福建沃尔法化学科技有限公司
Fujian Wolfa Chemical Technology Co., Ltd

# DESIGN REPORT OF SAFETY DATA SHEET

**Revision Date: Dec. 14, 2025**

| | |
|---|---|
| **Name of the sample** | Cobalt carbonyl |
| **Applicant** | Fujian Wolfa Chemical Technology Co., Ltd. |
| **Supplier** | Fujian Wolfa Chemical Technology Co., Ltd. |
| **Composition of the sample** | Cobalt carbonyl: ≥99% |
| **Warranty of Design** | GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Eleventh revised edition |
| Design Result of SDS please see next page. | |

**Notes:This SDS is valid before the implementation of the Twelfth revised edition GHS.**

# SAFETY DATA SHEET

**SDS**



## Section 1 Product and Company Identification

### > Product Identifier

| | |
|---|---|
| **Product Name** | Cobalt carbonyl |
| **Synonyms** | —— |
| **CAS No.** | 10210-68-1 |
| **EC No.** | 233-514-0 |
| **Molecular Formula** | $C_8Co_2O_8$ |

### > Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

| | |
|---|---|
| **Relevant Identified Uses** | Please consult manufacturer. |
| **Uses Advised Against** | Please consult manufacturer. |

### > Details of the Supplier of the Safety Data Sheet

| | |
|---|---|
| **Applicant Name** | Fujian Wolfa Chemical Technology Co., Ltd. |
| **Application Address** | Room 2620, Building 18, Xingguang Plaza, No.970 Anji South Road, Fengze District, Quanzhou City, Fujian Province |
| **Applicant Post Code** | 362000 |
| **Applicant Telephone** | +86 18050950397 |
| **Applicant Fax** | —— |
| **Applicant E-mail** | —— |
| **Supplier Name** | Fujian Wolfa Chemical Technology Co., Ltd. |
| **Supplier Address** | Room 2620, Building 18, Xingguang Plaza, No.970 Anji South Road, Fengze District, Quanzhou City, Fujian Province |
| **Supplier Post Code** | 362000 |
| **Supplier Telephone** | +86 18050950397 |
| **Supplier Fax** | —— |
| **Supplier E-mail** | —— |

### > Emergency Phone Number

| | |
|---|---|
| **Emergency Phone Number** | +86 18050950397 |

## Section 2 Hazards Identification

**Hazard class and label elements of the product according to GHS (the Eleventh revised edition):**

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

| | |
|---|---|
| **Self-heating substances and mixtures** | Category 1 |

| | |
|---|---|
| **Acute toxicity-oral** | Category 4 |
| **Acute toxicity-inhalation** | Category 1 |
| **Skin sensitisation** | Category 1 |
| **Carcinogenicity** | Category 2 |
| **Harmful to aquatic environments - Long-term harm** | Category 4 |

## > GHS Label Elements

**Pictogram**



**Signal Word** Danger

## > Hazard Statements

| | |
|---|---|
| **H251** | Self-heating: may catch fire. |
| **H302** | Harmful if swallowed. |
| **H317** | May cause an allergic skin reaction. |
| **H330** | Fatal if inhaled. |
| **H351** | Suspected of causing cancer. |
| **H413** | May cause long-term and sustained harmful effects on aquatic organisms. |

## > Precautionary Statements

**Prevention**

| | |
|---|---|
| **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. |
| **P264** | Wash hands 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. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |
| **P284** | wear respiratory protection. |
| **P273** | Avoid release to the environment. |
| **P260** | Do not breathe dust/fume/gas/mist/vapours/spray. |

**Response**

| | |
|---|---|
| **P302+P352** | If ON SKIN: Wash with plenty of soap and water. |
| **P304+P340** | If INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing. |

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|---|---|
| **P310** | Immediately call a POISON CENTER or doctor/physician. |
| **P330** | Rinse mouth. |
| **P331** | Do NOT induce vomiting. |
| **P363** | Wash contaminated clothing before reuse. |

**Storage**

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |
| **P407** | Maintain air gap between stacks or pallets. |
| **P420** | Store away from other materials. |

**Disposal**

| | |
|---|---|
| **P501** | Dispose of contents/container to an approved waste disposal plant. |

**Physical hazards**

Self-heating; may catch fire.

**Health hazards**

May cause an allergic skin reaction. Fatal if inhaled. Harmful if swallowed. Suspected of causing cancer.

**Environmental hazards**

May cause long-lasting harmful effects to aquatic life. Due to its low water solubility, environmental migration is not expected. This product is insoluble in water and sinks in water; the likelihood of infiltration into soil is minimal. This product does not contain any known or suspected endocrine disruptors. Toxic to terrestrial vertebrates.

## Section 3 Composition/Information on Ingredients

| Component | CAS No. | EC No. | Concentration (weight percent, %) |
|---|---|---|---|
| Cobalt carbonyl | 10210-68-1 | 233-514-0 | ≥99% |

## Section 4 First Aid Measures

### > Description of First Aid Measures

| | |
|---|---|
| **General Advice** | Please show this SDS to the doctor who arrives on the scene. Immediate medical attention is required. |
| **Following Eye Contact** | Immediately rinse with plenty of water for at least 15 minutes, including under the eyelids. If it enters the eyes, flush immediately with copious water and seek medical attention. |
| **Following Skin Contact** | Remove contaminated clothing. Immediately rinse with plenty of water for at least 15 minutes. Seek immediate medical attention. |
| **If Swallowed** | Do not induce vomiting. Call a doctor or poison control center immediately. If vomiting occurs naturally, have the patient lean forward. |
| **If Inhalation** | Move to fresh air. If breathing stops, perform artificial respiration. If the patient has ingested or inhaled the substance, do not use mouth-to-mouth resuscitation; instead, perform artificial respiration using a pocket mask with a one-way valve or another |

suitable respiratory medical device. Immediate medical attention is required. There is a risk of serious damage to the lungs.

### > Most Important Symptoms and Effects, both Acute and Delayed

Inhalation may cause allergic or asthmatic symptoms or difficulty breathing.

May lead to allergic skin reactions.

Symptoms of an allergic reaction may include rash, itching, swelling, breathing difficulties, numbness in the hands or feet, dizziness, mild headache, chest pain, muscle pain, or flushing.

Vapors may cause drowsiness and dizziness.

### > Indication of Any Immediate Medical Attention and Special Treatment Needed

No data available.

## Section 5 Fire Fighting Measures

### > Extinguishing Media

**Suitable extinguishing media:** Water mist, alcohol-resistant foam, carbon dioxide, dry powder.

**For safety reasons unsuitable extinguishing agents:** Avoid using a direct water stream for firefighting, as it may cause splashing of flammable liquids and spread the fire.

### > Specific Hazards Arising from the chemical

Carbon oxides

Cobalt/cobalt oxides

Combustible

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

### > Special protective actions for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## Section 6 Accidental Release Measure

### > Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

### > Environmental Precautions

Do not flush into surface water or sanitary sewer system. Should not be released into the environment. Do not allow material to contaminate ground water system.

### > Methods and Materials for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Refer to protective measures listed in Sections 8 and 13.

## Section 7 Handling and Storage

### > Precautions for Handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

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

Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Store in freezer.

## Section 8 Exposure Controls/Personal Protection

### > Control Parameters

**Occupational Exposure Limit Values**

| Component | China | Taiwan | Thailand | Hong Kong | Denmark |
|---|---|---|---|---|---|
| Cobalt carbonyl | TWA: 0.05 mg/m$^3$ | - | TWA: 0.1 mg/m$^3$ | - | TWA: 0.1 mg/m$^3$ |
| **Component** | **ACGIH TLV** | **OSHA PEL** | **NIOSH** | **the United Kingdom** | **Belgium** |
| Cobalt carbonyl | TWA: 0.1 mg/m$^3$ | TWA: 0.1 mg/m$^3$ | TWA: 0.1 mg/m$^3$ | TWA: 0.1 mg/m$^3$ | TWA: 0.1 mg/m$^3$ |

ACGIH — American Conference of Governmental Industrial Hygienists

OSHA — Occupational Safety and Health Administration

NIOSH — National Institute for Occupational Safety and Health

**Biological Limit Values**

No information available.

**Occupational Exposure Limit**

No information available.

**Monitoring Method**

EN 14042 Workplace air - Guidelines for procedures used to assess exposure to chemical or biological reagents.

### > Engineering Controls

Use explosion-proof electrical/ventilating/lighting equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

### > Personal Protection Equipment

| | |
|---|---|
| **Eye protection** | Goggles (European standard - EN 166) |
| **Hand protection** | Protective gloves |
| **Respiratory protection** | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly. |
| **Skin and body protection** | Wear chemical-resistant protective clothing. |

| | |
|---|---|
| **Hygiene Measures** | Handle in accordance with good industrial hygiene and safety practice. |
| **Environmental exposure controls** | Prevent product from entering drains. Do not allow material to contaminate ground water system. |

## Section 9 Physical and Chemical Properties

| | |
|---|---|
| **Appearance** | Orange-red powder |
| **Odor** | No information available |
| **Odor Threshold** | No information available |
| **pH** | No information available |
| **Melting Point/Freezing Point (℃)** | 51℃(lit.) |
| **Initial Boiling Point and Boiling Range (℃)** | No information available |
| **Flash Point (℃)** | -23℃ (-9.4°F) – closed cup. |
| **Evaporation Rate** | No information available |
| **Flammability** | No information available |
| **Upper/lower explosive limits[%(v/v)]** | Upper limit: No information available;<br>Lower limit: No information available |
| **Vapor Pressure (KPa)** | 0.7 mmHg at 25℃ |
| **Relative Vapour Density (Air=1)** | No information available |
| **Relative Density (Water=1)** | 1.81 g/cm³ |
| **Solubility** | 20℃ Insoluble |
| **n-Octanol/Water Partition Coefficient** | No information available |
| **Auto-Ignition Temperature (℃)** | No information available |
| **Decomposition Temperature (℃)** | No information available |
| **Kinematic Viscosity (mm2/s)** | No information available |
| **Particle characteristics** | No information available |
| **Critical Temperature (℃)** | No information available |

## Section 10 Stability and Reactivity

| | |
|---|---|
| **Reactivity** | It will not occur during normal handling procedures. |
| **Chemical Stability** | heat sensitive. Air sensitive |
| **Possibility of Hazardous Reactions** | None under normal processing.Hazardous polymerization does not occur. |
| **Conditions to Avoid** | Heat. Incompatible products. Avoid dust formation. Exposure to air. |
| **Materials to avoid** | Halogens. Oxidizing agent. |
| **Hazardous decomposition products** | Cobalt oxides. Carbon monoxide (CO). Carbon dioxide ($CO_2$). |

## Section 11 Toxicological Information

### > Acute Toxicity

Oral: Category 4

Inhalation: Category 1

### > Skin Corrosion/Irritation

No information available.

### > Serious Eye Damage/Irritation

No information available.

### > Respiratory Sensitization

No information available.

### > Skin Sensitization

Category 1

### > Germ Cell Mutagenicity

No information available.

### > Carcinogenicity

Category 2

### > Reproductive Toxicity

No information available.

### > STOT-single Exposure

No information available.

### > Aspiration Hazard

No information available.

### > Potential Health Impacts

Inhalation: Fatal if inhaled.

Ingestion: Harmful if swallowed.

Skin: Harmful in contact with skin. May cause an allergic skin reaction.

### > Symptoms / Effects,Both Acute and Delayed

Symptoms may include central nervous system depression, respiratory tract irritation, chest pain, pulmonary edema, visual disturbances, reduced reaction time, slurred speech, headache, dizziness, drowsiness, and loss of consciousness.

## Section 12 Ecological Information

### > Acute aquatic toxicity

No information available.

### > Chronic aquatic toxicity

No information available.

### > Other adverse effects

May cause long-lasting harmful effects to aquatic life.

### > Others

| | |
|---|---|
| **Persistence and Degradability** | The product contains heavy metals. It is strictly prohibited to discharge into the environment. Special pretreatment is necessary. |

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|---|---|
| **Bioaccumulative Potential** | No information available. |
| **Mobility in Soil** | This product is insoluble in water and sinks underwater. The possibility of overflow and infiltration into the soil is low due to its low water solubility, making it impossible to migrate in the environment. |
| **Results of PBT and vPvB Assessment** | No information available. |

## Section 13 Disposal Considerations

### > Waste treatment methods

| | |
|---|---|
| **Waste Products** | Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations. |
| **Contaminated Packaging** | Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition. |
| **Other Information** | Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains. |

## Section 14 Transport Information

**Transporting Label**




| | |
|---|---|
| **Marine Pollutant** | No |
| **UN Number** | 3124 |
| **Proper Shipping Name** | TOXIC SOLID,SELF-HEATING,N.O.S.(Cobalt carbonyl) |
| **Hazard Class** | 6.1 |
| **Subsidiary Hazard Class** | 4.2 |
| **Packing Group** | I |
| **Packaging Method** | Follow the packaging instructions recommended by the manufacturer. |

## Section15 Regulatory Information

### > International chemical inventory

| Component | EINECS | TSCA | DSL | IECSC | NZIoC | PICCS | KECL | AIIC | ENCS |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt carbonyl | √ | √ | √ | √ | √ | √ | √ | √ | × |

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 Toxic Substances Control Act Inventory (United States)

【DSL】 Domestic Substances List (Canada)

【IECSC】 Inventory of Existing Chemical Substances in China

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECL】 Korean Existing Chemicals List

【AIIC】 Australian Inventory of Industrial Chemicals

【ENCS】 Existing and New Chemical Substances (Japan)

Note

"√" Indicates that the substance included in the regulations

"×" That no data or included in the regulations

## Section 16 Additional Information

**Preparation Date** Dec. 1, 2022

**Revision Date** Dec. 14, 2025

**Revision Reason** SDS Update Section

## Disclaimer

The information provided in this Safety Data Sheet is correct based on the latest knowledge, information and concepts available to us. The information provided is intended only as a guide for safe operation, use, processing, storage, transportation, disposal and discharge and is not intended as a guarantee or specification of quality. This information is only used for the specific substance specified and may not be suitable for mixing with any other substance or in all cases, unless otherwise specified in the context.