



According to EC-Regulation 1907/2006 (REACH), annex II, including changes implemented by EC-Regulation 2020/878

## SAFETY DATA SHEET

# Pen-plating Gold Bath Red JE270-3

### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

*Trade name:* Pen-plating Gold Bath Red JE270-3  
*Product no.:* PE10203  
*Unique formula identifier (UFI):* PE8Q-H33U-0U3D-WST3

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

*Relevant identified uses of the substance or mixture:* Liquid for galvanic processes  
Restricted to professional users.  
*Uses advised against :* None known.

#### 1.3. Details of the supplier of the safety data sheet

*Company and address:* **Aktiv Guld A/S**  
Vallensbækvej 46  
2625 Vallensbæk  
Denmark  
+45 43 66 20 00  
<https://www.aktivguld.com/>  
*E-mail:* [ag@aktivguld.com](mailto:ag@aktivguld.com)  
*Revision:* 03/09/2025  
*SDS Version:* 7.0  
*Date of previous version:* 08/08/2025 (7.0)

#### 1.4. Emergency telephone number

Contact the poison hotline: +45 82 12 12 12 (24 hour service)  
See section 4 "First aid measures".

### SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP).

#### 2.1. Classification of the substance or mixture

Acute Tox. 3; H301, Toxic if swallowed.  
Acute Tox. 2; H310, Fatal in contact with skin.  
Acute Tox. 4; H332, Harmful if inhaled.

Aquatic Chronic 2; H411, Toxic to aquatic life with long lasting effects.

## 2.2. Label elements

*Hazard pictogram(s):*



*Signal word:*

Danger

*Hazard statement(s):*

Toxic if swallowed. (H301)

Fatal in contact with skin. (H310)

Harmful if inhaled. (H332)

Toxic to aquatic life with long lasting effects. (H411)

*Precautionary statement(s):*

*General:*

Not applicable.

*Prevention:*

Do not get in eyes, on skin, or on clothing. (P262)

Wash hands and exposed skin thoroughly after handling. (P264)

Wear face protection/protective gloves/protective clothing. (P280)

*Response:*

Immediately call a POISON CENTER/doctor. (P310)

Take off immediately all contaminated clothing and wash it before reuse. (P361+P364)

*Storage:*

Not applicable.

*Disposal:*

Dispose of contents/container in accordance with local regulation. (P501)

*Hazardous substances:*

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

*Additional labelling:*

UFI: PE8Q-H33U-0U3D-WST3

## 2.3. Other hazards

*Additional warnings:*

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Not applicable. This product is a mixture.

### 3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex	CAS No.: EC No.: REACH: Index No.: 006-007-00-5	max. 3%	EUH032 Acute Tox. 2, H300 Acute Tox. 1, H310 Acute Tox. 2, H330 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	
copper sulphate pentahydrate	CAS No.: 7758-98-7 EC No.: 231-847-6 REACH: 01-2119520566-40-XXXX Index No.: 029-023-00-4	1%	Acute Tox. 4, H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	
Potassium dicyanoargentate(1)	CAS No.: 506-61-6 EC No.: 208-047-0 REACH: 01-2120753799-33-XXXX Index No.:	<0.0015%	EUH032 EUH071 Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=100)	

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

### Other information

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## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

*General information:*

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

<i>Inhalation:</i>	Upon breathing difficulties or irritation of the respiratory tract: Bring the injured person into fresh air. Make sure the injured person is continuously monitored. Prevent shock by keeping the injured person warm and calm. If breathing ceases, give mouth-to-mouth resuscitation. If unconscious, roll the injured person into recovery position. Call an ambulance.
<i>Skin contact:</i>	Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners. If skin irritation occurs: Get medical advice/attention.
<i>Eye contact:</i>	If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.
<i>Ingestion:</i>	In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor. Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.
<i>Burns:</i>	Not applicable.

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

None known.

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

IF exposed or concerned:

Get immediate medical advice/attention.

**Information to medics**

Bring this safety data sheet or the label from this product.

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**SECTION 5: FIREFIGHTING MEASURES**

**5.1. Extinguishing media**

Not applicable.

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

Fire will result in dense smoke. Exposure to combustion products may harm your health.

Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-

extinguishing water to enter the sewage system and nearby surface waters.

### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the chemical emergency services on 72 85 20 00 (24 h service) in order to obtain further advice.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.  
Ensure adequate ventilation, especially in confined areas.  
Avoid inhalation of vapours from spilled material.  
Contaminated areas may be slippery.

### 6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

### 6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.  
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

### 6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.  
See section 8 "Exposure controls/personal protection" for protective measures.

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## SECTION 7: HANDLING AND STORAGE

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### 7.1. Precautions for safe handling

It is recommended to install waste collection trays in order to prevent emissions to the waste water system and surrounding environment.  
Avoid direct contact with the product.  
Avoid contact during pregnancy and while nursing.  
Smoking, drinking and consumption of food is not allowed in the work area.  
See section 8 "Exposure controls/personal protection" for information on personal protection.

### 7.2. Conditions for safe storage, including any incompatibilities

Store locked up. A sign warning of toxic materials shall be affixed the room and cupboard containing the product(s).  
Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

<i>Recommended storage material:</i>	Always store in containers of the same material as the original container.
<i>Storage conditions:</i>	No specific requirements.
<i>Incompatible materials:</i>	Acid

### 7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

No substances are listed in the national list of substances with an occupational exposure limit.

#### DNEL

copper sulphate pentahydrate

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - Workers	Dermal	137 mg/kg bw/day
Long term – Local effects - Workers	Inhalation	1 mg/m <sup>3</sup>
Long term – Systemic effects - Workers	Inhalation	1 mg/m <sup>3</sup>
Long term – Systemic effects - General population	Oral	41 µg/kg bw/day
Short term – Systemic effects - General population	Oral	82 µg/kg bw/day

Potassium dicyanoargentate(1)

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - Workers	Dermal	11 µg/kg bw/day
Long term – Systemic effects - Workers	Inhalation	78 µg/m <sup>3</sup>

#### PNEC

copper sulphate pentahydrate

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		7.8 µg/L
Freshwater sediment		87 mg/kg
Marine water		5.2 µg/L
Marine water sediment		676 mg/kg
Sewage treatment plant		230 µg/L
Soil		65 mg/kg

Potassium dicyanoargentate(1)

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		46 ng/L

Freshwater sediment		438.13 mg/kg
Marine water		860 ng/L
Marine water sediment		438.13 mg/kg
Sewage treatment plant		25 µg/L
Soil		1.05 mg/kg

## 8.2. Exposure controls

Apply general control to prevent unnecessary exposure

*General recommendations:*

Smoking, drinking and consumption of food is not allowed in the work area.

*Exposure scenarios:*

There are no exposure scenarios implemented for this product.

*Exposure limits:*

Occupational exposure limits have not been defined for the substances in this product.

*Appropriate technical measures:*

Apply standard precautions during use of the product. Avoid inhalation of vapours.

*Hygiene measures:*

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

*Measures to avoid environmental exposure:*


Keep damming materials near the workplace. If possible, collect spillage during work.

## Individual protection measures, such as personal protective equipment


*Generally:*

Use only CE marked protective equipment.


*Respiratory Equipment:*

Work situation	Type	Class	Colour	Standards	
In case of inadequate ventilation	Combination filter A2B2E2K1-P2	Class 1/2	Brown/Gray/Yellow/Green/White	EN14387	


*Skin protection:*

Recommended	Type/Category	Standards	
Dedicated work clothing should be worn.	-	-	

*Hand protection:*

Work situation	Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Change gloves often.	Nitrile	0,3	> 480	EN374-2, EN16523-1, EN388	

*Eye protection:*

Type	Standards	
Face shield alternatively safety glasses with side shields.	EN166	

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<i>Physical state:</i>	Liquid
<i>Colour:</i>	Teal
<i>Odour / Odour threshold:</i>	No data available.
<i>pH:</i>	9
<i>Density (g/cm<sup>3</sup>):</i>	1.02 (20 °C)
<i>Kinematic viscosity:</i>	No data available.
<i>Particle characteristics:</i>	Does not apply to liquids.

#### Phase changes

<i>Melting point/Freezing point (°C):</i>	No data available.
<i>Softening point/range (°C):</i>	Does not apply to liquids.
<i>Boiling point (°C):</i>	No data available.
<i>Vapour pressure:</i>	No data available.
<i>Relative vapour density:</i>	No data available.
<i>Decomposition temperature (°C):</i>	No data available.

#### Data on fire and explosion hazards

<i>Flash point (°C):</i>	No data available.
<i>Flammability (°C):</i>	No data available.
<i>Auto-ignition temperature (°C):</i>	No data available.
<i>Lower and upper explosion limit (% v/v):</i>	No data available.

#### Solubility

<i>Solubility in water:</i>	Completely soluble
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*n*-octanol/water coefficient (LogKow): No data available.

Solubility in fat (g/L): No data available.

## 9.2. Other information

Other physical and chemical parameters: No data available.

Oxidizing properties: No data available.

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

No data available.

### 10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

Acid

Oxidizing agents

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Toxic if swallowed.

Fatal in contact with skin.

Harmful if inhaled.

#### 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.

#### Respiratory sensitisation

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

#### Skin sensitisation

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

### **Germ cell mutagenicity**

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

### **Carcinogenicity**

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.

## **11.2. Information on other hazards**

### **Long term effects**

None known.

### **Endocrine disrupting properties**

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

### **Other information**

None known.

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## **SECTION 12: ECOLOGICAL INFORMATION**

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### **12.1. Toxicity**

Toxic to aquatic life with long lasting effects.

### **12.2. Persistence and degradability**

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

### **12.3. Bioaccumulative potential**

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

### **12.4. Mobility in soil**

No data available.

### **12.5. Results of PBT and vPvB assessment**

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

### **12.6. Endocrine disrupting properties**

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

### **12.7. Other adverse effects**

According to EC-Regulation 1907/2006 (REACH), annex II, including changes implemented by EC-Regulation 2020/878

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms.

This product contains substances, which may cause adverse long-term effects to the aquatic environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste. (\*)

HP 6 - Acute toxicity

HP 14 - Ecotoxic

Dispose of contents/container to an approved waste disposal plant.

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

*EWC code:*

11

WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY

11 01

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)

11 01 98\*

Other wastes containing dangerous substances



### Specific labelling

Not applicable.





### Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

## SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	UN1935	CYANIDE SOLUTION, N.O.S. (Potassium dicyanoargentate(1))	Transport hazard class: 6.1 Label: 6.1 Classification code: T4  	II	Yes	Limited quantities: 100 ml Tunnel restriction code: (D/E) See below for additional

According to EC-Regulation 1907/2006 (REACH), annex II, including changes implemented by EC-Regulation 2020/878

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other informat ion:
						informati on.
IMDG	UN1935	CYANIDE SOLUTION, N.O.S. (Potassium dicyanoargentate(1))	Transport hazard class: 6.1 Label: 6.1 Classification code: T4  	II	Yes	Limited quantitie s: 100 ml EmS: F-A S-A See below for additiona l informati on.
IATA	UN1935	CYANIDE SOLUTION, N.O.S. (Potassium dicyanoargentate(1))	Transport hazard class: 6.1 Label: 6.1 Classification code: T4  	II	Yes	See below for additiona l informati on.

\* Packing group

\*\* Environmental hazards

#### Additional information

This product is within scope of the regulations of transport of dangerous goods.

ADR / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.

IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.

IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

#### 14.6. Special precautions for user

Not applicable.

#### 14.7. Maritime transport in bulk according to IMO instruments

No data available.

### SECTION 15: REGULATORY INFORMATION

## 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

*Restrictions for application:*

Restricted to professional users.  
People under the age of 18 shall not be exposed to this product.  
Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

*Demands for specific education:*

No specific requirements.

*SEVESO - Categories / dangerous substances:*

H2 - ACUTE TOXIC, Qualifying quantity (lower-tier): 50 tonnes / (upper-tier): 200 tonnes  
E2 - ENVIRONMENTAL HAZARDS, Qualifying quantity (lower-tier): 200 tonnes / (upper-tier): 500 tonnes

*Additional information:*

Not applicable.

*Sources:*

The Danish Working Environment Authority's executive order no. 1049 of 30 May 2021 on young people's work. Based on Council Directive 94/33 / EC of 22 June 1994 on the protection of young people at work.  
Pregnant workers and workers who are breastfeeding (AT Guide A.1.8-6, amended 2024).  
Executive Order no. 372 of 25 April 2016 on control of the risk of major accidents with dangerous substances.  
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.  
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).  
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

## 15.2. Chemical safety assessment

No

## SECTION 16: OTHER INFORMATION

### Full text of H-phrases as mentioned in section 3

EUH032, Contact with acids liberates very toxic gas.  
EUH071, Corrosive to the respiratory tract.

H290, May be corrosive to metals.  
H300, Fatal if swallowed.  
H302, Harmful if swallowed.  
H310, Fatal 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.

### Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS = Chemical Abstracts Service  
CE = Conformité Européenne (European conformity)  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
CSA = Chemical Safety Assessment  
CSR = Chemical Safety Report  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
EINECS = European Inventory of Existing Commercial chemical Substances  
ES = Exposure Scenario  
EUH statement = CLP-specific Hazard statement  
EuPCS = European Product Categorisation System  
EWC = European Waste Catalogue  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
GWP = Global warming potential  
IARC = International Agency for Research on Cancer (IARC)  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
RRN = REACH Registration Number  
SCL = A specific concentration limit  
SVHC = Substances of Very High Concern  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure

STOT-SE = Specific Target Organ Toxicity - Single Exposure

TWA = Time weighted average

UN = United Nations

UVBC = Unknown or variable composition, complex reaction products or of biological materials

VOC = Volatile Organic Compound

vPvB = Very Persistent and Very Bioaccumulative

### **Additional information**

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The classification of the substance/mixture in regard of environmental hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

### **The safety data sheet is validated by**

Aktiv Guld A/S

### **Other**

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

Country-language: DK-en