

Safety Data Sheet

Cd,Cu,Zn,Pb,Ni,Cr,Co quality control in soil

Version : V2.0.0.1

Report No. : BWS0293-2016-MSDS-EP

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*Prepared in accordance with EU REACH Regulation (REACH 1907/2006 with amendment 2020/878)

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	Cd,Cu,Zn,Pb,Ni,Cr,Co quality control in soil
Cat No.	BWS0293-2016
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable
REACH Registration Number	-
UFI	No information available

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

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	Weiyel Inc
Address of the company	Hedian Light Industrial Park, Chengguan Town, Shangcheng County, Xinyang City, Henan Province, China
Post code	465350
Telephone number	010-58103678
Fax number	010-84840368
E-mail address	info@weiyel.com

1.4 Emergency telephone number

Emergency telephone number	010-58103678
Opening hours	24h

2 Hazards identification

2.1 CLP classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707

Hazardous to the aquatic environment - long-term (chronic) hazard	Category 3
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2.2 Label elements

Hazard pictograms	Not applicable
Signal word	Not applicable

Hazard statements

H412	Harmful to aquatic life with long lasting effects
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Precautionary statements

◆ Prevention

P273	Avoid release to the environment.
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◆ Response

Response	Not applicable
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◆ Storage

Storage	Not applicable
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◆ Disposal

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

◆ Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Cadmium	Not applicable
Copper	Not applicable
Zinc	Not applicable
Lead	Not applicable
Nickel	Not applicable
Chromium	Not applicable
Cobalt	Not applicable

◆ Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605]
Cadmium	Insufficient information, temporarily unable to evaluate
Copper	Insufficient information, temporarily unable to evaluate
Zinc	Insufficient information, temporarily unable to evaluate
Lead	Insufficient information, temporarily unable to evaluate
Nickel	Insufficient information, temporarily unable to evaluate
Chromium	Insufficient information, temporarily unable to evaluate
Cobalt	Insufficient information, temporarily unable to evaluate

◆ Other

Other	Not applicable.
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3 Composition/information on ingredients**3.1 Substance**

Not applicable

3.2 Mixture

Component	Weight % content(or range)	Classification according to Regulation (EC) No. 1272/2008 with amendment 2023/707 [CLP]	Specific Conc. Limits, M-factors
soil CAS : - EC : - Index No. : -	99.95595	No information available	-
Cadmium CAS : 7440-43-9 EC : 231-152-8 Index No. : 048-002-00-0	0.00291	Acute Toxicity - Inhalation, Category 2, H330; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Reproductive toxicity, Category 2, H361; Specific target organ toxicity - repeated exposure, Category 1, H372; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Copper CAS : 7440-50-8 EC : 231-159-6 Index No. : 029-026-00-0	0.00379	Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	M=10;M(Chronic)=1
Zinc CAS : 7440-66-6 EC : 231-175-3 Index No. : 030-001-00-1	0.00372	Pyrophoric solids, Category 1, H250; Substances and mixtures which, in contact with water, emit flammable gases, Category 1, H260; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
Lead CAS : 7439-92-1 EC : 231-100-4 Index No. : 082-013-00-1	0.00423	Reproductive toxicity, Category 1A, H360; Reproductive Toxicity - effects on or via lactation, Additional, H362; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	H360A:C ≥ 0.03%;M=10;M(Chronic)=100
Nickel CAS : 7440-02-0 EC : 231-111-4 Index No. : 028-002-00-7	0.00343	Sensitization - skin, Category 1, H317; Carcinogenicity, Category 2, H351; Specific target organ toxicity - repeated exposure, Category 1, H372	-
Chromium CAS : 7440-47-3 EC : 231-157-5 Index No. : -	0.02302	Not Classified	-
Cobalt CAS : 7440-48-4 EC : 231-158-0 Index No. : 027-001-00-9	0.00295	Sensitization - skin, Category 1, H317; Sensitization - respiratory, Category 1, H334; Germ cell mutagenicity, Category 2, H341; Carcinogenicity, Category 1B, H350; Reproductive toxicity, Category 1B, H360; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 4, H413	-

4 First-aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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4.3 Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable for surrounding area.
Unsuitable extinguishing media	There is no restriction on the type of extinguisher which may be used.

5.2 Specific hazards arising from the substance or mixture

1	Development of hazardous combustion gases or vapor possible in the event of fire.
2	May expansion or decompose explosively when heated or involved in fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment,do not breathe dust/fume.

6.2 Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
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2	Discharge into the environment must be avoided.
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6.3 Methods and materials for containment and cleaning up

1	Cut off the source of the leak as much as possible.
2	Keep leaks in a ventilated place.
3	Isolation of contaminated areas and restrictions on access.
4	It is recommended that emergency personnel wear dust masks.
5	Collect the spill with a clean shovel and place it in a clean, dry, loosely closed container and move the container away from the leak.
6	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

6.4 Reference to other sections

1	Personal Protective Equipment advice is contained in Section 8 of the SDS.
2	Disposal considerations advice is contained in Section 13 of the SDS.

7 Handling and storage

7.1 Precautions for safe handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Keep away from heat/sparks/open flames/ hot surfaces.
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◆ Measures to prevent aerosol and dust generation

1	Avoid formation of dust and aerosols.
2	Provide appropriate exhaust ventilation at places where dust is formed.

◆ Advice on general occupational hygiene

1	Wash hands and face after using the substances.
2	Replace the contaminated clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

7.3 Specific end use(s)

1	In addition to use mentioned in the Section 1.2, unforeseen other specific end uses.
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8 Exposure controls/personal protection

8.1 Control parameters

◆ Occupational exposure limit values

Component	Country/Region	Limit value - Eight hours	Limit value - Short term
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		ppm	mg/m ³	ppm	mg/m ³
Cadmium	Japan - JSOH(2024–2025)	-	0.05	-	-
	Permissible exposure standards for workers in the workplace	-	0.05(as Cd)	-	0.15(as Cd)
	European Union	-	0.001	-	-
	France	-	0.05	-	-
	Germany (AGS)	-	0.002	-	0.016
	Italy	-	0.001	-	-
Copper	Permissible exposure standards for workers in the workplace	-	1(dust and mist)	-	2(dust and mist)
	Permissible exposure standards for workers in the workplace	-	0.2(fume)	-	0.6(fume)
	France	-	0.2(fume, respirable fraction)	-	-
	Germany (DFG)	-	0.01	-	0.02
	United Kingdom	-	1(dusts and mists)	-	2
	Austria	-	1(inhalable aerosol)	-	-
Zinc	Germany (DFG)	-	2	-	4
	Switzerland	-	0.1(respirable aerosol)	-	0.4(respirable aerosol)
Lead	Japan - JSOH(2024–2025)	-	0.03(as Pb)	-	-
	Permissible exposure standards for workers in the workplace	-	0.05	-	0.15
	European Union	-	0.15	-	-
	France	-	0.1(inhalable aerosol)	-	-
	Germany (AGS)	-	0.15	-	-
	Germany (DFG)	-	0.004	-	0.032
Nickel	Japan - JSOH(2024–2025)	-	1	-	-
	Permissible exposure standards for workers in the workplace	-	1	-	2

	France	-	1	-	-
	Germany (AGS)	-	0.006	-	0.048
	United Kingdom	-	-	-	3
	Austria	-	0.5	-	2
Chromium	Japan - JSOH(2024–2025)	-	0.5	-	-
	Permissible exposure standards for workers in the workplace	-	1	-	2
	European Union	-	2	-	-
	France	-	2	-	-
	Germany (AGS)	-	2	-	2
	Italy	-	0.5	-	-
	Cobalt	Japan - JSOH(2024–2025)	-	0.05	-
Permissible exposure standards for workers in the workplace		-	0.05(dust and fume)	-	0.15(dust and fume)
Germany (AGS)		-	0.005	-	0.04
United Kingdom		-	0.1	-	-
Austria		-	0.1	-	0.4
Belgium		-	0.02	-	-

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
Cadmium	SCOEL(EU)	Cd	2 µg/g creatinine	Not strictly regulated	
		Cadmium(Creatinine in urine)	5µg/g	Not critical	
		Cadmium(Blood)	5µg/L	Not critical	
Lead	SCOEL(EU)	Not strictly regulated	0.3mg/L	Not strictly regulated	
		Lead(Blood)	200µg/L	Not critical	
Nickel	USA -ACGIH	Nickel(Urine)	5µg/L	End of shift at end of work week	
Chromium	USA -ACGIH	Total chromium(Urine)	0.7µg/L	End of shift at end of work week	
Cobalt	USA -ACGIH	Cobalt(Urine)	15µg/L	End of shift at end of work week	

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 and GBZ/T 160 series standard Determination of toxic substances in workplace air.

◆ Derived No effect level (DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
soil	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Cadmium	Inhalation	No data available	No data available	0.004 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Copper	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Zinc	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Lead	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Nickel	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Chromium	Inhalation	No data available	No data available	0.5 mg/m ³	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Cobalt	Inhalation	No data available	No data available	0.04 mg/m ³	0.0541 mg/m ³
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
Cadmium	190 ng/L	1.14 µg/L	20 µg/L	1.8 mg/kg sediment dw	640 µg/kg sediment dw	No hazard identified	900 µg/kg soil dw	160 µg/kg food
Copper	6.3 µg/L	5.2 µg/L	230 µg/L	87 mg/kg sediment dw	676 mg/kg sediment dw	No hazard identified	65 mg/kg soil dw	No potential for bioaccumulation
Zinc	14.4	7.2 µg/L	100 µg/L	146.9	162.2	No	83.1	No

	µg/L			mg/kg sediment dw	mg/kg sediment dw	hazard identified	mg/kg soil dw	potential for bioaccum ulation
Lead	2.4 µg/L	3.3 µg/L	100 µg/L	186 mg/kg sediment dw	168 mg/kg sediment dw	No hazard identified	212 mg/kg soil dw	10.9 mg/kg food
Chromium	6.5 µg/L	No data available	No data available	205.7 mg/kg sediment dw	No data available	No hazard identified	21.1 mg/kg soil dw	No potential for bioaccum ulation
Cobalt	1.06 µg/L	2.36 µg/L	370 µg/L	53.8 mg/kg sediment dw	69.8 mg/kg sediment dw	No hazard identified	10.9 mg/kg soil dw	No potential for bioaccum ulation

Note 1:

A: Freshwater; B: Seawater; C: Sewage treatment plant; D: Sediment (freshwater); E: Sediment (seawater); F: Air; G: Soil; H: Secondary poisoning(Hazard for Predators).

Note 2:

The PNEC values of the remaining components not shown in the product are not available yet.

8.2 Exposure controls

8.2.1 Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

8.2.2 Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear appropriate chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear appropriate chemical protective clothing and chemical resistant shoes.

8.2.3 Environmental exposure controls

Environmental exposure controls	No information available
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9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Yellow to dark brown, powder
Colour	Yellow to dark brown, powder
Odor	No information available
Odor threshold	No information available

pH	No information available
Melting point/freezing point(°C)	1900 (Chromium)
Initial boiling point and boiling range(°C)	2642 (Chromium)
Flash point(Closed cup, °C)	Not applicable
Evaporation rate	Not applicable
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit : No information available ; Lower limit : No information available
Vapor pressure	1atm (2482°C,Chromium)
Vapor density(Air = 1)	1.79 (Chromium)
Relative density(Water=1)	7.15 (Chromium)
Solubility	Insoluble in water (Chromium)
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(°C)	No information available
Decomposition temperature(°C)	No information available
Kinematic viscosity	Not applicable
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	No information available

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Information with regard to physical hazard classes	No information available
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9.2.2 Other safety characteristics

Other safety characteristics	No information available
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10 Stability and reactivity

Stability and reactivity

10.1 Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
10.2 Chemical stability	Stable under proper operation and storage conditions.
10.3 Possibility of hazardous reactions	No information available.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Halogen, interhalogen, strong oxidant, water and acids.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 with amendment 2023/707

Cd,Cu,Zn,Pb,Ni,Cr,Co quality control in soil

Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

| Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Cadmium	2330mg/kg(Rat)	No information available	No information available
Cobalt	6171mg/kg(Rat)	No information available	No information available

| Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
soil	Not Listed	Not Listed
Cadmium	Category 1	Category K
Copper	Not Listed	Not Listed
Zinc	Not Listed	Not Listed
Lead	Category 2B	Category R
Nickel	Category 2B	Category R
Chromium	Category 3	Not Listed
Cobalt	Category 2A	Category R

| 11.2 Information on other hazards

| 11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
Cadmium	No information available
Copper	No information available
Zinc	No information available
Lead	No information available
Nickel	No information available
Chromium	No information available
Cobalt	No information available

| 11.2.2 Other Information

Other Information	See Section 11.1
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12 Ecological information

12.1 Toxicity

Acute aquatic toxicity

Component	Fish	Crustaceans	Algae or other aquatic plants
Zinc	LC ₅₀ : 2.01mg/L (96h)(Fish)	EC ₅₀ : 1.33mg/L (48h)(Crustaceans)	No information available
Copper	LC ₅₀ : 0.665mg/L (96h)(Fish)	EC ₅₀ : 0.02mg/L (48h)(Crustaceans)	ErC ₅₀ : 7.9mg/L (96h)(Algae)
Cadmium	LC ₅₀ : 7.8mg/L (96h)(Fish)	EC ₅₀ : 0.58mg/L (48h)(Crustaceans)	No information available
Cobalt	LC ₅₀ : 1.5mg/L (96h)(Fish)	No information available	No information available
Lead	LC ₅₀ : 2.8mg/L (96h)(Fish)	No information available	No information available
Chromium	LC ₅₀ : 40.5mg/L (96h)(Fish)	EC ₅₀ : 0.07mg/L (48h)(Crustaceans)	No information available
Nickel	LC ₅₀ : 40mg/L (96h)(Fish)	EC ₅₀ : 1mg/L (48h)(Crustaceans)	No information available

Chronic aquatic toxicity

Chronic aquatic toxicity	No information available
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12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Nickel	Low	Low

12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Nickel	Low	Log Kow=-1.38

12.4 Mobility in soil

Component	log Koc	Remark
Nickel	1.155	

12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Cadmium	Not applicable
Copper	Not applicable
Zinc	Not applicable
Lead	Not applicable
Nickel	Not applicable
Chromium	Not applicable
Cobalt	Not applicable

12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
Cadmium	No information available
Copper	No information available
Zinc	No information available
Lead	No information available
Nickel	No information available
Chromium	No information available
Cobalt	No information available

12.7 Other adverse effects

	No information available
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13 Disposal considerations

13.1 Waste treatment methods

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	Not applicable
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IMDG-CODE

IMDG-CODE	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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IATA-DGR

IATA-DGR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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UN-ADR

UN-ADR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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Special precautions for user

	Transport vehicles should be equipped with the appropriate variety and quantity of fire equipment and emergency equipment leakage during transport. Before transport, should be preceded by checking whether container integrity, sealing. The transport unit must be placarded and marked in accordance with relevant transporting requirements.
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Maritime transport in bulk according to IMO instruments

◆ Transport in bulk according to Annex II of MARPOL and the IBC code	
	Not Available
◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code	
	Not Available

◆ Transport in bulk in accordance with the IGC Code

Not Available

15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****International chemical inventory**

Component	A	B	C	D	E	F	G	H	I	J	K	L	M
soil	×	×	×	×	×	×	×	×	×	×	×	×	×
Cadmium	√	√	√	√	√	√	√	√	×	√	√	√	√
Copper	√	√	√	√	√	√	√	√	×	√	√	√	√
Zinc	√	√	√	√	√	√	√	√	×	√	√	√	√
Lead	√	√	√	√	√	√	√	√	×	√	√	√	√
Nickel	√	√	√	√	√	√	√	√	×	√	√	√	√
Chromium	√	√	√	√	√	√	√	√	×	√	√	√	√
Cobalt	√	√	√	√	√	√	√	√	×	√	√	√	√

- [A] China Inventory of Existing Chemical Substances(IECSC)
 [B] European Inventory of Existing Commercial Chemical Substances(EC inventory)
 [C] United States Toxic Substances Control Act Inventory(TSCA)
 [D] Canadian Domestic Substances List(DSL)
 [E] New Zealand Inventory of Chemicals(NZIoC)
 [F] Philippines Inventory of Chemicals and Chemical Substances(PICCS)
 [G] Korea Existing Chemicals Inventory(KECL)
 [H] Australian. Inventory of Industrial Chemical (AIICS)
 [I] Japan Inventory of Existing & New Chemical Substances(ENCS)
 [J] Thailand Existing Chemicals Inventory(TECI)
 [K] Mexico National Inventory of Chemical Substances (INSQ)
 [L] Russia Inventory of Existing Substances(DRAFT)
 [M] Inventory of Existing Chemical Substances in Taiwan, China (TCSI)

List of Chemical Substances under International Conventions

Component	A	B	C
soil	×	×	×
Cadmium	×	×	×
Copper	×	×	×
Zinc	×	×	×
Lead	×	×	×
Nickel	×	×	×
Chromium	×	×	×
Cobalt	×	×	×

- [A] The Montreal Protocol on Substances that Deplete the Ozone Layer
 [B] Stockholm Convention on Persistent Organic Pollutants (POPs)
 [C] Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade

European chemical inventory

Component	A	B	C	D	E	F	G	H	I
soil	x	x	x	x	x	x	x	x	x
Cadmium	√	x	√	√	√	x	√	x	x
Copper	x	x	x	√	√	x	x	x	x
Zinc	x	x	x	√	√	x	x	x	x
Lead	√	x	√	√	√	x	√	x	x
Nickel	x	x	√	√	√	x	√	x	x
Chromium	x	x	x	√	√	x	x	x	x
Cobalt	x	x	√	√	√	x	x	x	x

- [A] Candidate list of Substances of Very High Concern for authorization under EU REACH regulation
[B] Substances requiring authorisation under EU REACH regulation
[C] Substances restricted under EU REACH
[D] Pre-registered substances under EU REACH
[E] Registered substances under EU REACH
[F] Substance Evaluation – CoRAP under EU REACH
[G] List of priority substances under EU water policy (Directive 2455/2001/EC)
[H] Substances subject to POPs Regulation
[I] Substances proposed as POPs

Note:

- “√” Indicates that the substance included in the regulations.
“x” No data or not included in the regulations.

German water hazard class(WGK)

Component	WGK	Remark
Cadmium	WGK 3	
Copper	WGK 2	
Zinc	nwg	
Nickel	WGK 1	
Chromium	nwg	
Cobalt	WGK 1	

- 【WGK 1】 slightly hazardous to water
【WGK 2】 obviously hazardous to water
【WGK 3】 highly hazardous to water
【nwg】 non-hazardous to water
【awg】 hazardous to water in general

German technical instructions on air quality control(TA LUFT)

Component	TA LUFT	Remark
Cadmium	Chapter 5.2.7.1.1 Carcinogenic substances. Class I. As minimum requirement, the following values are in all not allowed to be exceeded in the exhaust gas: Mass flow: 0.15 g/hr or Mass conc.: 0.05 mg/m ³ . Specified as Cd.	
Copper	Chapter 5.2.2 Inorganic dusts. Class III. Also with the presence of several substances of the same class, the	

	following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:5 g/hr or Mass conc.:1 mg/m ³ . Specified as Cu.	
Zinc	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to exceed the following values:Mass flow:0.20 kg/hr or Mass conc.:20 mg/m ³ The mass per unit volume of 0.15 g/m ³ in exhaust gas is not allowed to be exceeded also on observance or lower deviation of a mass flow of 0.20 kg/h.For emission sources that exceed the mass flow rate of 0.40 kg/h, the mass concentration in waste gas the mass concentration must not exceed 10 mg/m ³ .	
Lead	Chapter 5.2.2 Inorganic dusts. Class II. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr or Mass conc.:0,5 mg/m ³ . Specified as Pb.	
Nickel	Chapter 5.2.2 Inorganic dusts. Class II. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr or Mass conc.:0,5 mg/m ³ . Specified as Ni.	
Chromium	Chapter 5.2.2 Inorganic dusts. Class III. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:5 g/hr or Mass conc.:1 mg/m ³ . Specified as Cr.	
Cobalt	Chapter 5.2.2 Inorganic dusts. Class II. Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:Mass flow:2,5 g/hr or Mass conc.:0,5 mg/m ³ . Specified as Co.	

German technical rules for hazardous substances(TRGS)

Component	TRGS	Remark
Cadmium	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	pyrophoric

Copper	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Zinc	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Lead	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 560 TRGS 505	
Nickel	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Chromium	TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
Cobalt	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 406 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724 TRGS 560	

15.2 Chemical safety assessment

	No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.
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16 Other information

Information on revision

Creation Date	2026/01/17
Revision Date	-
Reason for revision	-

Reference

- [1] IPCS: The International Chemical SafetyCards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer

DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.