

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Cadmium oxide

### 1.2 Other means of identification

**Product number** -  
**Other names** oxocadmium;Cadmium oxide;

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Baishun Biotechnology Co., Ltd  
**Address** No. 26, Lane 918, Lianye Road, Zhelin Town, Fengxian District, Shanghai, 201400, China  
**Telephone** +86-21-37581181

### 1.5 Emergency phone number

**Emergency phone number** +86-21-37581181  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 2, Inhalation  
Germ cell mutagenicity, Category 2  
Carcinogenicity, Category 1B  
Specific target organ toxicity – repeated exposure, Category 1  
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1  
Reproductive toxicity, Category 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger

<b>Hazard statement(s)</b>	H330 Fatal if inhaled H341 Suspected of causing genetic defects H350 May cause cancer H372 Causes damage to organs through prolonged or repeated exposure H410 Very toxic to aquatic life with long lasting effects
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	P260 Do not breathe dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P284 [In case of inadequate ventilation] wear respiratory protection. P203 Obtain, read and follow all safety instructions before use. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment.
<b>Response</b>	P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P316 Get emergency medical help immediately. P320 Specific treatment is urgent (see ... on this label). P318 IF exposed or concerned, get medical advice. P319 Get medical help if you feel unwell. P391 Collect spillage.
<b>Storage</b>	P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.
<b>Disposal</b>	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

## 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Cadmium oxide	Cadmium oxide	1306-19-0	215-146-2	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Half-upright position. Refer for medical attention.

#### Following skin contact

Rinse skin with plenty of water or shower.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Refer for medical attention .

### 4.2 Most important symptoms/effects, acute and delayed

The lethal inhalation dose of cadmium oxide in humans is 2,500 mg/m<sup>3</sup> for a 1 minute exposure. Lethal exposure has been established at 50 mg (cadmium)/m<sup>3</sup> for 1 hour for cadmium oxide dust and 1/2 hour for the fume. These concentrations may be inhaled

without sufficient discomfort to warn worker of exposure. Inhalation may cause acute tracheobronchitis, pneumonitis, and pulmonary edema. Exposure can cause kidney and lung damage. Acute exposure by inhalation may cause death by anoxia. The lowest human toxic inhalation concentration is 8.630 mg/m<sup>3</sup>/5 hours for the fume. Persons with respiratory disorders should be excluded from contact with this material. (EPA, 1998)

#### **4.3 Indication of immediate medical attention and special treatment needed, if necessary**

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Cadmium and Related Compounds

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### **SECTION 5: Fire-fighting measures**

#### **5.1 Suitable extinguishing media**

If material on fire or involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Use "alcohol" foam, dry chemical or carbon dioxide. Cadmium compounds, NOS

#### **5.2 Specific hazards arising from the chemical**

When heated to decomposition, it emits toxic fumes of cadmium. (Non-Specific -- Cadmium Compounds) Fire may produce irritating or poisonous gases. Runoff from fire control or dilution water may cause pollution. Oxides of cadmium react explosively with magnesium when heated. (EPA, 1998)

#### **5.3 Special protective actions for fire-fighters**

In case of fire in the surroundings, use appropriate extinguishing media.

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### **SECTION 6: Accidental release measures**

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

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Vacuum spilled material with specialist equipment. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

#### **6.2 Environmental precautions**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Vacuum spilled material with specialist equipment. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

#### **6.3 Methods and materials for containment and cleaning up**

1) remove all ignition sources. 2) ventilate area of release. 3) collect released material in the most convenient and safe manner for reclamation or for disposal. ... cadmium dust

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### **SECTION 7: Handling and storage**

#### **7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Separated from food and feedstuffs. Store in an area without drain or sewer access. Storage temperature: Ambient with open venting

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

TLV: (respirable fraction): 0.002 mg/m<sup>3</sup>, as TWA; A2 (suspected human carcinogen); BEI issued. MAK: (as Cd, inhalable fraction): skin absorption (H); carcinogen category: 1; germ cell mutagen group: 3A

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection if powder.

#### Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Use local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Solid. Powder.
Colour	Red ochre.
Odour	Odorless
Melting point/freezing point	Remarks:Results obtained in nitrogen atmosphere.;Remarks:Results obtained using air atmosphere.
Boiling point or initial boiling point and boiling range	1385°C
Flammability	Noncombustible Solid
Lower and upper explosion limit/flammability limit	Not flammable
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	900-1000°C (amorphous)
pH	no data available
Kinematic viscosity	no data available
Solubility	Insoluble in water
Partition coefficient n-octanol/water	no data available
Vapour pressure	0mmHg at 25°C

<b>Density and/or relative density</b>	8.26 g/cm <sup>3</sup> . Temperature:22 °C.
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Reacts violently with magnesium when heated. This generates fire and explosion hazard.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

NoncombustibleCADIUM OXIDE reacts violently with magnesium. (NTP, 1992)

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Oxides of ... Cadmium ... can react explosively with Magnesium when heated.

### 10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /cadmium/.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat - 2 330 mg/kg bw.
- Inhalation: LC50 Rat inhalation 780 mg/cu m/10 minutes
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

Evaluation: There is sufficient evidence in humans for the carcinogenicity of cadmium and cadmium compounds. There is sufficient evidence in experimental animals for the carcinogenicity of cadmium compounds. There is limited evidence in experimental animals for the carcinogenicity of cadmium metal. In making the overall evaluation, the Working Group took into consideration the evidence that ionic cadmium causes genotoxic effects in a variety of types of eukaryotic cells, including human cells. Overall evaluation: Cadmium and cadmium compounds are carcinogenic to humans (Group 1). Cadmium and cadmium compounds

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the respiratory tract. May cause mechanical irritation to the eyes. Inhalation of the aerosol may cause lung oedema. See Notes. Exposure far above the OEL could cause death. The effects may be delayed. Medical observation is indicated.

#### **STOT-repeated exposure**

The substance may have effects on the kidneys and lungs. This may result in kidney impairment and tissue lesions. This substance is carcinogenic to humans.

#### **Aspiration hazard**

A harmful concentration of airborne particles can be reached quickly when dispersed.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: LC50 - *Pimephales promelas* - 1 500 µg/L - 4 d.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - 110 µg/L - 48 d.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 23 µg/L - 72 h.
- Toxicity to microorganisms: NOEC - activated sludge of a predominantly domestic sewage - 353 µg/L - 3 h. Remarks: Respiration rate.

### **12.2 Persistence and degradability**

no data available

### **12.3 Bioaccumulative potential**

BCF values of 4.2-11, 6.9-20, 57, 39 were calculated in fish for cadmium(SRC), using carp (*Cyprinus carpio*) which were exposed at concentrations of 50, 20, 4.0, and 1.0 ppb over an 5-week period(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC). It was noted that fish showed abnormalities and died during the 6th week of exposure at the 500 ppb exposure level(1).

### **12.4 Mobility in soil**

no data available

### **12.5 Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **13.1 Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **SECTION 14: Transport information**

### **14.1 UN Number**

ADR/RID: UN2570 (For reference only, please check.)

IMDG: UN2570 (For reference only, please check.)

IATA: UN2570 (For reference only, please check.)

## 14.2 UN Proper Shipping Name

ADR/RID: CADMIUM COMPOUND (For reference only, please check.)      IMDG: CADMIUM COMPOUND (For reference only, please check.)      IATA: CADMIUM COMPOUND (For reference only, please check.)

## 14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)      IMDG: 6.1 (For reference only, please check.)      IATA: 6.1 (For reference only, please check.)

## 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)      IMDG: I (For reference only, please check.)      IATA: I (For reference only, please check.)

## 14.5 Environmental hazards

ADR/RID: Yes      IMDG: Yes      IATA: Yes

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to IMO instruments

no data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Cadmium oxide	Cadmium oxide	1306-19-0	215-146-2
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

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## SECTION 16: Other information

### Information on revision

Creation Date      July 15, 2019  
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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%

- EC50: Effective Concentration 50%

## References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

## Other Information

Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered. Do NOT take working clothes home.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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