

**Gold Plating Bath JE218 - RED**

Revision date: 29.08.2019

Product code: 129

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

Gold Plating Bath JE218 - RED

**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: 6265773

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

Hazard categories:

Acute toxicity: Acute Tox. 1

Acute toxicity: Acute Tox. 2

Acute toxicity: Acute Tox. 2

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Fatal in contact with skin.

Fatal if swallowed.

Fatal if inhaled.

Toxic to aquatic life with long lasting effects.

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

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

**Signal word:** Danger**Pictograms:****Hazard statements**

H300+H310+H330

Fatal if swallowed, in contact with skin or if inhaled.

H411

Toxic to aquatic life with long lasting effects.

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**Precautionary statements**

|           |   |
|-----------|---|
| P260      | Do not breathe dust/fume/gas/mist/vapours/spray.                                  |
| P262      | Do not get in eyes, on skin, or on clothing.                                      |
| P270      | Do not eat, drink or smoke when using this product.                               |
| P273      | Avoid release to the environment.   |
| P280      | Wear protective gloves/protective clothing/eye protection/face protection.        |
| P284      | Wear respiratory 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.  |
| P310      | Immediately call a POISON CENTER/doctor.  |
| P321      | Specific treatment (see 4.1 on this label).                                       |
| 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.        |
| P310      | Immediately call a POISON CENTER/doctor.  |
| P320      | Specific treatment is urgent (see 4.1 on this label).                             |
| 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. |

**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  |              |          |          |
| -      | salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex |              |          | 15-25 %  |
|        | -   | 006-007-00-5 |          |          |
|        | Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Aquatic Acute 1, Aquatic Chronic 1; H310 H330 H300 H400 H410 EUH032   |              |          |          |

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

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

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

**After inhalation**

Provide fresh air. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

**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: Water and soap.

In case of skin reactions, consult a physician.

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**After contact with eyes**

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**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**

Symptoms of poisoning may develop several hours following exposure. Victim should be under medical observation for at least 48 hours after exposure.

**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. Extinguishing powder. Water spray. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media**

Strong water jet

**5.2. Special hazards arising from the substance or mixture**

Non-flammable. Do not inhale explosion and combustion gases.

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. In case of fire: Wear self-contained breathing apparatus.

**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**

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Wear personal protection equipment. Remove persons to safety.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

**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. Provide adequate ventilation. Retain contaminated washing water and dispose it. Treat the recovered material as prescribed in the section on waste disposal.

**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**

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**Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation as well as local exhaustion at critical locations. Keep only in the original container in a cool, well-ventilated place.

**Advice on protection against fire and explosion**

Non-combustible liquids

**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 container tightly closed in a cool, well-ventilated place.

**Hints on joint storage**

Do not store together with: Acids

**Further information on storage conditions**

Keep locked up and out of reach of children.

**7.3. Specific end use(s)**

Plating agents and metal surface treating agents

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****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. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**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. 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**

Wear suitable protective clothing.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

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**Environmental exposure controls**

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

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

|                      |                           |
|----------------------|---------------------------|
| Physical state:      | liquid                    |
| Colour:              | blue                      |
| Odour:               | Bitter almonds / Ammonia. |
| pH-Value (at 20 °C): | 10,5                      |

**Changes in the physical state**

|  |                |
|--|----------------|
| Melting point:                           | not determined |
| Initial boiling point and boiling range: | 90 °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:          | 1,15 g/cm <sup>3</sup> |
| Water solubility: | highly soluble.        |

**Solubility in other solvents**

not determined

|                        |                |
|------------------------|----------------|
| Partition coefficient: | 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**

The mixture is chemically stable under recommended conditions of storage, use and temperature.

**10.3. Possibility of hazardous reactions**

Contact with acids liberates very toxic gas.

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**10.4. Conditions to avoid**

Gas/vapours, harmful.

**10.5. Incompatible materials**

Acid

**10.6. Hazardous decomposition products**

Ammonia. Hydrocyanic acid (hydrocyanic acid).

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute toxicity**

Fatal if swallowed, in contact with skin or if inhaled.

**ATEmix calculated**

ATE (oral) 25,0 mg/kg; ATE (dermal) 25,0 mg/kg; ATE (inhalation vapour) 2,50 mg/l; ATE (inhalation aerosol) 0,250 mg/l

| CAS No | Chemical name   |               |         |        |        |
|--------|---|---------------|---------|--------|--------|
|        | Exposure route  | Dose          | Species | Source | Method |
| -      | salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex |               |         |        |        |
|        | oral  | ATE 5 mg/kg   |         |        |        |
|        | dermal  | ATE 5 mg/kg   |         |        |        |
|        | inhalation vapour   | ATE 0,5 mg/l  |         |        |        |
|        | inhalation aerosol  | ATE 0,05 mg/l |         |        |        |

**Irritation and corrosivity**

strongly irritant.

**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**

Harmful: danger of serious damage to health by prolonged exposure in contact with skin.

**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**

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

**12.2. Persistence and degradability**

not determined

**12.3. Bioaccumulative potential**

not determined

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**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 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.

Consult supplier about waste disposal.

**Waste disposal number of waste from residues/unused products**

110113 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); degreasing 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. Handle contaminated packages in the same way as the substance itself.

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

Limited quantity:

100 mL

Excepted quantity:

E4

Transport category:

2

Hazard No:

60

Tunnel restriction code:

D/E

**Inland waterways transport (ADN)****14.1. UN 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

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Hazard label:

6.1



Classification code:

T4

Special Provisions:

274 525 802

Limited quantity:

100 mL

Excepted quantity:

E4

**Marine transport (IMDG)****14.1. UN 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



Marine pollutant:

P

Special Provisions:

274

Limited quantity:

100 mL

Excepted quantity:

E4

EmS:

F-A, S-A

**Air transport (ICAO-TI/IATA-DGR)****14.1. UN 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



Special Provisions:

A3

Limited quantity Passenger:

1 L

Passenger LQ:

Y641

Excepted quantity:

E4

IATA-packing instructions - Passenger:

654

IATA-max. quantity - Passenger:

5 L

IATA-packing instructions - Cargo:

661

IATA-max. quantity - Cargo:

60 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS:

yes



Danger releasing substance:

Potassium cyanide, copper cyanide

**14.6. Special precautions for user**

Warning: Toxic.



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**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****EU regulatory information**

Information according to 2012/18/EU H1 ACUTE TOXIC

(SEVESO III):

Additional information: E1

**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): 3 - highly water contaminating

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning.

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information****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. 1; H310      | Calculation method       |
| Acute Tox. 2; H300      | Calculation method       |
| Acute Tox. 2; H330      | Calculation method       |
| Aquatic Chronic 2; H411 | Calculation method       |

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

|                |   |
|----------------|---|
| H300           | Fatal if swallowed.                                     |
| H300+H310+H330 | Fatal if swallowed, in contact with skin or if inhaled. |
| H310           | Fatal in contact with skin.                             |
| H330           | Fatal if inhaled.                                       |
| H400           | Very toxic to aquatic life.                             |
| H410           | Very toxic to aquatic life with long lasting effects.   |
| H411           | Toxic to aquatic life with long lasting effects.        |
| EUH032         | Contact with acids liberates very toxic gas.            |

**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

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

The logo for Jentner Plating Technology is a red triangle pointing to the right. Inside the triangle, the word "JENTNER" is written in white, bold, uppercase letters. Below it, the words "PLATING TECHNOLOGY" are written in a smaller, white, uppercase font.

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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.

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