	Highly flammable.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure:</b>	Not determined
<b>Density:</b>	Not determined
<b>Solubility in / Miscibility with Water:</b>	
	Insoluble

## 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:

Acids

Bases

Oxidizing agents

### Dangerous reactions

Reacts with strong alkali

Reacts with acids

Reacts with oxidizing agents

### Dangerous products of decomposition:

Hydrogen

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:** Sensitization possible through skin contact.

#### Subacute to chronic toxicity:

Chronic exposure to manganese may cause impairment to the central nervous system. Symptoms include sluggishness, sleepiness, muscle weakness, loss of facial muscle control, edema, emotional disturbances, spastic gait and falling.

Copper compounds may be irritating to the skin, eyes and respiratory tract. They may cause metal fume fever, hemolysis of the red blood cells and injury to the liver, lungs, kidneys and pancreas. Ingestion may also cause vomiting, gastric pain, dizziness, anemia, cramps, convulsions, shock, coma and death.

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.

Nickel and nickel compounds may cause a form of dermatitis known as nickel itch. They may also cause intestinal disorders, convulsions and asphyxia. Airborne nickel contaminated dusts are regarded as carcinogenic to the respiratory tract.

#### Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-A: human carcinogen: sufficient evidence from epidemiologic studies to support a causal association between exposure and cancer.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

ACGIH A5: Not suspected as a human carcinogen: Not suspected as a human carcinogen on the basis of properly conducted epidemiologic studies in humans. Studies have sufficiently long follow-up, reliable exposure histories, sufficiently high dose, and adequate statistical power to conclude that exposure to the agent does not convey a significant risk of cancer to humans. Evidence suggesting a lack of carcinogenicity in experimental animals will be considered if it is supported by other relevant data.

## 12 Ecological information:

### General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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

### DOT regulations:



**Hazard class:** 4.1  
**Identification number:** UN3089  
**Packing group:** III  
**Proper shipping name (technical name):** METAL POWDER, FLAMMABLE, N.O.S.  
**Label:** 4.1

### Land transport ADR/RID (cross-border)



**ADR/RID class:** 4.1 (F3) Flammable solids, self-reactive substances and solid desensitised explosives  
**Danger code (Kemler):** 40  
**UN-Number:** 3089  
**Packaging group:** III  
**Description of goods:** 3089 METAL POWDER, FLAMMABLE, N.O.S. (nickel copper iron manganese)

### Maritime transport IMDG:



**IMDG Class:** 4.1  
**UN Number:** 3089  
**Label:** 4.1  
**Packaging group:** III  
**Proper shipping name:** METAL POWDER, FLAMMABLE, N.O.S.

### Air transport ICAO-TI and IATA-DGR:



**ICAO/IATA Class:** 4.1  
**UN/ID Number:** 3089  
**Label:** 4.1  
**Packaging group:** III  
**Proper shipping name:** METAL POWDER, FLAMMABLE, N.O.S.

**UN "Model Regulation":** UN3089, METAL POWDER, FLAMMABLE, N.O.S., 4.1, III

## 15 Regulations

### Product related hazard informations:

#### Hazard symbols:

Xn Harmful

F Highly flammable

#### Risk phrases:

11 Highly flammable.

40 Limited evidence of a carcinogenic effect.

43 May cause sensitization by skin contact.

**Safety phrases:**

22 Do not breathe dust.

36/37 Wear suitable protective clothing and gloves.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

**Information about limitation of use:**

For use only by technically qualified individuals.

This product contains nickel and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know act of 1986 and 40CFR372.

This product contains copper and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

This product contains manganese and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**16 Other information:**

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

12/22/2010