

# Cr6+ and heavy metals quality control in soil



Version : V2.0.0.1

Report No. : BWS0425-2016-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	Cr6+ and heavy metals quality control in soil
Cat No.	BWS0425-2016
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
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<b>Signal word</b>	Not applicable
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### Hazard statements

<b>H412</b>	Harmful to aquatic life with long lasting effects
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### Precautionary statements

#### ◆ Prevention

<b>P273</b>	Avoid release to the environment.
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#### ◆ Response

<b>Response</b>	Not applicable
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#### ◆ Storage

<b>Storage</b>	Not applicable
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#### ◆ Disposal

<b>P501</b>	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]
Chromium	Not applicable
Arsenic	Not applicable
Cadmium	Not applicable
Chromium	Not applicable
Copper	Not applicable
Mercury	Insufficient information, temporarily unable to evaluate
Nickel	Not applicable
Lead	Not applicable
Zinc	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]
Chromium	Insufficient information, temporarily unable to evaluate
Arsenic	Insufficient information, temporarily unable to evaluate
Cadmium	Insufficient information, temporarily unable to evaluate
Chromium	Insufficient information, temporarily unable to evaluate
Copper	Insufficient information, temporarily unable to evaluate
Mercury	Insufficient information, temporarily unable to evaluate
Nickel	Insufficient information, temporarily unable to evaluate
Lead	Insufficient information, temporarily unable to evaluate
Zinc	Insufficient information, temporarily unable to evaluate

## ◆ Other

Not applicable.

**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
<b>soil</b> CAS : - EC : - Index No. : -	99.92	No information available	-
<b>Chromium</b> CAS : 7440-47-3 EC : 231-157-5 Index No. : -	0.00160	Not Classified	-
<b>Arsenic</b> CAS : 7440-38-2 EC : 231-148-6 Index No. : 033-001-00-X	0.00345	Acute Toxicity - Oral, Category 3, H301; Acute Toxicity - Inhalation, Category 3, H331; Hazardous to the aquatic environment - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	-
<b>Cadmium</b> CAS : 7440-43-9 EC : 231-152-8 Index No. : 048-002-00-0	0.000064	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	-
<b>Chromium</b> CAS : 7440-47-3 EC : 231-157-5 Index No. : -	0.0325	Not Classified	-
<b>Copper</b> CAS : 7440-50-8 EC : 231-159-6 Index No. : 029-026-00-0	0.0073	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
<b>Mercury</b> CAS : 7439-97-6 EC : 231-106-7 Index No. : 080-001-00-0	0.0000427	Acute Toxicity - Inhalation, Category 2, H330; Reproductive toxicity, Category 1B, H360; 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	-

<b>Nickel</b> CAS : 7440-02-0 EC : 231-111-4 Index No. : 028-002-00-7	0.0054	Sensitization - skin, Category 1, H317; Carcinogenicity, Category 2, H351; Specific target organ toxicity - repeated exposure, Category 1, H372	-
<b>Lead</b> CAS : 7439-92-1 EC : 231-100-4 Index No. : 082-013-00-1	0.0084	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
<b>Zinc</b> CAS : 7440-66-6 EC : 231-175-3 Index No. : 030-001-00-1	0.0167	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	-

## 4 First-aid measures

### 4.1 Description of first aid measures

<b>General advice</b>	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
<b>Skin contact</b>	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.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
<b>Inhalation</b>	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.
<b>Protecting of first-aiders</b>	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

<b>Suitable extinguishing media</b>	Use extinguishing media suitable for surrounding area.
<b>Unsuitable extinguishing media</b>	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.
2	Discharge into the environment must be avoided.

### 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	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
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	-	-
Arsenic	Japan - JSOH(2024–2025)	-	0.003( individual excess lifetime risk of cancer 10 <sup>-3</sup> )	-	-
	Permissible exposure standards for workers in the workplace	-	0.01(as As)	-	0.03(as As)
	Germany (AGS)	-	0.0083	-	0.066
	United Kingdom	-	0.1	-	-
	Austria	-	0.1(inhalable aerosol)	-	0.4(inhalable aerosol)
	Belgium	-	0.01	-	-
Cadmium	Japan - JSOH(2024–2025)	-	0.05	-	-
	Permissible exposure standards for workers in the	-	0.05(as Cd)	-	0.15(as Cd)

	workplace				
	European Union	-	0.001	-	-
	France	-	0.05	-	-
	Germany (AGS)	-	0.002	-	0.016
	Italy	-	0.001	-	-
<b>Chromium</b>	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	-	-
<b>Copper</b>	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)	-	-
<b>Mercury</b>	Japan - JSOH(2024–2025)	-	0.025(vapor)	-	-
	Permissible exposure standards for workers in the workplace	-	0.05	-	0.15
	European Union	-	0.02	-	-
	France	-	0.02	-	-
	Germany (AGS)	-	0.02	-	0.16
	Germany (DFG)	-	0.02	-	0.16
<b>Nickel</b>	Japan - JSOH(2024–2025)	-	1	-	-
	Permissible exposure standards for	-	1	-	2

	workers in the workplace				
	France	-	1	-	-
	Germany (AGS)	-	0.006	-	0.048
	United Kingdom	-	-	-	3
	Austria	-	0.5	-	2
<b>Lead</b>	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
<b>Zinc</b>	Germany (DFG)	-	2	-	4
	Switzerland	-	0.1(respirable aerosol)	-	0.4(respirable aerosol)

◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
<b>Chromium</b>	USA -ACGIH	Total chromium(Urine)	0.7µg/L	End of shift at end of work week	
<b>Arsenic</b>	USA -ACGIH	Inorganic arsenic, plus methylated metabolites, as As(Creatinine in urine)	15µg/g	End of work week	
		Inorganic arsenic, plus methylated metabolites, as As(Creatinine in urine)	15µg/g	End of shift	
<b>Cadmium</b>	SCOEL(EU)	Cd	2 µg/g creatinine	Not strictly regulated	
		Cadmium(Creatinine in urine)	5µg/g	Not critical	
		Cadmium(Blood )	5µg/L	Not critical	
<b>Chromium</b>	USA -ACGIH	Total chromium(Urine)	0.7µg/L	End of shift at end of work week	
<b>Mercury</b>	SCOEL(EU)	Hg/blood	10 µg/L	Not strictly regulated	
		Hg/urine	30 µg/g creatinine	Not strictly regulated	

		Mercury(Creatinine in urine)	20µg/g	Prior to shift	
<b>Nickel</b>	USA -ACGIH	Nickel(Urine)	5µg/L	End of shift at end of work week	
<b>Lead</b>	SCOEL(EU)	Not strictly regulated	0.3mg/L	Not strictly regulated	
		Lead(Blood)	200µg/L	Not critical	

◆ 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)
<b>soil</b>	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
<b>Chromium</b>	Inhalation	No data available	No data available	0.5 mg/m <sup>3</sup>	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
<b>Arsenic</b>	Inhalation	No data available	No data available	No data available	0.004 mg/m <sup>3</sup>
	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
<b>Cadmium</b>	Inhalation	No data available	No data available	0.004 mg/m <sup>3</sup>	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
<b>Chromium</b>	Inhalation	No data available	No data available	0.5 mg/m <sup>3</sup>	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
<b>Copper</b>	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
<b>Mercury</b>	Inhalation	No data available	No data available	No data available	0.02 mg/m <sup>3</sup>
	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
<b>Nickel</b>	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
<b>Lead</b>	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
<b>Zinc</b>	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

◆ Predicted No Effect Concentration (PNEC)

Component	A	B	C	D	E	F	G	H
<b>Chromium</b>	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 bioaccumulation
<b>Arsenic</b>	5.6 µg/L	4.7 µg/L	61 µg/L	70.5 mg/kg sediment dw	35.7 mg/kg sediment dw	No hazard identified	2.9 mg/kg soil dw	1 mg/kg food
<b>Cadmium</b>	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
<b>Chromium</b>	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 bioaccumulation
<b>Copper</b>	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
<b>Mercury</b>	57.4 ng/L	67.2 ng/L	2.25 µg/L	9.3 mg/kg sediment dw	9.3 mg/kg sediment dw	No data available	22 µg/kg soil dw	No data available
<b>Lead</b>	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
<b>Zinc</b>	14.4 µg/L	7.2 µg/L	100 µg/L	146.9 mg/kg sediment dw	162.2 mg/kg sediment dw	No hazard identified	83.1 mg/kg soil dw	No potential for bioaccumulation

**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.
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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	brown solid
Colour	brown solid
Odor	No information available
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	No information available
Initial boiling point and boiling range(°C)	No information available
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	Not applicable
Vapor density(Air = 1)	Not applicable
Relative density(Water=1)	No information available
Solubility	No information available
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. Metal acetylide, halogen, interhalogen, halogen oxides, nitric acid, nitrous oxide, nitrates, nitrites, halogen oxyacid salts, chromates, permanganates, inorganic peroxides, metal oxides and peroxyformic acid.
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

Cr6+ and heavy metals 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 <sub>50</sub> (oral)	LD <sub>50</sub> (dermal)	LC <sub>50</sub> (inhalation,4h)
Cadmium	2330mg/kg(Rat)	No information available	No information available
Arsenic	763mg/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

<b>Chromium</b>	Category 3	Not Listed
<b>Arsenic</b>	Category 1	Category K
<b>Cadmium</b>	Category 1	Category K
<b>Chromium</b>	Category 3	Not Listed
<b>Copper</b>	Not Listed	Not Listed
<b>Mercury</b>	Category 3	Not Listed
<b>Nickel</b>	Category 2B	Category R
<b>Lead</b>	Category 2B	Category R
<b>Zinc</b>	Not Listed	Not Listed

## 11.2 Information on other hazards

### 11.2.1 Endocrine disrupting properties

Component	Endocrine disrupting properties
<b>Chromium</b>	No information available
<b>Arsenic</b>	No information available
<b>Cadmium</b>	No information available
<b>Chromium</b>	No information available
<b>Copper</b>	No information available
<b>Mercury</b>	No information available
<b>Nickel</b>	No information available
<b>Lead</b>	No information available
<b>Zinc</b>	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
<b>Copper</b>	LC <sub>50</sub> : 0.665mg/L (96h)(Fish)	EC <sub>50</sub> : 0.02mg/L (48h)(Crustaceans)	ErC <sub>50</sub> : 7.9mg/L (96h)(Algae)
<b>Cadmium</b>	LC <sub>50</sub> : 7.8mg/L (96h)(Fish)	EC <sub>50</sub> : 0.58mg/L (48h)(Crustaceans)	No information available
<b>Arsenic</b>	LC <sub>50</sub> : 12.6mg/L (96h)(Fish)	No information available	ErC <sub>50</sub> : 25.2mg/L (72h)(Algae)
<b>Nickel</b>	LC <sub>50</sub> : 40mg/L (96h)(Fish)	EC <sub>50</sub> : 1mg/L (48h)(Crustaceans)	No information available
<b>Zinc</b>	LC <sub>50</sub> : 2.01mg/L (96h)(Fish)	EC <sub>50</sub> : 1.33mg/L (48h)(Crustaceans)	No information available
<b>Chromium</b>	LC <sub>50</sub> : 40.5mg/L	EC <sub>50</sub> : 0.07mg/L	No information available

	(96h)(Fish)	(48h)(Crustaceans)	
<b>Mercury</b>	LC <sub>50</sub> : 0.16mg/L (96h)(Fish)	No information available	No information available
<b>Chromium</b>	LC <sub>50</sub> : 40.5mg/L (96h)(Fish)	EC <sub>50</sub> : 0.07mg/L (48h)(Crustaceans)	No information available
<b>Lead</b>	LC <sub>50</sub> : 2.8mg/L (96h)(Fish)	No information available	No information available

### Chronic aquatic toxicity

<b>Chronic aquatic toxicity</b>	No information available
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### 12.2 Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
<b>Nickel</b>	Low	Low

### 12.3 Bioaccumulative potential

Component	Bioaccumulative potential	Comments
<b>Nickel</b>	Low	Log Kow=-1.38

### 12.4 Mobility in soil

Component	log Koc	Remark
<b>Nickel</b>	1.155	

### 12.5 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
<b>Chromium</b>	Not applicable
<b>Arsenic</b>	Not applicable
<b>Cadmium</b>	Not applicable
<b>Chromium</b>	Not applicable
<b>Copper</b>	Not applicable
<b>Mercury</b>	Insufficient information, temporarily unable to evaluate
<b>Nickel</b>	Not applicable
<b>Lead</b>	Not applicable
<b>Zinc</b>	Not applicable

### 12.6 Endocrine disrupting properties

Component	Endocrine disrupting properties
<b>Chromium</b>	No information available
<b>Arsenic</b>	No information available
<b>Cadmium</b>	No information available
<b>Chromium</b>	No information available
<b>Copper</b>	No information available

<b>Mercury</b>	No information available
<b>Nickel</b>	No information available
<b>Lead</b>	No information available
<b>Zinc</b>	No information available

### 12.7 Other adverse effects

	No information available
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## 13 Disposal considerations

### 13.1 Waste treatment methods

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

## 14 Transport information

### Label and Mark

<b>Transporting Label</b>	Not applicable
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### IMDG-CODE

<b>IMDG-CODE</b>	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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### IATA-DGR

<b>IATA-DGR</b>	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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### UN-ADR

<b>UN-ADR</b>	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
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- ◆ Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

	Not Available
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- ◆ Transport in bulk in accordance with the IGC Code

	Not Available
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## 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	x	x	x	x	x	x	x	x	x	x	x	x	x
Chromium	√	√	√	√	√	√	√	√	√	√	√	√	√
Arsenic	√	√	√	√	√	√	√	√	√	√	√	√	√
Cadmium	√	√	√	√	√	√	√	√	√	√	√	√	√
Chromium	√	√	√	√	√	√	√	√	√	√	√	√	√
Copper	√	√	√	√	√	√	√	√	√	√	√	√	√
Mercury	√	√	√	√	√	√	√	√	√	√	√	√	√
Nickel	√	√	√	√	√	√	√	√	√	√	√	√	√
Lead	√	√	√	√	√	√	√	√	x	√	√	√	√
Zinc	√	√	√	√	√	√	√	√	x	√	√	√	√

- 【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	x	x	x
Chromium	x	x	x
Arsenic	x	x	x
Cadmium	x	x	x
Chromium	x	x	x
Copper	x	x	x
Mercury	x	x	√
Nickel	x	x	x
Lead	x	x	x
Zinc	x	x	x

- 【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
Chromium	x	x	x	√	√	x	x	x	x
Arsenic	x	x	√	√	√	x	x	x	x
Cadmium	√	x	√	√	√	x	√	x	x
Chromium	x	x	x	√	√	x	x	x	x
Copper	x	x	x	√	√	x	x	x	x
Mercury	x	x	√	√	√	x	√	x	x
Nickel	x	x	√	√	√	x	√	x	x
Lead	√	x	√	√	√	x	√	x	x
Zinc	x	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
Chromium	nwg	
Arsenic	WGK 3	
Cadmium	WGK 3	
Chromium	nwg	
Copper	WGK 2	
Mercury	WGK 3	
Nickel	WGK 1	
Zinc	nwg	

【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
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 <sup>3</sup> . Specified as Cr.	
<b>Arsenic</b>	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 <sup>3</sup> . Specified as As.	
<b>Cadmium</b>	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 <sup>3</sup> . Specified as Cd.	
<b>Chromium</b>	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 <sup>3</sup> . Specified as Cr.	
<b>Copper</b>	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 <sup>3</sup> . Specified as Cu.	
<b>Mercury</b>	Chapter 5.2.2 Inorganic dusts. Class I. 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:0,05 g/hr or Mass conc.:0,01 mg/m <sup>3</sup> . Specified as Hg.	
<b>Nickel</b>	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 <sup>3</sup> . Specified as Ni.	
<b>Lead</b>	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 <sup>3</sup> . Specified as Pb.	
<b>Zinc</b>	Chapter 5.2.1 Overall Dust, including fine dust. The emissions of dust in the exhaust gas are not allowed to	

	<p>exceed the following values: Mass flow: 0.20 kg/hr or Mass conc.: 20 mg/m<sup>3</sup> The mass per unit volume of 0.15 g/m<sup>3</sup> 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<sup>3</sup>.</p>	
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### German technical rules for hazardous substances (TRGS)

Component	TRGS	Remark
<b>Chromium</b>	TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
<b>Arsenic</b>	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 800	
<b>Cadmium</b>	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
<b>Chromium</b>	TRGS 402 TRGS 500 TRGS 509 TRGS 510 TRGS 800 TRGS 720 TRGS 721 TRGS 722 TRGS 723 TRGS 724	
<b>Copper</b>	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	
<b>Mercury</b>	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510	
<b>Nickel</b>	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	
<b>Lead</b>	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS 401 TRGS 500 TRGS 509 TRGS 510 TRGS 560 TRGS 505	
<b>Zinc</b>	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	

### 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	2025/12/31
Revision Date	-
Reason for revision	-

### Reference

- [1] IPCS: The International Chemical Safety Cards (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 <sub>50</sub>	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD <sub>50</sub>	Lethal Dose 50%	NTP	National Toxicology Program
EC <sub>50</sub>	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC <sub>x</sub>	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P <sub>ow</sub>	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.