



<a href="#">Tetracobalt Dodecacarbonyl</a>		<a href="#">Pricing &gt;</a>	
Linear Formula	Co4(CO)12		
Pubchem CID	6096999		
MDL Number	MFCD00064698		
EC No.	241-763-1		
IUPAC Name	carbon monoxide; cobalt		
SMILES	[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[C]-#[O+].[Co].[Co].[Co].[Co]		
Inchl Identifier	InChI=1S/12CO.4Co/c12*1-2;...		
Inchl Key	InChI=1S/12CO.4Co/c12*1-2;...		
Signal Word		Danger	
Hazard Statements		H228-H351	
Hazard Codes		F, T	
Precautionary Statements		P231-P235-P301+P310-P305+P351+P338-P422-P501	
Risk Codes		N/A	
Safety Statements		N/A	
Transport Information		UN3178 4.1/PG II	
GHS Pictograms	<a href="#">GHS02 Flame</a>		
			
	<a href="#">GHS06 Skull and Crossbones</a>		
			

Create Printable PDF

# SAFETY DATA SHEET

**Date Accessed:** 03/29/2024

**Date Revised:** 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #17786-31-1

**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:

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

d~?GHS02 Flame

Flam. Sol. 1 H228 Flammable solid.

d~?GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).



Hazard pictograms

d~?GHS02d~?GHS08

Signal word Danger

Hazard-determining components of labeling:

Tetracobalt dodecacarbonyl, min. 98%

Hazard statements

H228 Flammable solid.

H351 Suspected of causing cancer.

Precautionary statements

P231 Handle under inert gas.

P235 Keep cool.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present

and easy to do. Continue rinsing.

P422 Store contents under inert gas.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)

0

2

0

Health = 0

Fire = 2

Reactivity = 0

HMIS-ratings (scale 0 - 4)

HEALTH

FIRE

REACTIVITY

\*0

0

0

Health = \*0  
Fire = 0  
Reactivity = 0  
Other hazards  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A

---

### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS # / Substance Name  
17786-31-1 Tetracobalt dodecacarbonyl, min. 98%

---

### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
General information: Immediately remove any clothing soiled by the product.  
If inhaled: Supply fresh air; consult doctor in case of complaints.  
In case of skin contact: Immediately rinse with water.  
In case of eye contact: Rinse opened eye for several minutes under running water. Consult a physician.  
If swallowed: If symptoms persist consult doctor.  
Information for doctor:  
Most important symptoms and effects, both acute and delayed:  
No data available  
Indication of any immediate medical attention and special treatment needed  
No data available

---

### **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing agents:  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
Special hazards arising from the substance or mixture  
No data available  
Advice for firefighters  
Protective equipment: No special measures required.

---

### **SECTION 6. ACCIDENTAL RELEASE**

## MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away.

Environmental precautions: No special measures required.

Methods and materials for containment and cleanup:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

---

## SECTION 7. HANDLING AND STORAGE

Handling: Handle under inert gas.

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities:

Keep cool.

Store contents under inert gas.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep receptacle tightly sealed.

Recommended storage temperature: Store at temperatures not exceeding -18 °C.

Specific end use(s) No data available

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace: Not required.

Additional information: The lists that were valid during

the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

SProtective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Safety glasses

---

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance:

Form: Crystalline

Color: Black

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 60 dec °C (140 dec °F)

Boiling point/Boiling range: no data °C

Flash point: N/A

Flammability (solid, gas): Product is not flammable.

Ignition temperature:  
Decomposition temperature: No data available.  
Autoignition: No data available.  
Danger of explosion: No data available.  
Explosion limits:  
Lower: No data available.  
Upper: No data available.  
Vapor pressure: no data hPa  
  
Density at 20 °C (68 °F): 2.09 g/cm<sup>3</sup> (17.441 lbs/gal)  
Relative density No data available.  
Vapor density N/A  
Evaporation rate N/A  
Solubility in / Miscibility with  
Water: Insoluble.  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Solvent content:  
Organic solvents: 0.0 %  
VOC content: 0.0 g/l / 0.00 lb/gl  
Solids content: 100.0 %  
Other information No data available

---

## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity No data available  
Chemical stability  
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.  
Possibility of hazardous reactions No dangerous reactions known.  
Conditions to avoid No data available  
Incompatible materials: No data available  
Hazardous decomposition products: No dangerous decomposition products known.

---

## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity:  
Primary irritant effect:  
on the skin: No irritant effect.  
on the eye: No irritating effect.  
Sensitization: No sensitizing effects known.  
Additional toxicological information:  
Carcinogenic categories  
IARC (International Agency for Research on Cancer)  
17786-31-1 Tetracobalt dodecacarbonyl, min. 98% 2B

NTP (National Toxicology Program)  
Substance is not listed.  
OSHA-Ca (Occupational Safety & Health  
Administration)  
Substance is not listed.

---

## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Aquatic toxicity: No data available  
Persistence and degradability No data available  
Behavior in environmental systems:  
Bioaccumulative potential No data available  
Mobility in soil No data available  
Additional ecological information: Not known to be  
hazardous to water.  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A  
Other adverse effects No data available

---

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation:  
Must not be disposed of together with household  
garbage. Do not allow product to enter drains, sewage  
systems, or other water courses system.  
Uncleaned packagings:  
Recommendation: Disposal must be made according  
to official regulations.

---

## **SECTION 14. TRANSPORT INFORMATION**

UN-Number  
DOT NA3178  
IMDG, IATA UN3178  
UN proper shipping name  
DOT, IATA Flammable solid, inorganic, n.o.s.  
(Tetracobalt dodecacarbonyl,  
min. 98%)  
IMDG FLAMMABLE SOLID, INORGANIC, N.O.S.  
(Tetracobalt  
dodecacarbonyl, min. 98%)  
Transport hazard class(es)  
DOT  
dhcyOEg  
Class 4.1 Flammable solids, self-reactive substances  
and solid

desensitised explosives  
Label 4.1  
IMDG, IATA  
dhcgy  
Class 4.1 Flammable solids, self-reactive substances  
and solid  
desensitised explosives  
Label 4.1  
Packing group  
DOT, IMDG, IATA II  
Environmental hazards:  
Marine pollutant: No  
Special precautions for user N/A  
EMS Number: F-A,S-G  
Stowage Category B  
Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code N/A  
Transport/Additional information:  
IMDG  
Limited quantities (LQ) 1 kg  
Excepted quantities (EQ) Code: E2  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 500 g  
UN "Model Regulation": UN 3178 FLAMMABLE  
SOLID, INORGANIC, N.O.S.  
(TETRACOBALT DODECACARBONYL, MIN. 98%),  
4.1, II

---

## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental  
regulations/legislation specific for the substance or  
mixture

Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is listed.

TSCA (Toxic Substances Control Act):

Substance is not listed.

Proposition 65

Chemicals known to cause cancer:

Substance is not listed.

Chemicals known to cause reproductive toxicity for  
females:

Substance is not listed.

Chemicals known to cause reproductive toxicity for  
males:

Substance is not listed.

Chemicals known to cause developmental toxicity:

Substance is not listed.

Carcinogenic categories



EPA (Environmental Protection Agency)  
Substance is not listed.  
TLV (Threshold Limit Value established by ACGIH)  
Substance is not listed.  
NIOSH-Ca (National Institute for Occupational Safety and Health)  
Substance is not listed.  
GHS label elements  
The substance is classified and labeled according to the Globally Harmonized System (GHS).  
Hazard pictograms  
d~?GHS02d~?GHS08  
Signal word Danger  
Hazard-determining components of labeling:  
Tetracobalt dodecacarbonyl, min. 98%  
Hazard statements  
H228 Flammable solid.  
H351 Suspected of causing cancer.  
Precautionary statements  
P231 Handle under inert gas.  
P235 Keep cool.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present  
and easy to do. Continue rinsing.  
P422 Store contents under inert gas.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

---

## 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.

---