

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 1 of 10

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

Silver electrolyte

UFI: 18G3-K9EG-D00H-9655

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

Galvanic silver-plating

Uses advised against

No further relevant information available.

1.3. Details of the supplier of the safety data sheet

Company name:	MARAWE GmbH & Co. KG	
Street:	Donaustauer Str. 378 - Gebäude 64	
Place:	D-93055 Regensburg	
Telephone:	+49 941 / 29020439	Telefax: +49 941 / 29020593
e-mail:	info@marawe.de	
Contact person:	Product safety department	
Internet:	www.marawe.de	

1.4. Emergency telephone number:+49 941 / 29020439,
Mo-Do 9:00 - 16:00 Uhr; Fr 9:00 - 14:00 Uhr**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**Skin Irrit. 2; H315
Eye Dam. 1; H318
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation****Hazard components for labelling**
silver nitrate**Signal word:** Danger**Pictograms:****Hazard statements**

H315	Causes skin irritation.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 2 of 10

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.
P391	Collect spillage.
P501	Dispose of contents/container to according to local/national waste disposal regulations.

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

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
584-08-7	Potassium carbonate			10 - < 15 %
	209-529-3			
	Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H315 H319 H335			
7761-88-8	Silver nitrate			1.9 - < 5 %
	231-853-9		01-2119513705-43	
	Ox. Sol. 2, Met. Corr. 1, Skin Corr. 1B, Aquatic Acute 1, Aquatic Chronic 1; H272 H290 H314 H400 H410			

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		
584-08-7	209-529-3	Potassium carbonate	10 - < 15 %
	inhalation: LC50 = >4960 mg/l (vapours); dermal: LD50 = >2001 mg/kg; oral: LD50 = >2001 mg/kg		
7761-88-8	231-853-9	Silver nitrate	1.9 - < 5 %
	oral: LD50 = >2000 mg/kg		

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

First aider: Pay attention to self-protection!

After inhalation

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

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. Be careful with contaminated clothes and shoes of the victim - they could still contain the product. If skin irritation occurs: Get medical advice/attention.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do.

After ingestion

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

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 3 of 10

Treat symptomatically.

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

The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Formation of hazardous gases/vapours possible during heating or in case of fire.

Oxocarbons (CO, CO₂), Nitrogen oxides (NO_x).**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****General advice**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

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 containment**

Make sure spills can be contained, e.g. in sump pallets or kerbed areas.

For cleaning up

Use neutralizing agent. 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**

Keep container tightly closed. Avoid contact with skin and eyes.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Advice on general occupational hygiene

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.

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 exhaust at critical locations.

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 4 of 10

Hints on joint storage

The regulations of the Ordinance on Hazardous Substances with its respective technical rules (TRGS 510) have to be respected.

Further information on storage conditions

Keep away from: UV-radiation/sunlight.

7.3. Specific end use(s)

Galvanic silver-plating

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
584-08-7	Potassium carbonate			
Worker DNEL, long-term		dermal	local	16 mg/cm ²
Consumer DNEL, long-term		dermal	local	8 mg/cm ²
Worker DNEL, long-term		inhalation	local	10 mg/m ³
Consumer DNEL, long-term		inhalation	local	10 mg/m ³

PNEC values

CAS No	Substance	Value
7761-88-8	Silver nitrate	
Freshwater		0,00004 mg/l
Marine water		0,00086 mg/l
Freshwater sediment		438 mg/kg
Marine sediment		438 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,025 mg/l
Soil		0,794 mg/kg

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tight sealing protective goggles (DIN EN 166).

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.

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 5 of 10

Skin protection

Wear suitable 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:	colourless
Changes in the physical state	
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	not determined
Flash point:	not determined
Flammability	
Solid/liquid:	not applicable
Gas:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Self-ignition temperature	
Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not determined
pH-Value (at 20 °C):	9,5
Water solubility:	easily soluble
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	not determined
Density:	not determined
Relative vapour density:	not determined

9.2. Other information**Information with regard to physical hazard classes**Oxidizing properties
Not oxidising.**Other safety characteristics**Solid content: not determined
Evaporation rate: not determined**Further Information****SECTION 10: Stability and reactivity****10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 6 of 10

10.3. Possibility of hazardous reactions

Reaction with acids with formation of CO₂ (possibly violent).

10.4. Conditions to avoid

exposure to light, Risk of explosion when closed while heating.

10.5. Incompatible materials

Reducing agent, strong
Acids

10.6. Hazardous decomposition products

Nitrogen oxides (NO_x), Oxocarbons (CO, CO₂), Oxygen

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
584-08-7	Potassium carbonate				
	oral	LD50 >2001 mg/kg	Rat	Manufacturer	
	dermal	LD50 >2001 mg/kg	Rabbit	Manufacturer	
	inhalation vapour	LC50 >4960 mg/l	Rat	Manufacturer	
7761-88-8	Silver nitrate				
	oral	LD50 >2000 mg/kg	Rat	Manufacturer	

Irritation and corrosivity

Causes skin irritation.
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.

Additional information on tests

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

SECTION 12: Ecological information

12.1. Toxicity

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

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 7 of 10

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
584-08-7	Potassium carbonate					
	Acute fish toxicity	LC50	68 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	Manufacturer
	Acute crustacea toxicity	EC50	200 mg/l	48 h	Daphnia pulex (water flea)	Manufacturer
7761-88-8	Silver nitrate					
	Fish toxicity	NOEC mg/l	0,13	28 d	Menidia beryllina (Inland silverside)	Manufacturer
	Algae toxicity	NOEC mg/l	0,0012	14 d	Champia parvula	Manufacturer
	Crustacea toxicity	NOEC mg/l	0,001	7 d	Ceriodaphnia reticulata	Manufacturer

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

BCF

CAS No	Chemical name	BCF	Species	Source
7761-88-8	Silver nitrate	70	Cyprinus carpio (Common Carp)	

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 UK REACH.

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

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.

List of Wastes Code - residues/unused products

061002 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture; wastes containing hazardous substances; hazardous waste

Contaminated packaging

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

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 8 of 10

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

14.1. UN number or ID number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8



Classification code: C9
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1
Transport category: 3
Hazard No: 80
Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8



Classification code: C9
Special Provisions: 274
Limited quantity: 5 L
Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number or ID number: UN 1760
14.2. UN proper shipping name: CORROSIVE LIQUID, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8



Special Provisions: 223, 274
Limited quantity: 5 L
Excepted quantity: E1
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.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
Hazard label: 8

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 9 of 10



Special Provisions:	A3 A803	
Limited quantity Passenger:	1 L	
Passenger LQ:	Y841	
Excepted quantity:	E1	
IATA-packing instructions - Passenger:		852
IATA-max. quantity - Passenger:		5 L
IATA-packing instructions - Cargo:		856
IATA-max. quantity - Cargo:		60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: strongly corrosive.

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

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

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 GB CLP Regulation

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
Aquatic Chronic 2; H411	Calculation method

Safety Data Sheet

according to UK REACH Regulation

Silver electrolyte

Revision date: 29.06.2022

Product code: 0102

Page 10 of 10

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
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.

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