

# SAFETY DATA SHEET

Date Printed: 05/29/2024

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## SECTION 1. IDENTIFICATION

**Product Identifier:** >90% Cobalt Carbonyl

**Product Code:** CO-CBL-01-C

**CAS Number:** 10210-68-1

**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:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Self-heating substances and mixtures (Category 1), H251

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 1), H330

Skin irritation (Category 2), H315

Skin sensitisation (Category 1), H317

Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 2), H361

Specific target organ toxicity - repeated exposure, Oral (Category 2), Nervous system, H373

Acute aquatic toxicity (Category 3), H402

Chronic aquatic toxicity (Category 3), H412

2.2 GHS Label elements, including precautionary statements



Pictogram

Signal word Danger

Hazard statement(s)

H251 Self-heating: may catch fire.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H330 Fatal if inhaled.  
H351 Suspected of causing cancer.  
H361 Suspected of damaging fertility or the unborn child.  
H373 May cause damage to organs (Nervous system) through prolonged or repeated exposure if swallowed.  
H412 Harmful to aquatic life with long lasting effects.  
Precautionary statement(s)  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P235 + P410 Keep cool. Protect from sunlight.  
P260 Do not breathe dust/ fume/ gas/ mist/ Vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P284 Wear respiratory protection.  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P333 + P313 If skin irritation or rash occurs: 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.  
P407 Maintain air gap between stacks/ pallets.  
P413 Store bulk masses greater than .? kg/ .? lbs at temperatures not exceeding .? °C/ .? °F.  
P420 Store away from other materials.  
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 : Dicobalt octacarbonyl

Formula : C<sub>8</sub>Co<sub>2</sub>O<sub>8</sub>

Molecular weight : 341.95 g/mol

Hazardous components

Component Classification Concentration

Octacarbonyldicobalt

CAS-No.

EC-No.

10210-68-1

233-514-0

Self-heat. 1; Acute Tox. 4;

Acute Tox. 1; Skin Sens. 1;

Carc. 2; Aquatic Chronic 4;

H251, H302, H317, H330,

H351, H413

$\geq 90 - \leq 100$

%

n-Hexane

CAS-No.

EC-No.

Index-No.

110-54-3

203-777-6

601-037-00-0

Flam. Liq. 2; Skin Irrit. 2; Repr.

2; STOT SE 3; STOT RE 2;

Asp. Tox. 1; Aquatic Acute 2;

Aquatic Chronic 2; H225,

H304, H315, H336, H361,

H373, H411

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## 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. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### 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

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## 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

Carbon oxides, Cobalt/cobalt oxides

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

Use water spray to cool unopened containers.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. 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

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing

and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed

containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing

and transfer to a container for disposal according to local regulations (see section 13).

### 6.4 Reference to other sections

For disposal see section 13.

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## 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. Keep away from sources of ignition - No smoking.

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.

Recommended storage temperature 2 - 8 °C

Air sensitive. Handle and store under inert gas.

Storage class (TRGS 510): Pyrophoric and self-heating hazardous materials

### 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

Octacarbonyldicobal

t

10210-68-1 TWA 0.100000

mg/m<sup>3</sup>

USA. ACGIH Threshold Limit Values

(TLV)

Remarks Pulmonary edema

Spleen damage

TWA 0.100000

mg/m<sup>3</sup>

USA. NIOSH Recommended

Exposure Limits

TWA 0.1 mg/m<sup>3</sup> USA. ACGIH Threshold Limit Values

(TLV)

Pulmonary edema

Spleen damage

TWA 0.1 mg/m<sup>3</sup> USA. NIOSH Recommended

Exposure Limits

n-Hexane 110-54-3 TWA 50.000000 ppm

USA. ACGIH Threshold Limit Values

(TLV)

Central Nervous System impairment

Eye irritation

Peripheral neuropathy

Substances for which there is a Biological Exposure Index or Indices

(see BEI® section)

Danger of cutaneous absorption

TWA 50.000000 ppm

180.000000

mg/m<sup>3</sup>

USA. NIOSH Recommended

Exposure Limits

TWA 500.000000

ppm

1,800.000000

mg/m<sup>3</sup>

USA. Occupational Exposure Limits

(OSHA) - Table Z-1 Limits for Air

Contaminants

The value in mg/m<sup>3</sup> is approximate.

TWA 50 ppm

USA. ACGIH Threshold Limit Values

(TLV)

Central Nervous System impairment

Eye irritation

Peripheral neuropathy

Substances for which there is a Biological Exposure Index or Indices

(see BEI® section)

Danger of cutaneous absorption

TWA 50 ppm

180 mg/m<sup>3</sup>

USA. NIOSH Recommended

## Exposure Limits

TWA 500 ppm

1,800 mg/m<sup>3</sup>

## USA. Occupational Exposure Limits

(OSHA) - Table Z-1 Limits for Air

Contaminants

The value in mg/m<sup>3</sup> is approximate.

TWA 50 ppm

180 mg/m<sup>3</sup>

USA. OSHA - TABLE Z-1 Limits for

Air Contaminants - 1910.1000

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen
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Basis

n-Hexane 110-54-3 2,5-

Hexanedione

0.4 mg/l Urine ACGIH - Biological

Exposure Indices

(BEI)

Remarks End of shift at end of workweek

## 8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method:

EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the

supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an

industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It

should not be construed as offering an approval for any specific use scenario.

#### 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

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type

N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the

sole means of protection, use a full-face supplied air respirator. 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.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance Form: crystalline

Colour: dark red

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 -23 °C (-9 °F)

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 No data available

n) Water solubility No data available

o) Partition coefficient: octanol/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

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## **SECTION 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

Oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available

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## **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: 2B - Group 2B: Possibly carcinogenic to humans (Octacarbonyldicobalt)

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

Central nervous system depression, Lung irritation, chest pain, pulmonary edema, giddiness, slowed reaction time,

slurred speech, Headache, Dizziness, Drowsiness, Unconsciousness

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence (Octacarbonyldicobalt)

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## **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.

Harmful to aquatic life with long lasting effects.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this

material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a

licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a

combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

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## **SECTION 14. TRANSPORT INFORMATION**

DOT (US)

UN number: 3190 Class: 4.2 Packing group: II

Proper shipping name: Self-heating solid, inorganic, n.o.s. (Octacarbonyldicobalt)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 3190 Class: 4.2 Packing group: II EMS-No: F-A, S-J

Proper shipping name: SELF-HEATING SOLID, INORGANIC, N.O.S. (Octacarbonyldicobalt)

IATA

UN number: 3190 Class: 4.2 Packing group: II

Proper shipping name: Self-heating solid, inorganic, n.o.s. (Octacarbonyldicobalt)

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## SECTION 15. REGULATORY INFORMATION

### SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:  
Octacarbonyldicobalt

CAS-No.

10210-68-1

Revision Date

1994-04-01

### SARA 313 Components

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

CAS-No.

110-54-3

Revision Date

2007-07-01

Octacarbonyldicobalt 10210-68-1 1994-04-01

### SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Octacarbonyldicobalt

CAS-No.

10210-68-1

Revision Date

1994-04-01

n-Hexane 110-54-3 2007-07-01

Pennsylvania Right To Know Components

Octacarbonyldicobalt

CAS-No.

10210-68-1

Revision Date

1994-04-01

n-Hexane 110-54-3 2007-07-01

New Jersey Right To Know Components

Octacarbonyldicobalt

CAS-No.

10210-68-1

Revision Date

1994-04-01

n-Hexane 110-54-3 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.

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## 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 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.