

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Revision date: 27.11.2025

Gold bath
Product code: 0226

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

Gold bath

UFI: CRAM-T98R-EK94-KQA5

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

Metal surface treatment products

1.3. Details of the supplier of the safety data sheet

Company name:	MARAWE GmbH & Co. KG	
Street:	An der Irler Höhe 3b	
Place:	D-93055 Regensburg	
Telephone:	+49 941 37847200	Telefax: +49 941 290205-93
E-mail:	info@marawe.de	
E-mail (Contact person):	produktsicherheit@marawe.de	
Internet:	www.marawe.de	

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

Skin Irrit. 2; H315

Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements**Regulation (EC) No 1272/2008****Signal word:** Warning**Pictograms:****Hazard statements**

H315	Causes skin irritation.
H319	Causes serious eye irritation.

Precautionary statements

P102	Keep out of reach of children.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

Special labelling of certain mixtures

EUH032	Contact with acids liberates very toxic gas.
EUH208	Contains potassium dicyanoaurate. May produce an allergic reaction.

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

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Relevant ingredients

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	Classification (Regulation (EC) No 1272/2008)	
12125-02-9	ammonium chloride	5 - < 10 %
	235-186-4	
	01-2119487950-27	
	Acute Tox. 4, Eye Irrit. 2; H302 H319	
5949-29-1	Citric acid, monohydrate	1.9 - < 5 %
	201-069-1	
	01-2119457026-42	
	Eye Irrit. 2; H319	
1310-73-2	sodium hydroxide; caustic soda	1 - < 1.9 %
	215-185-5	
	011-002-00-6	
	Met. Corr. 1, Skin Corr. 1A; H290 H314	
13967-50-5	potassium dicyanoaurate	< 1 %
	01-2120130777-52	
	Met. Corr. 1, Acute Tox. 2, Acute Tox. 2, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1; H290 H330 H300 H315 H318 H317 H373 H400 H410 EUH032	

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	
12125-02-9	235-186-4	ammonium chloride	5 - < 10 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = 1410 mg/kg	
5949-29-1	201-069-1	Citric acid, monohydrate	1.9 - < 5 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = 5400 mg/kg	
1310-73-2	215-185-5	sodium hydroxide; caustic soda	1 - < 1.9 %
		Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2	
13967-50-5		potassium dicyanoaurate	< 1 %
		inhalation: ATE = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); dermal: LD50 = > 5000 mg/kg; oral: LD50 = 29,2 mg/kg	

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Provide fresh air.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

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

Cardiac arrhythmias Cyanosis (blue coloured blood)

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

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Treat symptomatically.

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

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

Full water jet

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.
Use personal protection equipment. Take off contaminated clothing and wash it before reuse.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up**For cleaning up**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). 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****Advice on safe handling**

No special measures are necessary.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Wash hands before breaks and after work. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed.

Hints on joint storage

Do not store together with: Acid.

7.3. Specific end use(s)

Metal surface treatment products

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****DNEL/DMEL values**

CAS No	Name of agent	Exposure route	Effect	Value
12125-02-9	ammonium chloride			
Consumer DNEL, long-term		oral	systemic	55,2 mg/kg bw/day

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DNEL/DMEL values

CAS No	Name of agent	Exposure route	Effect	Value
DNEL type				
Worker DNEL, long-term		dermal	systemic	128,9 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	55,2 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	43,97 mg/m ³
Consumer DNEL, long-term		inhalation	systemic	9,4 mg/m ³
13967-50-5	potassium dicyanoaurate			
Worker DNEL, long-term		inhalation	systemic	0,071 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,1 mg/kg bw/day

PNEC values

CAS No	Name of agent	Value
Environmental compartment		
12125-02-9	ammonium chloride	
Freshwater		0,25 mg/l
Marine water		0,025 mg/l
Freshwater sediment		0,9 mg/kg
Marine sediment		0,09 mg/kg
Micro-organisms in sewage treatment plants (STP)		13,1 mg/l
Soil		50,7 mg/kg
5949-29-1	Citric acid, monohydrate	
Freshwater		0,44 mg/l
Marine water		0,044 mg/l
Freshwater sediment		3,46 mg/kg
Marine sediment		34,6 mg/kg
Micro-organisms in sewage treatment plants (STP)		> 1000 mg/l
Soil		33,1 mg/kg
13967-50-5	potassium dicyanoaurate	
Freshwater		0,0002 mg/l
Marine water		0,00002 mg/l
Freshwater sediment		0,33 mg/kg
Marine sediment		0,033 mg/kg
Micro-organisms in sewage treatment plants (STP)		6 mg/l
Soil		0,067 mg/kg

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls



Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

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.

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Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

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

Physical state:	Liquid
Colour:	clear
Odour:	odourless
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	> 100 °C
Flammability:	not determined
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	not determined
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value (at 25 °C):	ca. 7,3
Viscosity / kinematic:	not determined
Water solubility:	easily soluble
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	not determined
Density (at 25 °C):	ca. 1,05 - 1,06 g/cm ³
Relative vapour density:	not determined
Particle characteristics:	not applicable

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

Explosive properties

The product is not: Explosive.

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

Evaporation rate: not determined

Solid content: not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reaction with: Acid.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

Contact with acids liberates toxic gas. Hydrogen cyanide (hydrocyanic acid)

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SECTION 11: Toxicological information

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

Acute toxicity

Based on available data, the classification criteria are not met.
Contact with acids liberates very toxic gas.

ATEmix calculated

ATE (oral) > 5000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 50 mg/l; ATE (inhalation dust/mist) > 12,5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
12125-02-9	ammonium chloride				
	oral	LD50 1410 mg/kg	Rat	Manufacturer	
	dermal	LD50 >2000 mg/kg	Rabbit	Manufacturer	
5949-29-1	Citric acid, monohydrate				
	oral	LD50 5400 mg/kg	Mouse	Manufacturer	OECD 401
	dermal	LD50 > 2000 mg/kg	Rat	Manufacturer	OECD 402
13967-50-5	potassium dicyanoaurate				
	oral	LD50 29,2 mg/kg	Rat	Pre-supplier/manufaturer	OECD 401
	dermal	LD50 > 5000 mg/kg	Rat	Pre-supplier/manufaturer	OECD 402
	inhalation vapour	ATE 0,5 mg/l			
	inhalation dust/mist	ATE 0,05 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/eye irritation: Causes serious eye irritation.

Sensitising effects

Based on available data, the classification criteria are not met.
Contains potassium dicyanoaurate. May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

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

Other information

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

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h][d]	Species	Source	Method
12125-02-9	ammonium chloride					
	Acute fish toxicity	LC50 42,91 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	Manufacturer	
	Acute crustacea toxicity	EC50 136,6 mg/l	48 h	Daphnia magna (Big water flea)	Manufacturer	
5949-29-1	Citric acid, monohydrate					
	Acute fish toxicity	LC50 440 mg/l	96 h	Leuciscus idus (golden orfe)	Manufacturer	OECD 203
	Acute crustacea toxicity	EC50 1535 mg/l	48 h	Daphnia magna (Big water flea)	Manufacturer	
1310-73-2	sodium hydroxide; caustic soda					
	Acute fish toxicity	LC50 125 mg/l	96 h	Gambusia affinis (Mosquito fish)	ECOTOX Database	
	Acute crustacea toxicity	EC50 40,4 mg/l	48 h	Ceriodaphnia spec	ECHA	
13967-50-5	potassium dicyanoaurate					
	Acute fish toxicity	LC50 5,7 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	Pre-supplier/manufacturer	OECD 203
	Acute algae toxicity	ErC50 30 mg/l		Pseudokirchneriella subcapitata	Pre-supplier/manufacturer	OECD 201
	Acute crustacea toxicity	EC50 0,2 mg/l	48 h	Daphnia magna (Big water flea)	Pre-supplier/manufacturer	OECD 202
	Acute bacteria toxicity	EC50 406 mg/l ()	3 h	Activated sludge	Pre-supplier/manufacturer	OECD 209

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
5949-29-1	Citric acid, monohydrate			
	OECD 301B	97 %	28	
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
The product has not been tested.

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.

12.7. Other adverse effects

No information available.

Further information

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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****Disposal recommendations**

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.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

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

- | | |
|--|--|
| 14.1. UN number or ID number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

Inland waterways transport (ADN)

- | | |
|--|--|
| 14.1. UN number or ID number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

Marine transport (IMDG)

- | | |
|--|--|
| 14.1. UN number or ID number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

Air transport (ICAO-TI/IATA-DGR)

- | | |
|--|--|
| 14.1. UN number or ID number: | No dangerous good in sense of this transport regulation. |
| 14.2. UN proper shipping name: | No dangerous good in sense of this transport regulation. |
| 14.3. Transport hazard class(es): | No dangerous good in sense of this transport regulation. |
| 14.4. Packing group: | No dangerous good in sense of this transport regulation. |

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No information available.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

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, Entry 75

Information according to Directive
2012/18/EU (SEVESO III):

Not subject to 2012/18/EU (SEVESO III)

Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

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National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

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

Skin resorption/Sensitization: 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**Abbreviations and acronyms**

Met. Corr: Substance or mixture corrosive to metals
Acute Tox: Acute toxicity
Skin Corr: Skin corrosion
Skin Irrit: Skin irritation
Eye Dam: Eye damage
Eye Irrit: Eye irritation
Skin Sens: Skin sensitisation
STOT RE: Specific target organ toxicity - repeated exposure
Aquatic Acute: Acute aquatic hazard
Aquatic Chronic: Chronic aquatic hazard
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%
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
EC/EEC: European Community/European Economic Community
EU: European Union
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
M-factor: Multiplying factor
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
IATA: International Air Transport Association
DGR: Dangerous Goods Regulations
ICAO: International Civil Aviation Organization

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TI: Technical Instructions

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container

SVHC: Substance of Very High Concern

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

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

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.
EUH208	Contains potassium dicyanoaurate. May produce an allergic reaction.

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 receiver of our product is singularly responsible for adhering to existing laws and regulations.

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