

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 1 of 9

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

Nickel electrolyte

UFI: 621F-MAT4-P00R-MV1W

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

Electroplating

**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:	0941 / 29020439	Telefax: 0941 / 29020593
e-mail:	info@marawe.de	
Contact person:	Dr. Peter Raster, Dr. Stefan Weiss, Dr. Jonas Mark	
e-mail:	info@marawe.de	
Internet:	www.marawe.de	

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

Hazard categories:

Respiratory or skin sensitisation: Resp. Sens. 1

Respiratory or skin sensitisation: Skin Sens. 1

Germ cell mutagenicity: Muta. 2

Carcinogenicity: Carc. 1A

Reproductive toxicity: Repr. 1B

Specific target organ toxicity - repeated exposure: STOT RE 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer by inhalation.

May damage the unborn child.

Causes damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

nickel sulfate

**Signal word:** Danger**Pictograms:****Hazard statements**

H317

May cause an allergic skin reaction.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 2 of 9

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360D	May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash Hände thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P284	Wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P362+P364	Take off contaminated clothing and wash it before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container to sachgerechter Entsorgung.

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

CAS No	Chemical name	Quantity
	EC No	
	Index No	
	REACH No	
	GHS Classification	
7786-81-4	nickel sulfate	10 - < 15 %
	232-104-9	028-009-00-5
	Carc. 1A, Muta. 2, Repr. 1B, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360D H332 H302 H315 H334 H317 H372 H400 H410	
11113-50-1	boric acid	1.9 - < 5 %
	234-343-4	005-007-00-2
	Repr. 1B; H360FD	

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

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 3 of 9

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
7786-81-4	232-104-9	nickel sulfate	10 - < 15 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg Skin Irrit. 2; H315: >= 20 - 100 Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 M akut; H400: M=1 M chron.; H410: M=1		
11113-50-1	234-343-4	boric acid	1.9 - < 5 %
	Repr. 1B; H360FD: >= 5,5 - 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. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

**After contact with skin**

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

**After contact with eyes**

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

**After ingestion**

Rinse mouth immediately and drink plenty of water. Induce vomiting when the affected person is not unconscious. Medical treatment necessary.

**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**

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

**5.2. Special hazards arising from the substance or mixture**

Non-flammable.

**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 measures**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and

# Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Nickel electrolyte

Revision date: 29.03.2021

Product code: 0117

Page 4 of 9

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**

#### **Other information**

Absorb with liquid-binding material (e.g. 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**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. The electrolyte contains nickel sulfate, therefore a potent exhaustion has to be used.

#### **Advice on protection against fire and explosion**

No special fire protection measures are necessary.

### **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.

#### **Hints on joint storage**

No special measures are necessary.

#### **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)**

Electroplating

## **SECTION 8: Exposure controls/personal protection**

### **8.1. Control parameters**

### **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.

#### **Protective and hygiene measures**

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.

#### **Eye/face protection**

Wear eye protection/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.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 5 of 9

**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:	green	
pH-Value (at 25 °C):		2

**Changes in the physical state**

Melting 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

**Oxidizing properties**

Not oxidising.		
Vapour pressure:		not determined
Density:		not determined
Water solubility:		easily soluble

**Solubility in other solvents**

not determined		
Partition coefficient n-octanol/water:		not determined
Relative vapour density:		not determined
Evaporation rate:		not determined

**9.2. Other information**

Solid content:		not determined
----------------	--	----------------

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

React violently with bases.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

10.1

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 6 of 9

**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 Regulation (EC) No 1272/2008****Acute toxicity**

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7786-81-4	nickel sulfate				
	oral	ATE 500 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation aerosol	ATE 1,5 mg/l			

**Irritation and corrosivity**

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

**Sensitising effects**

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (nickel sulfate)

May cause an allergic skin reaction. (nickel sulfate)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Suspected of causing genetic defects. (nickel sulfate)

May cause cancer by inhalation. (nickel sulfate)

May damage the unborn child. (nickel sulfate)

**STOT-single exposure**

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

**STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure. (nickel sulfate)

**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]. Special hazards arising from the substance or mixture!

**SECTION 12: Ecological information****12.1. Toxicity**

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

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

The product has not been tested.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
11113-50-1	boric acid	-1,09

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 7 of 9

**12.4. Mobility in soil**

The product has not been tested.

**12.5. Results of PBT and vPvB assessment**

The product has not been tested.

**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

**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

**List of Wastes Code - contaminated packaging**

060315 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the MFSU of salts and their solutions and metallic oxides; metallic oxides containing heavy metals; hazardous waste

**Contaminated packaging**

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

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

<b><u>14.1. UN number:</u></b>	UN 3082
<b><u>14.2. UN proper shipping name:</u></b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
<b><u>14.3. Transport hazard class(es):</u></b>	9
<b><u>14.4. Packing group:</u></b>	III
Hazard label:	9
Classification code:	M6
Special Provisions:	274 335 601
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	90
Tunnel restriction code:	E

**Inland waterways transport (ADN)**

<b><u>14.1. UN number:</u></b>	UN 3082
<b><u>14.2. UN proper shipping name:</u></b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
<b><u>14.3. Transport hazard class(es):</u></b>	9
<b><u>14.4. Packing group:</u></b>	III
Hazard label:	9
Classification code:	M6

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 8 of 9

Special Provisions: 274 335 601  
 Limited quantity: 5 L  
 Excepted quantity: E1

**Marine transport (IMDG)**

**14.1. UN number:** UN 3082  
**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**14.3. Transport hazard class(es):** 9  
**14.4. Packing group:** III  
 Hazard label: 9  
 Special Provisions: 274, 335  
 Limited quantity: 5 L  
 Excepted quantity: E1  
 EmS: F-A, S-F

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number:** UN 3082  
**14.2. UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**14.3. Transport hazard class(es):** 9  
**14.4. Packing group:** III  
 Hazard label: 9  
 Special Provisions: A97 A158  
 Limited quantity Passenger: 30 kg G  
 Passenger LQ: Y964  
 Excepted quantity: E1  
 IATA-packing instructions - Passenger: 964  
 IATA-max. quantity - Passenger: 450 L  
 IATA-packing instructions - Cargo: 964  
 IATA-max. quantity - Cargo: 450 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**

Authorisations (REACH, annex XIV):  
 Substances of very high concern, SVHC (REACH, article 59):  
 boric acid

Restrictions on use (REACH, annex XVII):  
 Entry 3, Entry 27, Entry 30

**Additional information**

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

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.  
 Water hazard class (D): 3 - highly hazardous to water



**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Nickel electrolyte**

Revision date: 29.03.2021

Product code: 0117

Page 9 of 9

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**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 Regulation (EC) No. 1272/2008 [CLP]**

Classification	Classification procedure
Resp. Sens. 1; H334	Calculation method
Skin Sens. 1; H317	Calculation method
Muta. 2; H341	Calculation method
Carc. 1A; H350i	Calculation method
Repr. 1B; H360D	Calculation method
STOT RE 1; H372	Calculation method
Aquatic Chronic 2; H411	Calculation method

**Relevant H and EUH statements (number and full text)**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360D	May damage the unborn child.
H360FD	May damage fertility. May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
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.)*