

## Chemical Safety Data Sheet MSDS / SDS

**DODECACARBONYLTETRACOBALT**

Revision Date:2026-05-31 Revision Number:1

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name : DODECACARBONYLTETRACOBALT  
CBnumber : CB5390377  
CAS : 17786-31-1  
EINECS Number : 241-763-1  
Synonyms : Co4(CO)12,Tetracobalt dodecacarbonyl

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P262 Do not get in eyes, on skin, or on clothing.  
P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.  
P309 IF exposed or if you feel unwell:  
P310 Immediately call a POISON CENTER or doctor/physician.

**Hazard statements**

H228 Flammable solid  
H301 Toxic if swallowed  
H317 May cause an allergic skin reaction  
H331 Toxic if inhaled

## SECTION 3: Composition/information on ingredients

### Substance

Product name	: DODECACARBONYLTETRACOBALT
Synonyms	: Co <sub>4</sub> (CO) <sub>12</sub> , Tetracobalt dodecacarbonyl
CAS	: 17786-31-1
EC number	: 241-763-1
MF	: C <sub>12</sub> Co <sub>4</sub> O <sub>12</sub>
MW	: 571.85

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## SECTION 4: First aid measures

### First Aid Measures

#### General advice

Consult a physician if necessary. Remove to fresh air.

#### Eye contact

Wash with plenty of water.

#### Skin Contact

Wash skin with soap and water.

#### Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

#### Ingestion

Never give anything by mouth to an unconscious person. Clean mouth with water.

### Most important symptoms and effects, both acute and delayed

#### Symptoms

No information available.

### Indication of any immediate medical attention and special treatment needed

#### Note to physicians

Treat symptomatically.

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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

#### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable Extinguishing Media

No information available.

## Specific hazards arising from the chemical

### Specific hazards arising from the chemical

No information available.

### Hazardous combustion products

Carbon oxides.

### Explosion data

#### Sensitivity to Mechanical Impact

No information available.

#### Sensitivity to Static Discharge

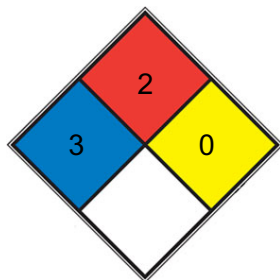
No information available.

## Protective equipment and precautions for firefighters

### Protective equipment and precautions for firefighters

As in any fire, wear self contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## NFPA 704



HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

FIRE 2 Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

SPEC.

HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### Personal precautions

Ensure adequate ventilation, especially in confined areas.

#### Environmental precautions

#### Environmental precautions

See Section 12 for additional Ecological Information.

## Methods and material for containment and cleaning up

### Methods for containment

Prevent further leakage or spillage if safe to do so.

### Methods for cleaning up

Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly.

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## SECTION 7: Handling and storage

### Precautions for safe handling

#### Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice.

#### Conditions for safe storage, including any incompatibilities

##### Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Store at 4 °C.

##### Incompatible materials

None known based on information supplied.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Exposure Guidelines

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Column 1	Column 2	Column 3	Column 4
Dodecacarbonyltetracobalt 17786-31-1	TWA: 0.02 mg/m <sup>3</sup> Co-	-	-

#### Appropriate engineering controls

##### Engineering Controls

Showers

Eyewash stations

Ventilation systems

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Wear safety glasses with side shields (or goggles).

##### Skin and Body Protection

Wear protective gloves and protective clothing.

##### Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance

with current local regulations.

### General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical State	Solid
Appearance	No information available
Odor	No information available
pH	No information available
Melting point/freezing point	60 °C
Boiling point	No information available
Flash point	No information available
Liquid Density	No information available
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	slightly soluble H <sub>2</sub> O [CRC10]
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Density and/or relative density	2,09 g/cm <sup>3</sup>
Colour	black

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## SECTION 10: Stability and reactivity

### Reactivity

Not applicable

### Chemical stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

### **Hazardous polymerization**

No information available.

### **Conditions to avoid**

Extremes of temperature and direct sunlight.

### **Incompatible materials**

Strong oxidizing agents.

### **Hazardous Decomposition Products**

Carbon oxides.

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## **SECTION 11: Toxicological information**

### **Information on likely routes of exposure**

#### **Inhalation**

Classified based on available data. For more details, see section 2.

#### **Eye contact**

Classified based on available data. For more details, see section 2.

#### **Skin Contact**

Classified based on available data. For more details, see section 2.

#### **Ingestion**

Classified based on available data. For more details, see section 2.

### **Information on toxicological effects**

#### **Symptoms**

Classified based on available data. For more details, see section 2.

### **Delayed and immediate effects as well as chronic effects from short and long-term exposure**

#### **Chronic Toxicity**

Classified based on available data. For more details, see section 2. Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

### **Chemical name ACGIH IARC NTP OSHA**

#### **Dodecacarbonyltetracobalt A3 Group**

2B Reasonably Anticipated X 17786-31-1

### **Numerical measures of toxicity - Product Information**

#### **Unknown acute toxicity**

100% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

#### **ATEmix (oral)**

100

**ATEmix (inhalation-dust/mist)**

0.5

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## SECTION 12: Ecological information

### **Ecotoxicity**

May cause long lasting harmful effects to aquatic life

100% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

### **Persistence and degradability**

No information available.

### **Bioaccumulation**

No information available.

### **Mobility**

No information available.

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## SECTION 13: Disposal considerations

### **Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

### **Contaminated packaging**

Do not reuse container.

### **California Hazardous Waste Status**

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Dodecacarbonyltetracobalt 17786-31-1	Toxic

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## SECTION 14: Transport information

### **DOT**

**UN/ID no**

UN3178

**Hazard Class**

4.1

**Packing Group**

II

**Proper shipping name**

Flammable solid, inorganic, n.o.s.

**Description**

UN3178, Flammable solid, inorganic, n.o.s., 4.1, II

**Emergency Response Guide Number**

133

**IMDG**

**UN/ID no**

UN3178

**Hazard Class**

4.1

**Packing Group**

II

**Proper shipping name**

Flammable solid, inorganic, n.o.s.

**Description**

UN3178, Flammable solid, inorganic, n.o.s., 4.1, II

**Special Provisions**

274

**EmS-No**

F-A, S-G

**IATA**

**UN/ID no**

UN3178

**Hazard Class**

4.1

**Packing Group**

II

**Proper shipping name**

Flammable solid, inorganic, n.o.s.

**Description**

UN3178, Flammable solid, inorganic, n.o.s., 4.1, II

**ERG Code**

3L

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## SECTION 15: Regulatory information

### International Inventories

All of the components in the product are on the following Inventory lists

Europe (EINECS/ELINCS/NLP) South Korea (KECL):

X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Dodecacarbonyltetracobalt	-	-	-	X	-	-	-	X	-	-

## US Federal Regulations

### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

### SARA 311/312 Hazard Categories

#### Acute health hazard

Yes

#### Chronic Health Hazard

Yes

#### Fire hazard

Yes

#### Sudden release of pressure hazard

No

#### Reactive hazard

No

### CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

## US State Regulations

### California Proposition 65

This product does not contain any Proposition 65 chemicals.

### U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Dodecacarbonyltetracobalt 17786-31-1	X	Not Listed	X

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## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

LD50: Lethal Dose 50%

LC50: Lethal Concentration 50%

EC50: Effective Concentration 50%

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

IMDG: International Maritime Dangerous Goods Code

IATA: International Air Transport Association

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

DOT: US Department of Transportation

NFPA: National Fire Protection Association

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety and Health Administration

**Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.