

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 1 of 11

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

1.1. Product identifier

Copper Bath cyan. JE550

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

Use of the substance/mixture

Plating agents and metal surface treating agents

1.3. Details of the supplier of the safety data sheet

Company name: Jentner Plating Technology GmbH
Street: Johann-Staib-Strasse 2
Place: D-75179 Pforzheim
Telephone: +49 (0)7231 418094 0 Telefax: +49 (0)7231 418094 77
e-mail: info@jentner.de
Contact person: Department of Chemistry
Internet: www.jentner.de
Responsible Department: Poison Information Center of the University of Freiburg.

1.4. Emergency telephone number:

0049 (0)761 19240 - 24 h german and english

Further Information

Reserved for industrial and professional use.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Acute Tox. 2; H300
Acute Tox. 2; H330
Acute Tox. 4; H312
Skin Corr. 1A; H314
Eye Dam. 1; H318
Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

Potassium cyanide
Copper (I) cyanide

Signal word: Danger

Pictograms:



Hazard statements

H300+H330 Fatal if swallowed or if inhaled.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 2 of 11

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P264 Wash ... thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P284 Wear respiratory protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P310 Immediately call a POISON CENTER/doctor.
 P321 Specific treatment (see 4 on this label).
 P302+P352 IF ON SKIN: Wash with plenty of
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P321 Specific treatment (see ... on this label).
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P310 Immediately call a POISON CENTER/doctor.
 P320 Specific treatment is urgent (see 4 on this label).
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor.
 P391 Collect spillage.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents/container to an officially registered waste disposal company .

Special labelling of certain mixtures

EUH031 Contact with acids liberates toxic gas.

Labelling of packages where the contents do not exceed 125 ml**Signal word:** Danger**Pictograms:****Hazard statements**

H300+H330-H314

Precautionary statements

P260-P264-P270-P271-P280-P284-P301+P330+P331-P310-P321-P303+P361+P353-P321-P304+P340-P310-
 P320-P305+P351+P338-P310-P403+P233-P405-P501

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 3 of 11

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
151-50-8	Potassium cyanide			3-5 %
	205-792-3			
	Acute Tox. 1, Acute Tox. 1, Skin Corr. 1A, Aquatic Acute 1, Aquatic Chronic 1; H330 H300 H314 H400 H410 EUH031			
544-92-3	Copper (I) cyanide			3-5 %
	208-883-6			
	Acute Tox. 1, Acute Tox. 2, Aquatic Acute 1; H300 H310 H400			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
151-50-8	205-792-3	Potassium cyanide	3-5 %
	inhalation: ATE = 0,05 mg/l (vapours); inhalation: ATE = 0,005 mg/l (dusts or mists); oral: LD50 = 5 mg/kg Aquatic Chronic 1; H410: M=10		
544-92-3	208-883-6	Copper (I) cyanide	3-5 %
	dermal: ATE = 50 mg/kg; oral: LD50 = 1270 mg/kg		

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

First aider: Pay attention to self-protection!

After inhalation

After inhaling vapours, first symptoms of poisoning may develop hours later, so always consult a doctor.

No direct artificial respiration to be given by first aider.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Put victim at rest, cover with a blanket and keep warm. Do not leave affected person unattended. In case of breathing difficulties administer oxygen. If victim is at risk of losing consciousness, position and transport on their side.

After contact with eyes

If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist. Protect uninjured eye.

After ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

after ingestion: Headaches and dizziness may occur, proceeding to fainting or unconsciousness; large doses may result in coma and death.

4.3. Indication of any immediate medical attention and special treatment needed

The following first aid and treatment recommendations should already be available to all first responders and doctors, before the work with cyanides. It can be used for First Aid performance. Act quickly and keep calm.

Self-respect. Remove soiled or soaked clothing immediately and dispose safely. Leave the danger area.

Possible signs of poisoning: headache, dizziness, drowsiness, nausea, convulsions, unconsciousness,

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 4 of 11

respiratory disorders, respiratory arrest, cardiac arrest. dispose of safely. Concerned from the danger area.
Possible signs of poisoning: headache, dizziness, drowsiness, nausea, convulsions, unconsciousness,
respiratory disorders, respiratory arrest, cardiac arrest.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Extinguishing powder. Foam.

Unsuitable extinguishing media

Extinguishing media which must not be used for safety reasons: Water spray. Carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

Potassium oxide; Nitrogen oxides; Hydrogen cyanide, cyanogen. Decomposition begins at 200 ° C

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

The product itself does not burn. Do not allow water used to extinguish fire to enter drains or waterways.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Use personal protective equipment as required.

6.2. Environmental precautions

Do not empty into drains; dispose of this material and its container in a safe way.

6.3. Methods and material for containment and cleaning up

Other information

Take up mechanically, placing in appropriate containers for disposal.

Retain contaminated washing water and dispose it.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

When using do not eat, drink, smoke, sniff.

The product should be handled only by trained personnel.

Advice on general occupational hygiene

Do not eat, drink, smoke or sneeze at the workplace.

Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep locked up and out of the reach of children.

Keep only in the original container in a cool, well-ventilated place away from acids.

Hints on joint storage

Do not store together with: Acid.

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 5 of 11

Further information on storage conditions

Store in a place accessible by authorized persons only.

7.3. Specific end use(s)

Plating agents and metal surface treating agents

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
151-50-8	Potassium cyanide (as cyanide)	-	1		TWA (8 h)	WEL
		-	5		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
151-50-8	Potassium cyanide			
Worker DNEL, long-term		dermal	systemic	0,14 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	4,03 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	0,94 mg/m ³
Worker DNEL, acute		inhalation	systemic	12,5 mg/m ³

PNEC values

CAS No	Substance	Value
151-50-8	Potassium cyanide	
Freshwater		0,001 mg/l
Freshwater (intermittent releases)		0,005 mg/l
Marine water		0,001 mg/l
Freshwater sediment		0,004 mg/kg
Marine sediment		0,004 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,05 mg/l
Soil		0,007 mg/kg

8.2. Exposure controls**Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Safety glasses.

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 6 of 11

Hand protection

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Skin protection

Use personal protection equipment.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	liquid
Colour:	clear
Odour:	bitter almonds.

Changes in the physical state

Boiling point or initial boiling point and boiling range:	ca. 98 °C
Sublimation point:	not determined

Flammability

Solid/liquid:	not applicable
---------------	----------------

Explosive properties

not explosive.

pH-Value (at 20 °C):	11 - 12
Viscosity / dynamic:	not determined
Water solubility:	unlimited

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:	not determined
Density (at 20 °C):	1,05 g/cm ³
Relative vapour density:	not determined

9.2. Other information**Information with regard to physical hazard classes**

Oxidizing properties
Not oxidising.

Other safety characteristics

Solvent separation test:	not applicable
Solid content:	not determined
Evaporation rate:	not determined

Further Information**SECTION 10: Stability and reactivity****10.3. Possibility of hazardous reactions**

Contact with acids liberates very toxic gas. Hydrocyanic acid (hydrocyanic acid).

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 7 of 11

10.4. Conditions to avoid

Thermal decomposition can lead to the escape of irritating gases and vapours.

10.5. Incompatible materials

Acids and oxidizing agents (chlorates, nitrates, Permanganate, iodine, peroxides, etc.). Under the action of acids (pH 3) hydrocyanic acid is released, which is highly toxic and flammable and can form explosive mixtures with air.

10.6. Hazardous decomposition products

Hydrocyanic acid (hydrocyanic acid). Ammonia.

Further information

Absorbs carbon dioxide from the air, forming hydrogen cyanide

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Acute toxicity**

Fatal if swallowed.

Toxic in contact with skin or if inhaled.

ATEmix calculated

ATE (oral) 14,3 mg/kg; ATE (dermal) 1666,7 mg/kg; ATE (inhalation vapour) 1,00 mg/l; ATE (inhalation dust/mist) 0,100 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
151-50-8	Potassium cyanide				
	oral	LD50 5 mg/kg	Rat		
	inhalation vapour	ATE 0,05 mg/l			
	inhalation dust/mist	ATE 0,005 mg/l			
544-92-3	Copper (I) cyanide				
	oral	LD50 1270 mg/kg	Rat	Gestis	
	dermal	ATE 50 mg/kg			

Irritation and corrosivity

Causes severe skin burns and eye damage.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Specific effects in experiment on an animal

LD50 7,5 mg/kg Rat oral.

LD50 33 mg/kg Rapid dermal.

The statement is derived from the properties of the components.

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 8 of 11

SECTION 12: Ecological information**12.1. Toxicity**

Cyanide poisons are strong for all living things.

CAS No	Chemical name			[h] [d]	Species	Source	Method
151-50-8	Potassium cyanide						
	Acute fish toxicity	LC50 mg/l	0,57	96 h	Oncorhynchus mykiss (Rainbow trout)	Arch. Environ. Cont am.	
	Acute crustacea toxicity	EC50 mg/l	0,25	48 h	Daphnia pulex (water flea)	Gestis	

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

12.4. Mobility in soil

If product enters soil, it will be mobile and may contaminate groundwater.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

No information available.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Refer to manufacturer or supplier for information on recovery or recycling.

List of Wastes Code - used product

110301 WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY; sludges and solids from tempering processes; wastes containing cyanide; hazardous waste

Contaminated packaging

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

Non-contaminated packages may be recycled.

SECTION 14: Transport information**Land transport (ADR/RID)****14.1. UN number or ID number:**

UN 1935

14.2. UN proper shipping name:

CYANIDE SOLUTION, N.O.S. (Potassium cyanide, copper cyanide)

14.3. Transport hazard class(es):

6.1

14.4. Packing group:

II

Hazard label:

6.1



Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 9 of 11

Classification code: T4
 Special Provisions: 274 525
 Limited quantity: 100 mL
 Transport category: 2
 Hazard No: 60
 Tunnel restriction code: D/E

Other applicable information (land transport)

Special provisions: 274 525

E4

Transport category: 2

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1935
14.2. UN proper shipping name: CYANIDE SOLUTION, N.O.S. (Potassium cyanide, copper cyanide)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1



Classification code: T4
 Special Provisions: 274 525 802
 Limited quantity: 100 mL

Other applicable information (inland waterways transport)

E4

Marine transport (IMDG)

14.1. UN number or ID number: UN 1935
14.2. UN proper shipping name: CYANIDE SOLUTION, N.O.S. (copper-and potassium cyanides)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1



Marine pollutant: P
 Special Provisions: 274
 Limited quantity: 100 mL
 EmS: F-A, S-A

Other applicable information (marine transport)

Special provisions: -

E4

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1935
14.2. UN proper shipping name: CYANIDE SOLUTION, N.O.S. (copper-and potassium cyanides)
14.3. Transport hazard class(es): 6.1
14.4. Packing group: II
 Hazard label: 6.1



Special Provisions: A3

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 10 of 11

Limited quantity Passenger:	1 L	
IATA-packing instructions - Passenger:		654
IATA-max. quantity - Passenger:		5 L
IATA-packing instructions - Cargo:		661
IATA-max. quantity - Cargo:		60 L

Other applicable information (air transport)

E4

: Y641

Special provisions: A3

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes



Danger releasing substance:	Potassium cyanide Copper (I) cyanide
-----------------------------	---

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III): H1 ACUTE TOXIC

Additional information: E1

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
--------------------------	---

Water hazard class (D):	3 - highly hazardous to water
-------------------------	-------------------------------

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 2,9.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Safety Data Sheet

according to UK REACH Regulation

Copper Bath cyan. JE550

Revision date: 15.02.2023

Product code: 83

Page 11 of 11

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Acute Tox. 2; H300	Calculation method
Acute Tox. 2; H330	Calculation method
Acute Tox. 4; H312	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Aquatic Chronic 1; H410	Calculation method

Relevant H and EUH statements (number and full text)

H300	Fatal if swallowed.
H300+H330	Fatal if swallowed or if inhaled.
H310	Fatal in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH031	Contact with acids liberates toxic gas.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)