

Micron Gold Plating Bath JE250

Revision date: 11.07.2019

Product code: 38

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

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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**

BfR Produktnummer: 6271256

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Acute toxicity: Acute Tox. 3

Acute toxicity: Acute Tox. 4

Acute toxicity: Acute Tox. 4

Carcinogenicity: Carc. 1A

Reproductive toxicity: Repr. 1A

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Toxic in contact with skin.

Harmful if swallowed.

Harmful if inhaled.

May cause cancer by inhalation.

May damage fertility.

Harmful to aquatic life with long lasting effects.

2.2. Label elements**Regulation (EC) No. 1272/2008****Hazard components for labelling**

Potassium dicyanoaurate(I)

Cobalt (II) citrate

Signal word: Danger**Pictograms:**



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Hazard statements

- H300 Fatal if swallowed.
- H332 Harmful if inhaled.
- H350i May cause cancer by inhalation.
- H360F May damage fertility.
- H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- 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.
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P321 Specific treatment (see 4.1 on this label).
- P330 Rinse mouth.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P312 Call a POISON CENTER/doctor if you feel unwell.
- P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 Call a POISON CENTER/doctor if you feel unwell.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P405 Store locked up.

Special labelling of certain mixtures

- EUH208 Contains Cobalt (II) citrate. May produce an allergic reaction.
 Restricted to professional users.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
13967-50-5	Potassium dicyanoaurate(I)			max. 1,5%
	237-748-4			
	Acute Tox. 1, Acute Tox. 1, Acute Tox. 2, Aquatic Acute 1, Aquatic Chronic 1; H310 H300 H330 H400 H410 EUH032			
866-81-9	Cobalt (II) citrate			0,3 %
	212-751-3			
	Carc. 1A, Muta. 2, Repr. 1A, Resp. Sens. 1, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360F H334 H317 H400 H410			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary. In case of inhaling spray mist, consult a physician.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately. After contact with skin, wash immediately with plenty of water and soap.

After contact with eyes

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

After ingestion

Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Call a physician immediately.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.
Foam. Dry extinguishing powder. Carbon dioxide (CO₂). Sand

5.2. Special hazards arising from the substance or mixture

Non-flammable.

5.3. Advice for firefighters

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

Additional information

Suppress gases/vapours/mists with water spray jet. 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**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Keep away from unprotected people.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal. Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

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Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Handle and open container with care.
General Precautions for safe handling of chemicals.

Advice on protection against fire and explosion

The product itself does not burn.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep only in the original container in a cool, well-ventilated place.

Hints on joint storage

No special measures are necessary.

7.3. Specific end use(s)

Plating agents and metal surface treating agents

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
13967-50-5	Potassium dicyanoaurate(I)			
Worker DNEL, acute		inhalation	systemic	0,071 mg/m ³
Worker DNEL, acute		dermal	systemic	0,1 mg/kg bw/day

PNEC values

CAS No	Substance	Value
13967-50-5	Potassium dicyanoaurate(I)	
Freshwater		0,000003 mg/l

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Wash hands and face before breaks and after work

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and take a shower if necessary. When using do not eat or drink.

Avoid contact with skin and eyes.

Eye/face protection

Wear eye protection/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. 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. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Thorough skin-cleansing after handling the product. After cleaning apply high-fat content skin care cream.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Use personal protection equipment.

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

Physical state:	liquid
Colour:	red violet
Odour:	odourless
pH-Value (at 20 °C):	3,8 - 4,2
Changes in the physical state	
Melting point:	not determined
Initial boiling point and boiling range:	ca. 105 °C
Sublimation point:	not determined
Flammability	
Solid:	not applicable
Gas:	not applicable
Explosive properties	
not explosive.	
Lower explosion limits:	
Upper explosion limits:	
Auto-ignition temperature	
Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined
Oxidizing properties	
Not oxidising.	
Density (at 20 °C):	1,08 g/cm ³
Water solubility:	very soluble
Solubility in other solvents	
not determined	
Partition coefficient:	not determined
Vapour density:	not determined
Evaporation rate:	not determined

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Solvent separation test: not applicable

9.2. Other information

Solid content: not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

No information available.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No information available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

ATEmix calculated

ATE (oral) 33,3 mg/kg; ATE (dermal) 333,3 mg/kg; ATE (inhalation aerosol) 3,333 mg/l

Acute toxicity

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
13967-50-5	Potassium dicyanoaurate(I)				
	oral	LD50 5 mg/kg	Ratte		
	dermal	ATE 5 mg/kg			
	inhalation vapour	ATE 0,5 mg/l			
	inhalation aerosol	ATE 0,05 mg/l			
866-81-9	Cobalt (II) citrate				
	oral	LD50 6730 mg/kg	rat		

Irritation and corrosivity

Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

Sensitising effects

Enthält Tricobaltdicitrat. Kann allergische Reaktionen hervorrufen.

Carcinogenic/mutagenic/toxic effects for reproduction

Kann bei Einatmen Krebs erzeugen. (Tricobaltdicitrat)

Kann die Fruchtbarkeit beeinträchtigen. (Tricobaltdicitrat)

Keimzell-Mutagenität: Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

STOT-repeated exposure

Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

Aspiration hazard

Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards

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arising from the substance or mixture!

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

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

110198 WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY; wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising); other wastes containing hazardous substances; hazardous waste

Contaminated packagingHandle 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:**

UN 3287

14.2. UN proper shipping name:TOXIC LIQUID, INORGANIC, N.O.S. (potassium dicyanoaurate(I),
Tricobalt dicitrate)**14.3. Transport hazard class(es):**

6.1

14.4. Packing group:

III

Hazard label:

6.1



Classification code:

T4

Special Provisions:

274

Limited quantity:

5 L

Transport category:

2

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Hazard No: 60

Tunnel restriction code: E

Other applicable information (land transport)

E1

Inland waterways transport (ADN)**14.1. UN number:** UN 3287**14.2. UN proper shipping name:** TOXIC LIQUID, INORGANIC, N.O.S. (potassium dicyanoaurate(I), Tricobalt dicitrate)**14.3. Transport hazard class(es):** 6.1**14.4. Packing group:** III

Hazard label: 6.1



Classification code: T4

Special Provisions: 274 802

Limited quantity: 5 L

Other applicable information (inland waterways transport)

E1

Marine transport (IMDG)**14.1. UN number:** UN 3287**14.2. UN proper shipping name:** TOXIC LIQUID, INORGANIC, N.O.S. (potassium dicyanoaurate(I), cobalt citrate)**14.3. Transport hazard class(es):** 6.1**14.4. Packing group:** III

Hazard label: 6.1



Special Provisions: 223, 274

Limited quantity: 5 L

EmS: F-A, S-A

Other applicable information (marine transport)

Special provisions: 223, 274, 944

E1

Air transport (ICAO-TI/IATA-DGR)**14.1. UN number:** UN 3287**14.2. UN proper shipping name:** TOXIC LIQUID, INORGANIC, N.O.S. (potassium dicyanoaurate(I), cobalt citrate)**14.3. Transport hazard class(es):** 6.1**14.4. Packing group:** III

Hazard label: 6.1



Special Provisions: A3 A4 A137

Limited quantity Passenger: 2 L

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IATA-packing instructions - Passenger:	655
IATA-max. quantity - Passenger:	60 L
IATA-packing instructions - Cargo:	663
IATA-max. quantity - Cargo:	220 L

Other applicable information (air transport)

E1
: Y611
Special provisions: A3 A4 A137
: Y642

14.6. Special precautions for user

Warning: Toxic.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

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

Employment restrictions:	Observe restrictions to employment for juvenils 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 contaminating class (D):	2 - clearly water contaminating

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):
1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16.

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%

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 3; H311	Calculation method
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H332	Calculation method
Carc. 1A; H350i	Calculation method
Repr. 1A; H360F	Calculation method
Aquatic Chronic 3; H412	Calculation method

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Relevant H and EUH statements (number and full text)

H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.
EUH208	Contains Cobalt (II) citrate. May produce an allergic reaction.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. 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.)