

Copper Oxide

Version number: 1.0

SECTION 1: Identification

1.1 Product identifier

Identification of the substance copper(II) oxide

Trade name Copper Oxide

CAS number 1317-38-0

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

Relevant identified uses For the production of:
Stain
Paint
Fungicide

1.3 Details of the supplier of the safety data sheet

Valudor Products, LLC
179 Calle Magdalena Suite 100
Encinitas, California CA 92024
United States

Telephone: +1 (760) 635 8500
e-mail: info@valudor.com
Website: www.valudor.com

1.4 Emergency telephone number

Emergency information 800-535-5053 (Infotrac)

As above or nearest toxicological information centre.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

This substance does not meet the criteria for classification.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Not required.

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Copper Oxide

Version number: 1.0

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	copper (II) oxide
Identifiers	
CAS No	1317-38-0
Molecular formula	Cu O
Molar mass	79.55 g/mol

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Self-protection of the first aider.

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.

If skin irritation occurs: Get medical advice/attention.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth with water (only if the person is conscious).

Induce vomiting when the affected person is not unconscious.

Get medical advice/attention if you feel unwell.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

This information is not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

Copper Oxide

Version number: 1.0

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

foam, alcohol resistant foam, fire extinguishing powder

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

5.3 Advice for firefighters

Non-combustible.

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

use suitable breathing apparatus, chemical protection suit

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ventilate affected area.

Control of dust.

Do not breathe dust.

Do not get in eyes, on skin, or on clothing.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Knock down dust with water spray.

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Take up mechanically.

Copper Oxide

Version number: 1.0

Advice on how to clean up a spill

Take up mechanically.
Collect spillage.

Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections

Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.
Removal of dust deposits.

Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Remove contaminated clothing and protective equipment before entering eating areas.
Do not breathe dust.
Do not get in eyes, on skin, or on clothing.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.
Store away from other materials. (Reducing agents, Metal powder)

Protect against external exposure, such as

heat, humidity, direct light irradiation, sunlight

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Copper Oxide

Version number: 1.0

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Keep cool.

Store in a dry place.

Packaging compatibilities

Only packagings which are approved (e.g. acc. to DOT) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The following constituents are the only constituents of the product which have a PEL, a TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Notation	Source
US	Copper salts	-	PEL (CA)	-	1	-	-	dm, Cu	Cal/OSHA PEL
US	copper compounds	-	REL	-	1 (10 h)	-	-	dm, Cu	NIOSH REL
US	copper oxide	1317-38-0	REL	-	0.1 (10 h)	-	-	fume, Cu	NIOSH REL

Notation

Cu calculated as Cu (copper)

dm as dusts and mists

fume as fume

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Copper Oxide

Version number: 1.0

Eye/face protection

Wear eye/face protection.

Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
plastic and rubber	this information is not available	this information is not available

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Body protection

Protective clothing for use against solid particulates.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Particulate filter device (EN 143).

P2 (filters at least 94 % of airborne particles, color code: White).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state

solid
(powder)

Color

black

Odor

odorless

Odor threshold

not determined

Other safety parameters

pH (value)

not applicable

Melting point/freezing point

1,326 °C

Boiling point or initial boiling point and boiling range

these information are not available

Copper Oxide

Version number: 1.0

Flash point	not applicable
Evaporation rate	not determined
Flammability (solid, gas)	non-combustible
Explosive limits	not determined
Vapor pressure	not determined
Density and/or relative density	
Density	6.31 g/cm ³
Relative density	6.3 – 6.49 (water = 1)
Relative vapour density	not relevant (solid)
Solubility(ies)	
Water solubility	not miscible in any proportion
Partition coefficient	
n-octanol/water (log KOW)	these information are not available
Auto-ignition temperature	these information are not available
Decomposition temperature	not relevant
Viscosity	not relevant (solid)
Explosive properties	none
Oxidizing properties	none
Information for relevant hazard classes according to GHS	hazard classes acc. to GHS (physical hazards): not relevant
9.2 Other information	there is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

If heated:

danger of explosion, danger of fire, metal oxide smoke, toxic

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

Copper Oxide

Version number: 1.0

10.3 Possibility of hazardous reactions

Liberation of excessive heat with: Acids.
Dangerous/dangerous reactions with Metal powder.

10.4 Conditions to avoid

Control of dust.

10.5 Incompatible materials

acids, bases, reducing agents, metal (aluminum), hydrogen sulfide (H₂S), metal powder

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

This substance does not meet the criteria for classification.

Acute toxicity

Shall not be classified as acutely toxic (oral).

Shall not be classified as acutely toxic (dermal).

May be harmful if swallowed.

Inhalation.

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Exposure route	Endpoint	Value	Species	Method
oral	LD50	>2,500 mg/kg	rat, male	OECD Guideline 423
dermal	LD50	>2,000 mg/kg	rat	OECD Guideline 402

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

(ECHA, EU method B.4, OECD Guideline 404)

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

(ECHA, OECD Guideline 405, EU method B.5)

Copper Oxide

Version number: 1.0

Respiratory or skin sensitization

Skin sensitization

Shall not be classified as a skin sensitizer.
(ECHA, EU method B.6, OECD Guideline 406)

Respiratory sensitization

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.
(ECHA, EU method B.12, OECD Guideline 471, OECD Guideline 486)

Carcinogenicity

IARC Monographs

not listed

National Toxicology Program (United States)

not listed

OSHA Carcinogens

Not listed.

Reproductive toxicity

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:
Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Other information

There is no additional information.

Copper Oxide

Version number: 1.0

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Endpoint	Exposure time	Value	Species	Method	Source
Acute reference L(E)C50 34.4 µg Cu/l (across pHs)					

Aquatic toxicity (chronic)

Endpoint	Value	Species	Notes	Exposure time
Chronic reference NOEC 14.9 µg Cu/l (across pHs)				

Endpoint	Exposure time	Value	Species	Method	Source
Chronic reference NOEC 14.9 µg Cu/l (across pHs)					

12.2 Persistence and degradability

Biodegradation

The study does not need to be conducted because the substance is inorganic.

Persistence

The study does not need to be conducted because the substance is inorganic.

12.3 Bioaccumulative potential

n-octanol/water (log KOW) not relevant
(inorganic)

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Other adverse effects

Data are not available.

Remarks

None.

Copper Oxide

Version number: 1.0

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packages

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

DOT UN3077

IMDG-Code UN3077

ICAO-TI UN3077

14.2 UN proper shipping name

DOT Environmentally hazardous substance, solid,
n.o.s.

IMDG-Code ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
SOLID, N.O.S.

ICAO-TI Environmentally hazardous substance, solid,
n.o.s.

Technical name copper(II) oxide

14.3 Transport hazard class(es)

DOT 9

IMDG-Code 9

ICAO-TI 9

14.4 Packing group

DOT III

IMDG-Code III

ICAO-TI III

14.5 Environmental hazards hazardous to the aquatic environment

Copper Oxide

Version number: 1.0

14.6 Special precautions for user -

14.7 Transport in bulk according to IMO instruments -

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information

49 CFR § 171.4 (c) Exceptions:

(1) Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.

(2) Single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in §§ 173.24 and 173.24a.

Particulars in the shipper's declaration UN3077, Environmentally hazardous substance, solid, n.o.s., (copper(II) oxide), 9, III

Danger label(s) 9, fish and tree



Environmental hazards yes
(hazardous to the aquatic environment)

Special provisions (SP) 8, 146, 335, 384, 441, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33

ERG No 171

International Maritime Dangerous Goods Code (IMDG) Additional information

Marine pollutant yes
(hazardous to the aquatic environment)
(copper (II) oxide)

Danger label(s) 9, fish and tree



Special provisions (SP) 274, 335, 966, 967, 969

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 kg


EmS F-A, S-F

Stowage category A

Copper Oxide

Version number: 1.0

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	9, fish and tree
	
Special provisions (SP)	A97, A158, A179, A197, A215
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

SECTION 15: Regulatory information

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

National regulations (United States)

Toxic Substance Control Act (TSCA) Substance is listed (ACTIVE)

Superfund Amendment and Reauthorization Act (SARA TITLE III)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed

Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings				
Name of substance	Name acc. to inventory	CAS No	Remarks	Effective date
copper(II) oxide	copper compounds		Includes any unique chemical substance that contains copper as part of that chemical's infrastructure (except for C.I. Pigment Blue 15 (PB-15, CAS No. 147-14-8), C.I. Pigment Green 7 (PG-7, CAS No. 1328-53-6), and C.I. Pigment Green 36 (PG-36, CAS No. 14302-13-7) except copper phthalocyanine compounds that are substituted with only hydrogen and/or bromine and/or chlorine that are derivatives of copper	1987-01-01

Copper Oxide

Version number: 1.0

Toxics Release Inventory: Specific Toxic Chemical Listings				
Name of substance	Name acc. to inventory	CAS No	Remarks	Effective date
			phthalocyanine	

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Not listed

Clean Air Act

Not listed

Right to Know Hazardous Substance List

Toxic or Hazardous Substance List (MA-TURA)

Name of substance	Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Thres hold	De Minimis Concentration Threshold
copper(II) oxide	Copper Compounds	-	1015	-	-	1.0 %

Hazardous Substances List (MN-ERTK)

Not listed

Hazardous Substance List (NJ-RTK)

Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications	Listed in	Substance number	DOT number
copper(II) oxide	copper compounds	-	-		1 2 3 4 6 17 18 20	2215	3089

Legend

- Occupational Safety and Health Administration, 29 CFR 1910-Occupational Safety and Health Standards, Subpart Z-Toxic and Hazardous Substances, July 1, 2008.
- "2008 Emergency Response Guidebook," Research and Special Programs Administration, U.S. Department of Transportation, 2008.
- List of Toxics Release Inventory Chemicals, Section 313, Emergency Planning and Community Right to Know Act (EPCRA), Toxics Release Inventory (TRI) Program, U.S. Environmental Protection Agency, 40 CFR 372.65, July 1, 2008.

Copper Oxide

Version number: 1.0

Legend

- 2 "2009 TLVs® and BEIs®, Threshold Limit Values and Biological Exposure Indices," American Conference of Governmental Industrial Hygienists (ACGIH), 2009.
- 20 List of Hazardous Substances and Reportable Quantities (RQ) , Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), U.S. Environmental Protection Agency, 40 CFR 302, Table 302.4, July 1, 2008.
- 3 Office of Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 49 CFR 172.101-Hazardous Materials Table, October 1, 2008.
- 4 "NIOSH Pocket Guide to Chemical Hazards," National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, No. 2005-149, September 2005.
- 6 "Environmental Hazardous Substance List," New Jersey Department of Environmental Protection, N.J.A.C. 7:1G-2, as printed in the Community Right to Know Survey Instruction Book, 2008.

Hazardous Substance List (Chapter 323) (PA-RTK)

Name acc. to inventory	CAS No	Classification
COPPER	7440-50-8	*, E

Legend

- * Any compound of this substance is also an environmental hazard
- E Environmental hazard

Hazardous Substance List (RI-RTK)

Not listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Not listed

Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

Not listed

SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2024-06-17

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)

Copper Oxide

Version number: 1.0

Abbr.	Descriptions of used abbreviations
DOT	Department of Transportation (USA)
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IARC Mono-graphs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LHS	Lower hazard substance
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
ppm	Parts per million
STEL	Short-term exposure limit
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

Copper Oxide

Version number: 1.0

Responsible for the safety data sheet

Chemical Regulatory Compliance Com- Telephone: +1 (630) 410-1660
pany e-Mail: GHS@crc-us.com
Jasper, GA Website: www.crc-us.com
USA

Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.