

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 1 of 12

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

Chrome electrolyte

UFI: A1EW-A94P-800X-CX8V

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

Electrolyte for galvanic applications.

Uses advised against

No data 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,
Mon-Thu 9:00 - 16:00; Fri 9:00 - 14:00**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**Skin Irrit. 2; H315
Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements**GB CLP Regulation**

Signal word: Warning

Pictograms:

**Hazard statements**H315 Causes skin irritation.
H319 Causes serious eye irritation.**Precautionary statements**P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P280 Wear protective gloves and eye/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.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 2 of 12

2.3. Other hazards

No further relevant information available.

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)			
64-18-6	formic acid			5 - < 10 %
	200-579-1			
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1A, Eye Dam. 1; H226 H331 H302 H314 H318 EUH071			
12336-95-7	chromium(III) sulphate, basic			1.9 - < 5 %
	235-595-8			
	Acute Tox. 3; H331			
1336-21-6	ammonia			1 - < 1.9 %
	215-647-6		01-2119488876-14	
	Skin Corr. 1B, Eye Dam. 1, STOT SE 3, Aquatic Acute 1, Aquatic Chronic 2; H314 H318 H335 H400 H411			

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	
64-18-6	200-579-1	formic acid	5 - < 10 %
		inhalation: LC50 = 7,85 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 730 mg/kg Skin Corr. 1A; H314: >= 90 - 100 Skin Corr. 1B; H314: >= 10 - < 90 Skin Irrit. 2; H315: >= 2 - < 10 Eye Irrit. 2; H319: >= 2 - < 10	
12336-95-7	235-595-8	chromium(III) sulphate, basic	1.9 - < 5 %
		inhalation: LC50 = < 4,58 mg/l (dusts or mists); oral: LD50 = 3530 mg/kg	
1336-21-6	215-647-6	ammonia	1 - < 1.9 %
		STOT SE 3; H335: >= 5 - 100	

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

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

After inhalation

Provide fresh air. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. If irritation symptoms persist, consult a doctor.

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

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. In case of troubles or persistent symptoms, consult a doctor.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 3 of 12

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**Carbon dioxide (CO₂), foam, extinguishing powder, water spray.

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

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixtureThe product itself does not burn. Upon heating and in case of fire, the following may be released: sulfur oxides (SO_x), nitrogen oxides (NO_x). Ammonia (NH₃), Hydrogen sulphide.

Carbon monoxide may be produced if combustion is incomplete. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Match protective equipment to the size of the fire.

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 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. Place in suitable and sealed containers for disposal.

Other information

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**

Ensure adequate ventilation or extraction at the workplace, especially in enclosed spaces. Avoid formation of aerosols. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 4 of 12

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, drink, smoke, sniff. Remove contaminated, saturated clothing immediately.

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

Keep container tightly closed.

Hints on joint storage

No special measures are necessary.

7.3. Specific end use(s)

Electrolyte for galvanic applications.

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

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7664-41-7	Ammonia, anhydrous	25	18		TWA (8 h)	WEL
		35	25		STEL (15 min)	WEL
64-18-6	Formic acid	5	9.6		TWA (8 h)	WEL

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 5 of 12

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
64-18-6	formic acid			
Worker DNEL, long-term		inhalation	systemic	9,5 mg/m ³
Worker DNEL, long-term		inhalation	local	9,5 mg/m ³
Worker DNEL, acute		inhalation	systemic	19 mg/m ³
Worker DNEL, acute		inhalation	local	19 mg/m ³
Consumer DNEL, long-term		inhalation	systemic	3 mg/m ³
Consumer DNEL, long-term		inhalation	local	3 mg/m ³
1336-21-6	ammonia			
Worker DNEL, acute		dermal	systemic	6,8 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	6,8 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	47,6 mg/m ³
Worker DNEL, acute		inhalation	local	36 mg/m ³
Worker DNEL, long-term		inhalation	systemic	47,6 mg/m ³
Worker DNEL, long-term		inhalation	local	14 mg/m ³
Consumer DNEL, acute		dermal	systemic	68 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	68 mg/kg bw/day
Consumer DNEL, acute		inhalation	systemic	23,8 mg/m ³
Consumer DNEL, acute		inhalation	local	7,2 mg/m ³
Consumer DNEL, long-term		inhalation	systemic	23,8 mg/m ³
Consumer DNEL, long-term		inhalation	local	2,8 mg/m ³
Consumer DNEL, acute		oral	systemic	6,8 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	6,8 mg/kg bw/day

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 6 of 12

PNEC values

CAS No	Substance	Value
Environmental compartment		
64-18-6	formic acid	
Freshwater		2 mg/l
Freshwater (intermittent releases)		1 mg/l
Marine water		0,2 mg/l
Freshwater sediment		13,4 mg/kg
Marine sediment		1,34 mg/kg
Micro-organisms in sewage treatment plants (STP)		7,2 mg/l
Soil		1,5 mg/kg
12336-95-7	chromium(III) sulphate, basic	
Freshwater		0,027 mg/l
Freshwater (intermittent releases)		0,027 mg/l
Marine water		0,027 mg/l
Marine water (intermittent releases)		0,027 mg/l
Freshwater sediment		31 mg/kg
1336-21-6	ammonia	
Freshwater		0,0011 mg/l
Freshwater (intermittent releases)		0,0068 mg/l
Marine water		0,0011 mg/l
Marine water (intermittent releases)		0,0068 mg/l

8.2. Exposure controls



Individual protection measures, such as personal protective equipment

Eye/face protection

Tight sealing protective goggles (DIN EN 166).

Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

Suitable gloves type: Butyl caoutchouc (butyl rubber)

Breakthrough time: > 480 min

Thickness of the glove material: 0,5 mm

Skin protection

If there can be contact with skin, wear protective clothes impermeable by this solution.

Respiratory protection

No noteworthy dangers to be expected when used as intended.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 7 of 12

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

Physical state:	Liquid
Colour:	dunkelgrün
Odour:	stinging

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

Explosive properties

The product is not: Explosive.

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH-Value (at 25 °C):	3,3
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
The product is 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

React violently with bases.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 8 of 12

10.4. Conditions to avoid

heat.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

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
64-18-6	formic acid				
	oral	LD50 mg/kg 730	Rat	Pre-supplier/manufact urer	
	dermal	LD50 mg/kg > 2000	Rat	Pre-supplier/manufact urer	OECD 402
	inhalation (4 h) vapour	LC50 7,85 mg/l	Rat	Pre-supplier/manufact urer	
12336-95-7	chromium(III) sulphate, basic				
	oral	LD50 mg/kg 3530	Rat	Pre-supplier/manufact urer	
	inhalation (4 h) dust/mist	LC50 mg/l < 4,58	Rat	Pre-supplier/manufact urer	OECD 403

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

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.

Further 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.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 9 of 12

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
64-18-6	formic acid					
	Acute fish toxicity	LC50	130 mg/l	96 h	Danio rerio (zebrafish)	Pre-supplier/manu facturer
	Acute algae toxicity	ErC50 mg/l	> 1000	72 h	Desmodesmus subspicatus	Pre-supplier/manu facturer
	Acute crustacea toxicity	EC50	365 mg/l	48 h	Daphnia magna (Big water flea)	Pre-supplier/manu facturer
1336-21-6	ammonia					
	Acute fish toxicity	LC50 mg/l	0,89	96 h	Oncorhynchus mykiss (Rainbow trout)	Manufacturer
	Acute crustacea toxicity	EC50	101 mg/l	48 h	Daphnia magna (Big water flea)	Manufacturer ASTM E 729-80
	Fish toxicity	NOEC mg/l	0,06	27 d	Ictalurus punctatus (Channel Catfish)	Manufacturer
	Crustacea toxicity	NOEC mg/l	0,79	4 d	Daphnia magna (Big water flea)	Manufacturer OPPTS 850.1300

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-18-6	formic acid			
	DOC reduction (OECD 301A)	> 90%		

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64-18-6	formic acid	-2,1
1336-21-6	ammonia	-1,38

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

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 10 of 12

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

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 40

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

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

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

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 11 of 12

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%
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
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
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
ICAO: International Civil Aviation Organization
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 GB CLP Regulation

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

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
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.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Safety Data Sheet

according to UK REACH Regulation

Chrome electrolyte

Revision date: 31.07.2023

Product code: 0111

Page 12 of 12

EUH071 Corrosive to the respiratory tract.

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.)