

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 1 of 14

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

1.1. Product identifier

Free-Nickel

UFI: WX20-D07W-Y00H-AEN9

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

Use of the substance/mixture

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

Met. Corr. 1; H290
Skin Irrit. 2; H315
Eye Dam. 1; H318
Skin Sens. 1; H317
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

Succinic acid
diammonium nickel bis(sulfate)
nickel sulfate
nickel dichloride
nickel sulfamate
nickel di(acetate)
nickel dibromide

Signal word:

Danger

Pictograms:



Hazard statements

H290 May be corrosive to metals.
H315 Causes skin irritation.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 2 of 14

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
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.
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.
P310	Immediately call a POISON CENTER/doctor.
P501	Do not discard content with household waste and forward for disposal according to regional/national guidelines.

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 3 of 14

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
110-15-6	Succinic acid			<3 %
	203-740-4			
	Eye Dam. 1; H318			
124-04-9	adipic acid			<3 %
	204-673-3	607-144-00-9		
	Eye Irrit. 2; H319			
110-94-1	Glutaric acid			<3 %
	203-817-2			
	Skin Corr. 1A, Eye Dam. 1; H314 H318			
1310-73-2	sodium hydroxide; caustic soda			<2 %
	215-185-5	011-002-00-6	01-2119457892-27	
	Met. Corr. 1, Skin Corr. 1A, Eye Dam. 1; H290 H314 H318			
15699-18-0	diammonium nickel bis(sulfate)			<0,1 %
	239-793-5			
	Carc. 1A, Muta. 2, Repr. 1B, Acute Tox. 4, Acute Tox. 4, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360D H332 H302 H334 H317 H372 H400 H410			
7786-81-4	nickel sulfate			<0,1 %
	232-104-9	028-009-00-5	01-2119439361-44	
	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			
7718-54-9	nickel dichloride			<0,1 %
	231-743-0	028-011-00-6	01-2119486973-20	
	Carc. 1A, Muta. 2, Repr. 1B, Acute Tox. 3, Acute Tox. 3, Skin Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360D H331 H301 H315 H334 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 Tox. 4, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360D H302 H334 H317 H372 H400 H410			
373-02-4	nickel di(acetate)			<0,1 %
	206-761-7	028-022-00-6	01-2119488197-24	
	Carc. 1A, Muta. 2, Repr. 1B, Acute Tox. 4, Acute Tox. 4, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360D H332 H302 H334 H317 H372 H400 H410			
13462-88-9	nickel dibromide			<0,1 %
	236-665-0	028-029-00-4		
	Carc. 1A, Muta. 2, Repr. 1B, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360D H334 H317 H372 H400 H410			

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 4 of 14

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
124-04-9	204-673-3	adipic acid	<3 %
		inhalation: LC50 = > 7,7 mg/l (dusts or mists); oral: LD50 = ca. 5700 mg/kg	
1310-73-2	215-185-5	sodium hydroxide; caustic soda	<2 %
		Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2	
15699-18-0	239-793-5	diammonium nickel bis(sulfate)	<0,1 %
		inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=10 Aquatic Chronic 1; H410: M=10	
7786-81-4	232-104-9	nickel sulfate	<0,1 %
		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 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	
7718-54-9	231-743-0	nickel dichloride	<0,1 %
		inhalation: ATE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); oral: LD50 = 105 - 681 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 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	
13770-89-3	237-396-1	nickel sulfamate	<0,1 %
		oral: ATE 853 mg/kg Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	
373-02-4	206-761-7	nickel di(acetate)	<0,1 %
		inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	
13462-88-9	236-665-0	nickel dibromide	<0,1 %
		Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	

Further Information

diammonium nickel bis(sulfate): Index: 028-017-00-9

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 5 of 14

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.

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

May cause an allergic skin reaction. Skin contact may cause skin irritation.
Following eye contact: Causes serious eye damage.

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. Metal oxides.

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 6 of 14

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

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.

Further information on storage conditions

Corrosive to metals

7.3. Specific end use(s)

Nickel plating of metals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
124-04-9	Adipic acid	-	5		TWA (8 h)	
-	Nickel inorganic compounds (as Ni), respirable fraction	-	0,01		TWA (8 h)	
1310-73-2	Sodium hydroxide	-	2		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
-	Nickel compounds	Ni	3 µg/L	Urine	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. Provide protection equipment (eye wash bottles, etc.).

Individual protection measures, such as personal protective equipment

Eye/face protection

Tightly sealed safety glasses.

Wear additional facial protection if facial contact with this substance is possible through splashing, spraying or material in the air.

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 7 of 14

Suitable material:: NBR (Nitrile 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.
 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:		no data available
Boiling point or initial boiling point and boiling range:		100 °C
Flammability:		no data available
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
pH-Value (at 20 °C):		approx. 4,2
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
Density:		1,0-1,1 g/cm³
Relative density:		no data available
Bulk density:		no data available
Relative vapour density:		no data available
Particle characteristics:		no data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties	
not Explosive.	
Self-ignition temperature	
Solid:	no data available

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 8 of 14

Oxidizing properties
no data available

Other safety characteristics

Viscosity / dynamic: no data available

Further Information

no data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals

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 (NO_x). 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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 9 of 14

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
124-04-9	adipic acid				
	oral	LD50 ca. 5700 mg/kg	Rat		
	inhalation (4 h) dust/mist	LC50 > 7,7 mg/l	Rat		
15699-18-0	diammonium nickel bis(sulfate)				
	oral	ATE 500 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			
7786-81-4	nickel sulfate				
	oral	ATE 500 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			
7718-54-9	nickel dichloride				
	oral	LD50 105 - 681 mg/kg	Rat	GESTIS	
	inhalation vapour	ATE 3 mg/l			
	inhalation dust/mist	ATE 0,5 mg/l			
13770-89-3	nickel sulfamate				
	oral	ATE 853 mg/kg			
373-02-4	nickel di(acetate)				
	oral	ATE 500 mg/kg			
	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.

Sensitising effects

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

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 10 of 14

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
124-04-9	adipic acid					
	Acute fish toxicity	LC50	230 mg/l	96 h	Leuciscus idus	

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
124-04-9	adipic acid	0,081

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 transport (ADR/RID)

14.1. UN number or ID number:

UN 3261

14.2. UN proper shipping name:

CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Glutaric acid)

14.3. Transport hazard class(es):

8

14.4. Packing group:

III

Hazard label:

8



Classification code:

C4

Special Provisions:

274

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 11 of 14

Limited quantity: 5 kg
 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 3261
14.2. UN proper shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Glutaric acid)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Classification code: C4
 Special Provisions: 274
 Limited quantity: 5 kg
 Excepted quantity: E1

Marine transport (IMDG)

14.1. UN number or ID number: UN 3261
14.2. UN proper shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Glutaric acid)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Special Provisions: 223 274
 Limited quantity: 5 kg
 Excepted quantity: E1
 EmS: F-A, S-B
 Segregation group: 1 - acids

Air transport (ICAO-TI/ATA-DGR)

14.1. UN number or ID number: UN 3261
14.2. UN proper shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Glutaric acid)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
 Hazard label: 8



Special Provisions: A3 A803
 Limited quantity Passenger: 5 kg
 Passenger LQ: Y845
 Excepted quantity: E1
 IATA-packing instructions - Passenger: 860
 IATA-max. quantity - Passenger: 25 kg
 IATA-packing instructions - Cargo: 864
 IATA-max. quantity - Cargo: 100 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 12 of 14

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 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

Water hazard class (D):

2 - obviously 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:

sodium hydroxide; caustic soda

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): 1,2,7,8,10,14,16.

Version 1,00 - 18.03.2021 - first creation

Version 1,01 - 01.12.2021 - Change and revision of the SDS because of new information / recipe

Version 1,02 - 19.09.2023 - Change and revision of the SDS because of new information / recipe

Version 1,03 - 19.02.2024 - Change and revision of the SDS because of new information / recipe

Version 1,04 - 05.08.2024 - Adjustments in sections 1

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 13 of 14

Abbreviations and acronyms

Met. Corr. 1: Corrosive to metals, hazard category 1
 Acute Tox. 3: Acute toxicity, hazard category 3
 Skin Corr. 1A: Skin corrosion, sub-category 1A
 Skin Irrit. 2: Skin irritation, hazard category 2
 Eye Dam. 1: Serious eye damage, hazard category 1
 Eye Irrit. 2: Eye irritation, hazard category 2
 Resp. Sens. 1: Respiratory sensitisation, hazard category 1
 Skin Sens. 1: Skin sensitisation, hazard category 1
 Muta. 2: Germ cell mutagenicity, hazard category 2
 Carc. 1A: Carcinogenicity, hazard category 1A
 Repr. 1B: Reproductive toxicity, hazard category 1B
 STOT RE 1: Specific target organ toxicity - repeated exposure, hazard category 1
 Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1
 Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard category: Chronic 1
 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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Free-Nickel

Revision: 05.08.2024

Product code: DG-004

Page 14 of 14

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
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.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
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.
H412	Harmful to aquatic life with long lasting effects.

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