

**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 1 of 10

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

Micron Gold Plating Bath JE250

**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. 2

Acute toxicity: Acute Tox. 3

Acute toxicity: Acute Tox. 4

Carcinogenicity: Carc. 1A

Reproductive toxicity: Repr. 1A

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Fatal if swallowed.

Toxic in contact with skin.

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:**



**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 2 of 10

**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**

## Micron Gold Plating Bath JE250

Revision date: 11.07.2019

Product code: 38

Page 3 of 10

### General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

### 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

Observe risk of aspiration if vomiting occurs. 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 (CO<sub>2</sub>). 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  
Disposal: see section 13

**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 4 of 10

**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, long-term			0,05 mg/kg bw/day
	Worker DNEL, acute			4,5 mg/kg bw/day

**PNEC values**

CAS No	Substance	Value
13967-50-5	Potassium dicyanoaurate(I)	
	Freshwater	0,00003 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

**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 5 of 10

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
<b>Changes in the physical state</b>	
Melting point:	not determined
Initial boiling point and boiling range:	ca. 105 °C
Sublimation point:	not determined
Flash point:	not determined
<b>Flammability</b>	
Solid:	not applicable
Gas:	not applicable
<b>Explosive properties</b>	
not explosive.	
Lower explosion limits:	not determined
Upper explosion limits:	not determined
<b>Auto-ignition temperature</b>	
Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined
<b>Oxidizing properties</b>	
Not oxidising.	
Vapour pressure:	not determined
Density (at 20 °C):	1,08 g/cm <sup>3</sup>
Water solubility:	very soluble
<b>Solubility in other solvents</b>	
not determined	
Partition coefficient:	not determined



**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 6 of 10

Viscosity / dynamic: not determined  
 Flow time: not determined  
 Vapour density: not determined  
 Evaporation rate: not determined  
 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.

**10.4. Conditions to avoid**

No decomposition if used as directed.

**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**

**Acute toxicity**

Fatal if swallowed.  
 Toxic in contact with skin.  
 Harmful if inhaled.

**ATEmix calculated**

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
13967-50-5	Potassium dicyanoaurate(I)				
	oral	LD50 29 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**

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

**Sensitising effects**

Contains Cobalt (II) citrate. May produce an allergic reaction.

**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 7 of 10

**Carcinogenic/mutagenic/toxic effects for reproduction**

May cause cancer by inhalation. (Cobalt (II) citrate)

May damage fertility. (Cobalt (II) citrate)

Germ cell mutagenicity: 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.

**Additional information on tests**

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

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself. Contaminated packages must be completely emptied and can be re-used following proper cleaning.

**SECTION 14: Transport information****Land transport (ADR/RID)**

**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 8 of 10

**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  
 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



**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 9 of 10

**Air transport (ICAO-TI/IATA-DGR)**

<b>14.1. UN number:</b>	UN 3287
<b>14.2. UN proper shipping name:</b>	TOXIC LIQUID, INORGANIC, N.O.S. (potassium dicyanoaurate(I), cobalt citrate)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	III
Hazard label:	6.1



Special Provisions:	A3 A4 A137
Limited quantity Passenger:	2 L
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
Skin resorption/Sensitization:	Permeates easily through outer skin and causes poisoning. Causes allergic hypersensitivity reactions.

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

**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

**Micron Gold Plating Bath JE250**

Revision date: 11.07.2019

Product code: 38

Page 10 of 10

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. 2; H300	Calculation method
Acute Tox. 3; H311	Calculation method
Acute Tox. 4; H332	Calculation method
Carc. 1A; H350i	Calculation method
Repr. 1A; H360F	Calculation method
Aquatic Chronic 3; H412	Calculation method

**Relevant H and EUH statements (number and full text)**

H300	Fatal 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.)*