

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Copper plating solution - alkaline

Revision date: 09.02.2022

Product code: DG-007

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Copper plating solution - alkaline

UFI: 2F00-Q07E-3005-4HRE

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

Use of the substance/mixture

Coating of acid-sensitive metals with copper

Uses advised against

Other uses than those specified in section 1.2 of this safety data sheet are not recommended.

1.3. Details of the supplier of the safety data sheet

Company name: Dr. Galva Thomas Henning
 Street: Jungholzstraße 7A
 Place: D-76726 Germersheim
 Telephone: +49 7274 – 907 91 27
 e-mail: info@drgalva.com
 Internet: www.drgalva.com

1.4. Emergency telephone number:

Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Substance or mixture corrosive to metals: Met. Corr. 1

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1A

Serious eye damage/eye irritation: Eye Dam. 1

Hazardous to the aquatic environment: Aquatic Acute 1

Hazardous to the aquatic environment: Aquatic Chronic 1

Hazard Statements:

May be corrosive to metals.

Harmful if swallowed.

Causes severe skin burns and eye damage.

Causes serious eye damage.

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

1-Hydroxyethylidenediphosphonic acid

caustic potash, potassium hydroxide

copper sulphate pentahydrate

Signal word: Danger

Pictograms:



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Hazard statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P260	Do not breathe dust/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P501	Dispose of contents/container according to regional/national regulations. Do not discard with household waste.

2.3. Other hazards

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

SECTION 3: Composition/information on ingredients
3.2. Mixtures
Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
2809-21-4	1-Hydroxyethylidenediphosphonic acid			20 - < 25 %
	220-552-8			
	Met. Corr. 1, Acute Tox. 4, Eye Dam. 1; H290 H302 H318			
1310-58-3	caustic potash, potassium hydroxide			15 - < 20 %
	215-181-3	019-002-00-8	01-2119487136-33	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1A; H290 H302 H314			
7758-99-8	copper sulphate pentahydrate			5 - < 10 %
	231-847-6	029-023-00-4		
	Acute Tox. 4, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1; H302 H318 H400 H410			
497-19-8	sodium carbonate			1 - < 5 %
	207-838-8	011-005-00-2	01-2119485498-19	
	Eye Irrit. 2; H319			

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

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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
2809-21-4	220-552-8	1-Hydroxyethylidenediphosphonic acid	20 - < 25 %
		oral: ATE = 500 mg/kg	
1310-58-3	215-181-3	caustic potash, potassium hydroxide	15 - < 20 %
		oral: LD50 = 333 mg/kg 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	
7758-99-8	231-847-6	copper sulphate pentahydrate	5 - < 10 %
		oral: ATE = 500 mg/kg M acute; H400: M=10 M chron.; H410: M=10	
497-19-8	207-838-8	sodium carbonate	1 - < 5 %
		oral: LD50 = 4090 mg/kg	

Further Information

The percentages of the ingredients not listed here are all below the level of consideration.

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

In case of troubles or persistent symptoms, consult an doctor/physician.

Remove persons from danger area and lie them down. Never orally infuse something to an unconscious person. No special first aid measures necessary. A vomiting, supine person must be brought into recovery position.

After inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of irregular breathing or respiratory arrest, perform artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Call a doctor. Change contaminated clothing. Wash contaminated clothing before reuse.

After contact with eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. Protect uninjured eye.

After ingestion

Rinse mouth, spit liquid again. Do NOT induce vomiting. Let water be drunken in little sips (dilution effect). Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Causes severe skin burns and eye damage.

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.

Carbon dioxide (CO₂). Extinguishing powder. Atomized water. Foam.

Unsuitable extinguishing media

High power water jet.

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5.2. Special hazards arising from the substance or mixture

Upon exposure to fire, harmful gases may be emitted.

5.3. Advice for firefighters

Co-ordinate fire-fighting measures to the fire surroundings. Wear a self-contained breathing apparatus and chemical protective clothing.

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

Wear suitable protective clothing.

Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up**Other information**

Remove material mechanically. Treat the recovered material as prescribed in the section on waste disposal.

Clean contaminated articles and floor according to the environmental legislation.

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**

Personal precautions: refer to section 8 Persons with a history of skin sensitisation problems should not be employed in any process in which this product is used.

Provide adequate ventilation, especially in confined areas.

Advice on general occupational hygiene

Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink.

Further information on handling

Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

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

Store only in original container. Keep container tightly closed in a cool, well-ventilated place.

Protect from heat/overheating.

Store separately from oxidizing agents.

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

Coating metals with a shiny copper layer

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

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Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
1310-58-3	Potassium hydroxide	-	2		STEL (15 min)	

8.2. Exposure controls

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly sealed safety glasses.

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.

Skin protection

The design of personal protective equipment must be selected specifically for the job, depending on the concentration and quantity of hazardous substances. The chemical resistance of the protective agents should be clarified with their suppliers.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Protective respiration apparatus not using surrounding air (breathing apparatus) (DIN EN 133).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	dark blue
Odour:	characteristic

Changes in the physical state

Melting point/freezing point:	no data available
Boiling point or initial boiling point and boiling range:	ca.100 °C
Flash point:	not applicable

Flammability

Solid/liquid:	no data available
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Explosive properties

not Explosive.

Lower explosion limits:	no data available
Upper explosion limits:	no data available
Auto-ignition temperature:	no data available

Self-ignition temperature

Solid:	no data available
Decomposition temperature:	no data available
pH-Value (at 20 °C):	9
Viscosity / dynamic:	no data available
Viscosity / kinematic:	no data available
Water solubility:	no data available

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Solubility in other solvents

no data available

Partition coefficient n-octanol/water:

no data available

Density:

1,1-1,2 g/cm³

Bulk density:

no data available

9.2. Other information

Oxidizing properties

no data available

Further Information

no data available

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

Substances or mixtures corrosive to metals.

10.2. Chemical stability

The product is stable under normal environmental conditions (room temperature).

10.3. Possibility of hazardous reactions

Protect against heat and direct solar irradiation. Protect against contaminations.

10.4. Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5. Incompatible materials

Oxidising substances

10.6. Hazardous decomposition products

In case of fire hazardous decomposition products may be formed.

Carbon dioxide (CO₂). Carbon monoxide. Nitrogen oxides (NO_x).**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Harmful if swallowed.

ATE_{mix} calculated

ATE (oral) 937,7 mg/kg

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CAS No	Chemical name					
	Exposure route	Dose	Species	Source	Method	
2809-21-4	1-Hydroxyethylidenediphosphonic acid					
	oral	ATE 500 mg/kg				
1310-58-3	caustic potash, potassium hydroxide					
	oral	LD50 333 mg/kg	Rat			
7758-99-8	copper sulphate pentahydrate					
	oral	ATE 500 mg/kg				
497-19-8	sodium carbonate					
	oral	LD50 4090 mg/kg	Rat	IUCLID		

Irritation and corrosivity

Causes severe skin burns and eye damage.
Causes serious eye damage.

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

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

Aspiration hazard

Based on available data, the classification criteria are not met.
If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

11.2. Information on other hazards
Endocrine disrupting properties

none known

SECTION 12: Ecological information
12.1. Toxicity

Toxic to aquatic life with long lasting effects.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
497-19-8	sodium carbonate					
	Acute fish toxicity	LC50 300 mg/l	96 h	Lepomis macrochirus		
	Acute crustacea toxicity	EC50 265 mg/l	48 h	Daphnia magna	IUCLID	

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

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The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Endocrine disrupting properties

none known

12.7. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Disposal according to official regulations.


Consult the local waste disposal expert about waste disposal. According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

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)

<u>14.1. UN number or ID number:</u>	UN 1760
<u>14.2. UN proper shipping name:</u>	CORROSIVE LIQUID, N.O.S. (1-Hydroxyethylidenediphosphonic acid; caustic potash, potassium hydroxide)
<u>14.3. Transport hazard class(es):</u>	8
<u>14.4. Packing group:</u>	II
Hazard label:	8
	
Classification code:	C9
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	80
Tunnel restriction code:	E

Inland waterways transport (ADN)

<u>14.1. UN number or ID number:</u>	UN 1760
<u>14.2. UN proper shipping name:</u>	CORROSIVE LIQUID, N.O.S. (1-Hydroxyethylidenediphosphonic acid; caustic potash, potassium hydroxide)
<u>14.3. Transport hazard class(es):</u>	8
<u>14.4. Packing group:</u>	II
Hazard label:	8
	
Classification code:	C9
Special Provisions:	274

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Limited quantity: 1 L
 Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
 (1-Hydroxyethylidenediphosphonic acid; caustic potash, potassium hydroxide)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Special Provisions: 274
 Limited quantity: 1 L
 Excepted quantity: E2
 EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
 (1-Hydroxyethylidenediphosphonic acid; caustic potash, potassium hydroxide)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Special Provisions: A3 A803
 Limited quantity Passenger: 0.5 L
 Passenger LQ: Y840
 Excepted quantity: E2
 IATA-packing instructions - Passenger: 851
 IATA-max. quantity - Passenger: 1 L
 IATA-packing instructions - Cargo: 855
 IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes



Danger releasing substance: copper sulphate pentahydrate

14.6. Special precautions for user

No special precautions known.

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

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EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III): E2 Hazardous to the Aquatic Environment

Additional information

Regulation (EC) No. 1907/2006 (REACH)

Regulation (EC) No. 648/2004 (Detergents regulation): not applicable

Regulation (EC) No. 1005/2009 on substances that lead to the depletion of the ozone layer: not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants: not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council concerning the export and import of dangerous chemicals: This mix contains no chemicals that are subject to the export notification procedures (annex 1).

This mixture contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: none

This mixture contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH: none

National regulatory information

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

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

caustic potash, potassium hydroxide

sodium carbonate

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 2,7,11,12,16.

Version 1,00 - 12.04.2021 - first creation

Version 1,01 - 09.02.2022 - General update

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)

BlmSchV (Fed.Imm.Prot.Act): Directive on the Implementation of the Federal Immission Protection Act

CAS: Chemical Abstracts Service

DIN: Norm of the Deutsche Institut für Normung (German Institute for Standardization)

EC: Effective Concentration

EG: European Community (Europäische Gemeinschaft)

EN: European Norm

IATA: International Air Transport Association

IBC Code: International Code for the Construction and Equipment of ships carrying Dangerous Chemicals in Bulk

ICAO: International Civil Aviation Organization

IMDG: International Maritime Code for Dangerous Goods

ISO: Norm of the International Standards Organization

CLP: Classification, Labeling, Packaging

IUCLID: International Uniform Chemical Information Database

LC: Lethal concentration

LD: Lethal dose

log Kow: Octanol/water partition coefficient

MARPOL: Maritime Pollution Convention = Convention for the Prevention of Maritime Pollution from Ships

OECD: Organisation for Economic Co-operation and Development

PBT: Persistent, bio-cumulative, toxic

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RID: Regulation Concerning the International Transport of Dangerous Goods by Rail

TRGS: Technische Regeln für Gefahrstoffe

UN: United Nations

VOC: Volatile Organic Compounds

vPvB: very persistent and very bio-cumulative

VwVwS: Administrative Regulation for Water Pollutants

WGK: German Water Hazard Class

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

DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration

TLV: Threshold Limiting Value

STOT: Specific Target Organ Toxicity

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

Classification	Classification procedure
Met. Corr. 1; H290	
Acute Tox. 4; H302	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Further Information

The information given in this safety data sheet is to describe the product's safety regulations. It is not for guaranteeing certain characteristics and is based on today's knowledge. The safety data sheet was generated upon information of pre-suppliers by:

asseso AG, Ottostraße 1, 63741, Aschaffenburg, Germany

Phone: +49 (0)6021 - 1 50 86-0, Fax: +49 (0)6021 - 1 50 86-77, E-Mail: eu-sds@asseso.eu, www.asseso.eu

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