

## Safety Data Sheet

# Greenish-yellow colorimetric solution GY4

Version : V2.0.0.1

Report No. : BWQ0465-2016-MSDS-EP

Creation Date : 2025/12/19

Revision Date : -



\*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	Greenish-yellow colorimetric solution GY4
Cat No.	BWQ0465-2016
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

Carcinogenicity	Category 1B
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### 2.2 Label elements

Hazard pictograms	
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Signal word	<b>Danger</b>
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## Hazard statements

H350i	May cause cancer by inhalation
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## Precautionary statements

### Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

### Response

P308+P313	IF exposed or concerned: Get medical advice/attention.
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### Storage

P405	Store locked up.
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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]
Iron(III) chloride hexahydrate	Insufficient information, temporarily unable to evaluate
Copper(II) sulfate pentahydrate	Insufficient information, temporarily unable to evaluate
Cobalt dichloride	Not applicable
Hydrogen chloride	Not PBT/vPvB
Water	Insufficient information, temporarily unable to evaluate

### Results of endocrine disrupting properties assessment

Component	Results of endocrine disrupting properties assessment [according to (EU) No 2017/2100 or (EU) No 2018/605]
Iron(III) chloride hexahydrate	Insufficient information, temporarily unable to evaluate
Copper(II) sulfate pentahydrate	Insufficient information, temporarily unable to evaluate
Cobalt dichloride	Insufficient information, temporarily unable to evaluate
Hydrogen chloride	Insufficient information, temporarily unable to evaluate
Water	Insufficient information, temporarily unable to evaluate

### 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
<b>Iron(III) chloride hexahydrate</b> CAS : 10025-77-1 EC : 600-047-2 Index No. : -	0.0216	Acute Toxicity - Oral, Category 4, H302; Skin Corrosion/Irritation, Category 2, H315; Serious eye damage/irritation, Category 1, H318	-
<b>Copper(II) sulfate pentahydrate</b> CAS : 7758-99-8 EC : 616-477-9 Index No. : 029-023-00-4	0.0624	Acute Toxicity - Oral, Category 4, H302; Serious eye damage/irritation, Category 1, H318; 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;H302: ATE=481mg/kg bw
<b>Cobalt dichloride</b> CAS : 7646-79-9 EC : 231-589-4 Index No. : 027-004-00-5	0.0595	Acute Toxicity - Oral, Category 4, H302; 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 - short-term (acute) hazard, Category 1, H400; Hazardous to the aquatic environment - long-term (chronic) hazard, Category 1, H410	H350B:C ≥ 0.01%;M=10
<b>Hydrogen chloride</b> CAS : 7647-01-0 EC : 231-595-7 Index No. : 017-002-00-2	1.0000	Skin corrosion/irritation, Category 1B, H314; Specific target organ toxicity - single exposure; respiratory tract irritation, Category 3, H335	H314B:C≥25% H315:10% ≤C<25% H319:10%≤C<25 % H335:C≥10%
<b>Water</b> CAS : 7732-18-5 EC : 231-791-2 Index No. : -	98.8565	Not Classified	-

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

#### 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	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
4	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
5	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

#### 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	Not applicable.
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◆ 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>
<b>Copper(II) sulfate pentahydrate</b>	Finland	-	0.02	-	-
<b>Cobalt dichloride</b>	Japan - JSOH(2024-2025)	-	0.05 (as Co)	-	-
	Finland	-	0.02	-	-
	Spain	-	0.02	-	-
	Sweden	-	0.02	-	-
<b>Hydrogen chloride</b>	Japan - JSOH(2024-2025)	-	-	-	-
	Permissible exposure standards for workers in the workplace	-	-	-	-
	European Union	5	8	10	15
	France	-	-	5	7.6
	Germany (AGS)	2	3	4	6

	Germany (DFG)	2	3	4	6
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◆ Biological limit values

Component	Standard	Biological monitoring index	Biological limits value	Sampling time	Remark
<b>Cobalt dichloride</b>	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)
<b>Iron(III) chloride hexahydrate</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>Copper(II) sulfate pentahydrate</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>Cobalt dichloride</b>	Inhalation	No data available	No data available	0.0881 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>Hydrogen chloride</b>	Inhalation	No data available	No data available	8 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>Water</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>Cobalt dichloride</b>	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 bioaccumulation
<b>Hydrogen chloride</b>	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No data available	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.
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	Greenish-yellow liquid
Colour	Greenish-yellow liquid
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)	>35
Flash point(Closed cup, °C)	No information available
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[% (v/v)]	Upper limit : No information available ; Lower limit : No information available
Vapor pressure	No information available
Vapor density(Air = 1)	No information available

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	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Particle characteristics	Not applicable

## 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	In contact with magnesium, sodium, potassium, copper and other metals or metal acetylene may cause a fire or explosion. In contact with active metals (alkali metals, Na, Ca etc.) causes a reaction and release hydrogen.
10.4 Conditions to avoid	Incompatible materials, heat, flame and spark.
10.5 Incompatible materials	Magnesium, sodium, potassium, copper, oxidants, acetylene metal compounds, alcohols, alkanes, hydrogen and water. Alkali, sodium, calcium, and other active metal, halogen, metal oxide, nonmetal oxide, acyl halide and metal phosphide.
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

Greenish-yellow colorimetric solution GY4	
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)
Copper(II) sulfate pentahydrate	300mg/kg(Rat)	> 2000mg/kg(Rat)	No information available
Hydrogen chloride	900mg/kg(Rabbit)	No information available	No information available
Cobalt dichloride	766mg/kg(Rat)	> 2000mg/kg(Rat)	No information available

**Carcinogenicity**

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Iron(III) chloride hexahydrate	Not Listed	Not Listed
Copper(II) sulfate pentahydrate	Not Listed	Not Listed
Cobalt dichloride	Category 2A(Remark 1)	Category R
Hydrogen chloride	Category 3	Not Listed
Water	Not Listed	Not Listed

Remark 1: Soluble cobalt(II) salts

**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

Component	Endocrine disrupting properties
Iron(III) chloride hexahydrate	No information available
Copper(II) sulfate pentahydrate	No information available
Cobalt dichloride	No information available
Hydrogen chloride	No information available
Water	No information available

**11.2.2 Other Information**

Other Information	See Section 11.1

**12 Ecological information****12.1 Toxicity****Acute aquatic toxicity**

Component	Fish	Crustaceans	Algae or other aquatic plants
Copper(II) sulfate pentahydrate	LC <sub>50</sub> : 0.31mg/L (96h)(Fish)	EC <sub>50</sub> : 0.06mg/L (48h)(Crustaceans)	ErC <sub>50</sub> : 0.05mg/L (96h)(Algae)
Hydrogen chloride	LC <sub>50</sub> : 20.5mg/L (96h)(Fish)	No information available	No information available
Cobalt dichloride	LC <sub>50</sub> : 1.5mg/L (96h)(Fish)	EC <sub>50</sub> : 1.49mg/L (48h)(Crustaceans)	ErC <sub>50</sub> : 9.02mg/L (96h)(Algae)

**Chronic aquatic toxicity**

Chronic aquatic toxicity	No information available
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**12.2 Persistence and degradability**

Component	Persistence (water/soil)	Persistence (air)
Iron(III) chloride hexahydrate	High	High
Copper(II) sulfate pentahydrate	High	High
Cobalt dichloride	High	High

**12.3 Bioaccumulative potential**

Component	Bioaccumulative potential	Comments
Iron(III) chloride hexahydrate	High	BCF=9622
Copper(II) sulfate pentahydrate	Low	Log Kow=-2.2002
Cobalt dichloride	Low	Log Kow=0.85

**12.4 Mobility in soil**

Component	log Koc	Remark
Iron(III) chloride hexahydrate	1.545	
Copper(II) sulfate pentahydrate	0.787	
Cobalt dichloride	1.375	

**12.5 Results of PBT and vPvB assessment**

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Iron(III) chloride hexahydrate	Insufficient information, temporarily unable to evaluate
Copper(II) sulfate pentahydrate	Insufficient information, temporarily unable to evaluate
Cobalt dichloride	Not applicable
Hydrogen chloride	Not PBT/vPvB
Water	Insufficient information, temporarily unable to evaluate

**12.6 Endocrine disrupting properties**

Component	Endocrine disrupting properties
Iron(III) chloride hexahydrate	No information available
Copper(II) sulfate pentahydrate	No information available
Cobalt dichloride	No information available
Hydrogen chloride	No information available

Water	No information available
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### 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
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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
Iron(III) chloride	√	×	×	×	√	√	×	√	×	√	×	√	√

hexahydrate													
<b>Copper(II) sulfate pentahydrate</b>	√	×	×	×	√	√	√	√	×	√	×	√	√
<b>Cobalt dichloride</b>	√	√	√	√	√	√	√	√	√	√	√	√	√
<b>Hydrogen chloride</b>	√	√	√	√	√	√	√	√	√	√	√	√	√
<b>Water</b>	√	√	√	√	√	√	√	√	√	√	√	√	√

- [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
<b>Iron(III) chloride hexahydrate</b>	×	×	×
<b>Copper(II) sulfate pentahydrate</b>	×	×	×
<b>Cobalt dichloride</b>	×	×	×
<b>Hydrogen chloride</b>	×	×	×
<b>Water</b>	×	×	×

- [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
<b>Iron(III) chloride hexahydrate</b>	×	×	×	√	×	×	×	×	×
<b>Copper(II) sulfate pentahydrate</b>	×	×	×	√	×	×	×	×	×
<b>Cobalt dichloride</b>	√	×	√	√	√	×	×	×	×
<b>Hydrogen chloride</b>	×	×	×	√	√	×	×	×	×
<b>Water</b>	×	×	×	√	×	×	×	×	×

- [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
<b>Copper(II) sulfate pentahydrate</b>	WGK 3	
<b>Cobalt dichloride</b>	WGK 3	
<b>Hydrogen chloride</b>	WGK 1	The regular and professional use of this substance for drinking water treatment, surface water remediation or waste water treatment is not restricted by this classification.

[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
<b>Copper(II) sulfate pentahydrate</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>Cobalt dichloride</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 Co.	
<b>Hydrogen chloride</b>	Chapter 5.2.4 Gaseous inorganic substances. Class III. Following values are not allowed to be exceeded in the exhaust gas: Mass flow: 0,15 kg/hr or Mass conc.: 30 mg/m <sup>3</sup> . Specified as hydrogen chlorid.	

**German technical rules for hazardous substances(TRGS)**

Component	TRGS	Remark
<b>Copper(II) sulfate pentahydrate</b>	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 500 TRGS 509 TRGS 510	
<b>Cobalt dichloride</b>	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 401 TRGS 406 TRGS 410 TRGS 500 TRGS 509 TRGS 510 TRGS 560	
<b>Hydrogen chloride</b>	TRGS 201 TRGS 400 TRGS 555 TRGS 600 TRGS 402 TRGS	

	401 TRGS 407 TRGS 745/TRBS 3145 TRGS 746/TRBS 3146 TRGS 510 TRGS 500	
<b>Water</b>	TRGS 500 TRGS 509 TRGS 510	

## 15.2 Chemical safety assessment

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

## 16 Other information

### Information on revision

<b>Creation Date</b>	2025/12/19
<b>Revision Date</b>	-
<b>Reason for revision</b>	-

### 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 <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.