

Safety Data Sheet

according to UK REACH Regulation

Patination

Revision date: 07.10.2022

Product code: 0217

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

Patination

UFI: FMYC-SM07-N00K-318K

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

Water-based surface treatment agents, solvent-free

Uses advised against

Not suited for the application on base metals (e.g. aluminium, zinc).

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**Met. Corr. 1; H290
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation**

Signal word: Warning

Pictograms:

**Hazard statements**H290 May be corrosive to metals.
H412 Harmful 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.
P234 Keep only in original packaging.
P273 Avoid release to the environment.
P390 Absorb spillage to prevent material damage.
P406 Store in a corrosion-resistant container with a resistant inner liner.
P501 Dispose of contents/container to according to local/national waste disposal regulations.**SECTION 3: Composition/information on ingredients**

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3.2. Mixtures
Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
7664-38-2	phosphoric acid; orthophosphoric acid			1.9 - < 5 %
	231-633-2		01-2119485924-24	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1; H290 H302 H314 H318			
7758-99-8	copper sulphate pentahydrate			1 - < 1.9 %
	231-847-6		01-2119520566-40	
	Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Aquatic Acute 1, Aquatic Chronic 1; H302 H315 H319 H400 H410			
7446-08-4	Seleniumdioxide			< 1 %
	231-194-7		01-2120089867-33	
	Acute Tox. 2, Acute Tox. 3, Skin Corr. 1B, Eye Dam. 1, STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1; H330 H301 H314 H318 H373 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	
7664-38-2	231-633-2	phosphoric acid; orthophosphoric acid	1.9 - < 5 %
		dermal: LD50 = 2740 mg/kg; oral: LD50 = 850 mg/kg Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25	
7758-99-8	231-847-6	copper sulphate pentahydrate	1 - < 1.9 %
		oral: LD50 = 300 mg/kg	
7446-08-4	231-194-7	Seleniumdioxide	< 1 %
		inhalation: LC50 = 0,5 mg/l (vapours); inhalation: LC50 = 0,51 mg/l (dusts or mists); oral: LD50 = 68,1 mg/kg	

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

This product contains selenium dioxide. Selenium dioxide can be absorbed by skin and can damage the nerves. Absolutely avoid contaminations. Don't use on aluminium, as this can create the highly toxic hydrogen selenide!

Symptoms of poisoning can occur after several hours, therefore medical observation for at least 48 hours after the accident.

After inhalation

Remove person to fresh air and keep comfortable for breathing.

After contact with skin

Wash with plenty of water. Take off contaminated clothing and wash it before reuse.

After contact with eyes

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

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Seek medical advice immediately.

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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

In the case of lung irritation: Primary treatment using corticoid spray, eg. Auxilison spray, Pulmicort-dosage-spray. (Auxilison and Pulmicort are registered trademarks.)

In case of oral uptake: do not use sodium hydrogen carbonate NaHCO_3 or calcium carbonate CaCO_3 for neutralisation, because the created carbon dioxide CO_2 can lead to perforation of the stomach. Make slowly drink magnesium oxide MgO suspended in water.

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.

Unsuitable extinguishing media

For this substance/mixture, there are no limitations of extinguishing agents.

5.2. Special hazards arising from the substance or mixture

Ambient fire may liberate hazardous vapours. Thermal decomposition can lead to the escape of irritating or toxic gases and vapours.

Hazardous decomposition products: Sulphur oxides (SO_2 , SO_3), Phosphorus oxides, Phosphine.

The product develops hydrogen in an aqueous solution in contact with metals.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Cool down closed recipients exposed to fire or high temperatures, if possible, from a safe distance with a water spray (risk of explosion) and safely remove from the danger zone.

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

Wear personal protection equipment. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means. Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

For non-emergency personnel

First aider: Pay attention to self-protection! Be careful with contaminated clothes and shoes of the victim - they could still contain the product.

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

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

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SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

Advice on protection against fire and explosion

May cause strong formation of hydrogen by contact with amphoteric metals (e.g. alumina, lead, zinc) - danger of explosion.

Advice on general occupational hygiene

Take off contaminated clothing. 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

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

Further information on storage conditions

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

7.3. Specific end use(s)

Water-based surface treatment agents, solvent-free

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7664-38-2	Orthophosphoric acid	-	1		TWA (8 h)	WEL
		-	2		STEL (15 min)	WEL
-	Selenium and compounds, except hydrogen selenide (as Se)	-	0.1		TWA (8 h)	WEL

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DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
7664-38-2	phosphoric acid; orthophosphoric acid		
Worker DNEL, acute	inhalation	local	2 mg/m ³
Worker DNEL, long-term	inhalation	local	1 mg/m ³
Worker DNEL, long-term	inhalation	systemic	10,7 mg/m ³
Consumer DNEL, long-term	inhalation	local	0,36 mg/m ³
Consumer DNEL, long-term	inhalation	systemic	4,57 mg/m ³
Consumer DNEL, long-term	dermal	systemic	0,1 mg/kg bw/day
7446-08-4	Seleniumdioxide		
Worker DNEL, long-term	dermal	systemic	9,8 mg/kg bw/day
Worker DNEL, long-term	inhalation	systemic	0,07 mg/m ³
Consumer DNEL, long-term	oral	systemic	0,00602 mg/kg bw/day
Consumer DNEL, long-term	dermal	systemic	6,02 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	0,021 mg/m ³

PNEC values

CAS No	Substance	
Environmental compartment	Value	
7446-08-4	Seleniumdioxide	
Freshwater	0,00374 mg/l	
Freshwater (intermittent releases)	0,0077 mg/l	
Marine water	0,0028 mg/l	
Freshwater sediment	11,48 mg/kg	
Marine sediment	8,68 mg/kg	
Secondary poisoning	1,4 mg/kg	
Soil	0,06 mg/kg	

8.2. Exposure controls



Individual protection measures, such as personal protective equipment

Eye/face protection

Wear eye/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.

Skin protection

Wear suitable protective clothing.

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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: blue
Odour: odourless

Changes in the physical state

Melting point/freezing point: not determined
Boiling point or initial boiling point and boiling range: > 100 °C
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 25 °C): 0,8 - 1,2
Water solubility: easily soluble

Solubility in other solvents

not determined
Partition coefficient n-octanol/water: not determined
Vapour pressure: not determined
Density (at 20 °C): 1,0 - 1,1 g/cm³
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.

10.3. Possibility of hazardous reactions

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This product contains selenium dioxide. Selenium dioxide can be absorbed by skin and can damage the nerves. Absolutely avoid contaminations. Don't use on aluminium, as this can create the highly toxic hydrogen selenide!

Exothermic reaction with: strong base

10.4. Conditions to avoid

No further relevant information available.

10.5. Incompatible materials

Materials to avoid: strong bases, Reducing agent, base metals.

10.6. Hazardous decomposition products

See subsection 5.2

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
7664-38-2	phosphoric acid; orthophosphoric acid				
	oral	LD50 mg/kg 850	Rat	Manufacturer	
	dermal	LD50 mg/kg 2740	Rabbit	Manufacturer	
7758-99-8	copper sulphate pentahydrate				
	oral	LD50 mg/kg 300	Rat	Manufacturer	
7446-08-4	Seleniumdioxide				
	oral	LD50 mg/kg 68,1	Rat	Manufacturer	
	inhalation vapour	LC50 0,5 mg/l		Manufacturer	
	inhalation (4 h) dust/mist	LC50 0,51 mg/l		Manufacturer	

Irritation and corrosivity

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

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.

SECTION 12: Ecological information

12.1. Toxicity

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

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
7664-38-2	phosphoric acid; orthophosphoric acid					
	Acute fish toxicity	LC50	3 mg/l	96 h	Lepomis macrochirus (Bluegill)	Manufacturer
	Acute algae toxicity	ErC50 mg/l	>100	72 h	Desmodesmus subspicatus	Manufacturer OECD 201
	Acute crustacea toxicity	EC50 mg/l	>100	48 h	Daphnia magna (Big water flea)	Manufacturer OECD 202
	Acute bacteria toxicity	(EC50 mg/l)	>1000	3 h	Activated sludge	Manufacturer OECD 209
7758-99-8	copper sulphate pentahydrate					
	Acute fish toxicity	LC50	< 1 mg/l	96 h		Manufacturer
7446-08-4	Seleniumdioxide					
	Acute fish toxicity	LC50 mg/l	2,884	96 h		Manufacturer
	Acute algae toxicity	ErC50 mg/l	61,94	72 h		Manufacturer
	Acute crustacea toxicity	EC50 mg/l	0,77	48 h		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
7446-08-4	Seleniumdioxide	944		

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

060313 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions containing heavy metals; hazardous waste

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List of Wastes Code - used product

060313 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; solid salts and solutions containing heavy metals; hazardous waste

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: UN 3264
14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Classification code: C1
 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 3264
14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Classification code: C1
 Special Provisions: 274
 Limited quantity: 5 L
 Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number or ID number: UN 3264
14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, 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

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Segregation group: 1 - acids

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3264
14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



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

14.6. 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

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): 2 - obviously 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%

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Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Aquatic Chronic 3; H412	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
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.
H412	Harmful 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.)