

according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 1 of 13

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

1.1. Product identifier

Redox-Nickel

UFI: 0630-W0A3-W000-9FDG

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

Use of the substance/mixture

Electroless / chemical nickel plating of metals

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: Thomas Henning e.K.
Street: Buschurweg 4
Place: D-76870 Kandel
Telephone: +49 7275 94 78 199
E-mail: info@drgalva.com
Internet: drgalva.net

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

Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

Lactic acid nickel sulfate nickel dichloride nickel sulfamate nickel di(acetate)

diammonium nickel bis(sulfate)

Signal word: Danger

Pictograms:





Hazard statements

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 2 of 13

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves and eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P501 Do not discard content with household waste and forward for disposal according to

regional/national guidelines.

Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

2.3. Other hazards

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

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 3 of 13

Relevant ingredients

CAS No	Chemical name	Quantity		
	EC No	Index No	REACH No	
	Classification (Regulation (EC			
50-21-5	Lactic acid	3 - < 5 %		
	200-018-0			
	Skin Corr. 1C, Eye Dam. 1; H	314 H318 EUH071		
7786-81-4	nickel sulfate			< 0,1 %
	232-104-9	028-009-00-5	01-2119439361-44	
			n Irrit. 2, Resp. Sens. 1, Skin Sens. 1, 1 H360D H332 H302 H315 H334	
7718-54-9	nickel dichloride			< 0,1 %
	231-743-0	028-011-00-6	01-2119486973-20	
	Carc. 1A, Muta. 2, Repr. 1B, A STOT RE 1, Aquatic Acute 1, H317 H372 H400 H410			
13770-89-3	nickel sulfamate	< 0,1 %		
	237-396-1	028-018-00-4	01-2119488202-41	
	Carc. 1A, Muta. 2, Repr. 1B, Acute 1, Aquatic Chronic 1; H			
373-02-4	nickel di(acetate)			< 0,1 %
	206-761-7	028-022-00-6	01-2119488197-24	
	Carc. 1A, Muta. 2, Repr. 1B, A1, Aquatic Acute 1, Aquatic CH410			
15699-18-0	diammonium nickel bis(sulfate	< 0.1 %		
	239-793-5	028-017-00-9		
	Carc. 1A, Muta. 2, Repr. 1B, 7 1, Aquatic Acute 1, Aquatic C H410			

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



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 4 of 13

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc.	Limits, M-factors and ATE	
50-21-5	200-018-0	Lactic acid	3 - < 5 %
	Eye Dam. 1; H3	318: >= 3 - 100 Eye Irrit. 2; H319: >= 1 - < 3	
7786-81-4	232-104-9	nickel sulfate	< 0,1 %
	mg/kg Skin Irr		
7718-54-9	231-743-0	nickel dichloride	< 0,1 %
	- 681 mg/kg S		
13770-89-3	237-396-1	nickel sulfamate	< 0,1 %
	I		
373-02-4	206-761-7	nickel di(acetate)	< 0,1 %
		•	
15699-18-0	239-793-5	diammonium nickel bis(sulfate)	< 0.1 %
	I		

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.

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. Call a physician immediately.



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 5 of 13

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

May cause an allergic skin reaction. Causes skin irritation. Causes serious eye damage. Corrosive to the respiratory tract.

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.

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

Avoid breathing dust/fume/gas/mist/vapours/spray. 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

For containment

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Wear personal protection equipment. Treat the recovered material as prescribed in the section on waste disposal.

For cleaning up

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

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



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 6 of 13

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)

Electroless / chemical nickel plating of metals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
-	Nickel inorganic compounds (as Ni), respirable fraction		0,01		TWA (8 h)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
-	Nickel compounds	Ni	3 μg/L		After several consecutive working shifts

Additional advice on limit values

Currently there are no further exposure limits available.

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation.

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.

Suitable material:: Butyl rubber.
Thickness of glove material: >0.3 mm

penetration time (maximum wearing period): >480 min.

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

Protective clothing: Chemical resistant safety shoes

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.



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 7 of 13

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: green
Odour: characteristic

Melting point/freezing point:

Boiling point or initial boiling point and

no data available

100 °C

boiling range:

no data available Flammability: Lower explosion limits: no data available Upper explosion limits: no data available Flash point: not applicable Auto-ignition temperature: no data available Decomposition temperature: no data available 4 7-5 2 pH-Value (at 20 °C): Viscosity / kinematic: no data available Water solubility: no data available

Solubility in other solvents no data available

Dissolution rate: no data available Partition coefficient n-octanol/water: no data available Dispersion stability: no data available Vapour pressure: no data available Vapour pressure: no data available Density: 1,0-1,1 g/cm³ Relative density: no data available no data available Bulk density: no data available Relative vapour density: no data available Particle characteristics:

9.2. Other information

Information with regard to physical hazard classes

Explosive properties not Explosive.
Self-ignition temperature

Solid: no data available
Gas: no data available

Oxidizing properties no data available

Other safety characteristics

no data available Evaporation rate: Solvent separation test: no data available Solvent content: no data available Solid content: no data available Sublimation point: no data available Softening point: no data available Pour point: no data available no data available Viscosity / dynamic: no data available Flow time: no data available



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 8 of 13

Further Information

no data available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No dangerous reactivity under regular conditions.

10.4. Conditions to avoid

Protect against contaminations.

10.5. Incompatible materials

Oxidising substances

Base

10.6. Hazardous decomposition products

Upon exposure to fire, harmful gases may be emitted. Nitrogen oxides (NOx). Metal oxides.

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.

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 9 of 13

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
7786-81-4	nickel sulfate					·
	oral	ATE mg/kg	500			
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1,5 mg/l			
7718-54-9	nickel dichloride					
	oral	LD50 mg/kg	105 - 681	Rat	GESTIS	
	inhalation vapour	ATE	3 mg/l			
	inhalation dust/mist	ATE	0,5 mg/l			
13770-89-3	770-89-3 nickel sulfamate					
	oral	ATE 853	mg/kg			
373-02-4	nickel di(acetate)					
	oral	ATE mg/kg	500			
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1,5 mg/l			
15699-18-0	diammonium nickel bis(sulfate)					
	oral	ATE mg/kg	500			
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1,5 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.

Serious eye damage/eye irritation: Causes serious eye damage.

Corrosive to the respiratory tract.

Sensitising effects

May cause an allergic skin reaction. (nickel sulfate; nickel dichloride; nickel sulfamate; nickel di(acetate); diammonium nickel bis(sulfate))

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

Reproductive toxicity: 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.

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 12: Ecological information

12.1. Toxicity



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 10 of 13

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

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

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

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 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 transp	ort (ADR/RID)
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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



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 11 of 13

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 27, Entry 28, Entry 30, Entry 65, Entry 75

Information according to Directive

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

2012/18/EU (SEVESO III):

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 2019/1021 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

Employment restrictions: Observe employment restrictions under the Maternity Protection Directive

(92/85/EEC) for expectant or nursing mothers. Observe employment

restrictions for women of child-bearing age.

Water hazard class (D): 1 - slightly hazardous to water

Additional information

Observe in addition any national regulations!

15.2. Chemical safety assessment

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

nickel sulfate

nickel dichloride

nickel sulfamate

nickel di(acetate)

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,3,4,7,8,9,15,16.

Version 1,00 - 25.03.2021 - first creation

Version 1,01 - 03.12.2021 - Change and revision of the SDS because of new information / recipe

Version 1,02 - 29.09.2023 - Change and revision of the SDS because of new information / recipe

Version 1.03 - 08.04.2025- Change and revision of the SDS because of new information / recipe



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 12 of 13

Abbreviations and acronyms

Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eye Dam: Eye damage

Resp. Sens: Respiratory sensitisation

Skin Sens: Skin sensitisation Muta: Germ cell mutagenicity Carc: Carcinogenicity Repr: Reproductive toxicity

STOT RE: Specific target organ toxicity - repeated exposure

Aquatic Acute: Acute aquatic hazard Aquatic Chronic: Chronic aquatic hazard

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement

concerning the International Carriage of Dangerous Goods by Road)

BImSchV (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

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
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method



according to Regulation (EC) No 1907/2006

Redox-Nickel

Revision date: 08.04.2025 Product code: DG-014 Page 13 of 13

Relevant H and EUH statements (number and full text)

H301	Toxic if swallowed.
H302	Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.
H318 Causes serious eve damage.

H331 Toxic if inhaled.
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.

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.

EUH071 Corrosive to the respiratory tract.

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:

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