750 WL1 Ni

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

1.1 Product identifier

Product identifier	:	750 WL1 Ni
Product code	:	300000000062
Unique Formula Identifier (UFI)	:	R4Y1-G0YK-Y002-TWTU

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

Use of the Substance/Mixture	:	wires, sheets metal, tubes

1.3 Details of the supplier of the safety data sheet

Company	:	Agosi AG Kanzlerstrasse 17 75175 Pforzheim Germany
Telephone	:	+49 7231 960-0
E-mail address of person responsible for the SDS	:	EHS-Info@agosi.de

1.4 Emergency telephone number

Poison Center

Telephone	:	+49 30 192 40
Hours of operation	:	24HRS

Supplier

Emergency telephone number	:	For transport in Europe, Central- and South America, Israel and Africa (Non-Arabic speaking countries): (+32) 3 213 15 70 For transport in the Middle East (Israel excluded) & Arabic speaking Africa: (+32) 3 213 33 79 For transport in the USA and Canada: (+1)-877 986 4267 For transport in Asian and the Pacific (China excluded): (+65) 62 64 78 36 For transport in China: (+86) 400 120 60 11
Hours of operation	:	This telephone number is available 24 hours per day, 7 days per week.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements :

Prevention:

P201	Obtain special instructions before use.
P260	Do not breathe dust.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Hazardous components which must be listed on the label:

Nickel

Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 55 %
The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 70 %
The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 55 %
The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 70 %

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Nickel	7440-02-0 231-111-4 028-002-00-7 01-2119438727-29	Skin Sens. 1; H317 Carc. 2; H351 STOT RE 1; H372	<= 15
silver	7440-22-4 231-131-3 047-004-00-9 01-2119555669-21	STOT RE 2; H373 (Nervous system)	<= 10
Substances with a workplace exposure limit :			
zinc	7440-66-6 231-175-3 030-001-01-9 01-2119467174-37		<= 15

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Do not leave the victim unattended.
Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.

In case of skin contact : Cover wound with sterile dressing.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact	:	Remove contact lenses. Flush eyes with water as a precaution. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Skin contact may provoke the following symptoms: Allergic reactions
Risks	:	May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Not combustible.
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	:	Metal oxides Nickel compounds Silver compounds

5.3 Advice for firefighters

Special protective equipment for firefighters	:	No special protective equipment required.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Avoid contact with skin.

Refer to protective measures listed in sections 7 and 8.
Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up and transfer to properly labelled containers.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be empl oyed in any process in which this mixture is being used.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510) : 6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

Further information on storage stability : Keep in a dry place.
No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Please refer to section 1

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Nickel	7440-02-0	AGW (Alveolate fraction)	0,006 mg/m3 (Nickel)	DE TRGS 900
	Peak-limit: excursion factor (category): 8;(II)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Substance sensitizing through the skin			
		TWA (Respirable dust)	0,01 mg/m3	2004/37/EC
	Further information: dermal and respiratory sensitisation, Carcinogens or mutagens			
		TWA (inhalable fraction)	0,05 mg/m3	2004/37/EC
	Further information: dermal and respiratory sensitisation, Carcinogens or mutagens			
		TWA (Inhalable particulate matter)	1,5 mg/m3	ACGIH
zinc	7440-66-6	MAK (measured as the alveolate fraction)	0,1 mg/m3	DE DFG MAK
	Peak-limit: excursion factor (category): 4; I			
	Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		MAK (inhalable fraction)	2 mg/m3	DE DFG MAK
	Peak-limit: excursion factor (category): 4; I			
	Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		TWA	3 mg/m3	ACGIH
		TWA (inhalable fraction)	10 mg/m3	ACGIH
		TWA (Total dust)	15 mg/m3	OSHA/Z2
		TWA	3 mg/m3	ACGIH
silver	7440-22-4	TWA	0,01 mg/m3 (Silver)	2006/15/EC
	Further information: Indicative			
		TWA	0,1 mg/m3	2000/39/EC
	Further information: Indicative			
		AGW (Inhalable fraction)	0,1 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 8;(II)			
		MAK (inhalable fraction)	0,1 mg/m3	DE DFG MAK
	Peak-limit: excursion factor (category): 8; II			

	Further information: Either there are no data for an assessment of damage to the embryo or foetus, including developmental neurotoxicity, or the currently available data are not sufficient for classification in one of the groups A - C			
		TWA (Dust and fume)	0,1 mg/m3	ACGIH

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Nickel	7440-02-0	Nickel (Nickel): 5 µg/l (Urine)	End of shift at end of workweek	ACGIH BEI
		Nickel (Nickel): 30 µg/l (Urine)	End of shift at end of workweek	ACGIH BEI

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Nickel	Consumers	Oral	Acute systemic effects	0,012 mg/kg
	Remarks:unit expressed as mg metal/kg			
	Consumers	Inhalation	Acute local effects	0,8 mg/m3
	Remarks:unit expressed as mg metal/m³			
	Consumers	Inhalation	Long-term systemic effects	0,00002 mg/m3
	Remarks:unit expressed as mg metal/m³			
	Consumers	Oral	Long-term systemic effects	0,02 mg/kg
	Remarks:unit expressed as mg metal/kg			
	Consumers	Inhalation	Long-term local effects	0,00002 mg/m3
	Remarks:unit expressed as mg metal/m³			
	Consumers	Dermal	Long-term local effects	0,035 mg/cm2
	Workers	Inhalation	Acute local effects	11,9 mg/m3
	Remarks:unit expressed as mg metal/m³			
	Workers	Inhalation	Long-term systemic effects	0,05 mg/m3
	Remarks:unit expressed as mg metal/m³			
	Workers	Inhalation	Long-term local effects	0,05 mg/m3
	Remarks:unit expressed as mg metal/m³			
	Workers	Dermal	Long-term local effects	0,035 mg/cm2
silver	Workers	Inhalation	Long-term systemic effects	0,1 mg/m3
	Consumers	Inhalation	Long-term systemic effects	0,04 mg/m3
	Consumers	Oral	Long-term systemic effects	1,2 mg/kg
zinc	Workers	Inhalation	Long-term systemic effects	5 mg/m3

	Workers	Dermal	Long-term systemic effects	83 mg/kg
	Consumers	Inhalation	Long-term systemic effects	2,5 mg/m3
	Consumers	Oral	Long-term systemic effects	0,83 mg/kg
	Consumers	Dermal	Long-term systemic effects	83 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Nickel	Fresh water	0,0071 mg/l
	Remarks:Sensitivity Distribution	
	Marine water	0,0086 mg/l
	Remarks:Sensitivity Distribution	
	Soil	29,9 mg/kg dry weight (d.w.)
	Remarks:Sensitivity Distribution	
	Sewage treatment plant	0,33 mg/l
	Remarks:Assessment Factors	
	Sediment	109 mg/kg
silver	Fresh water	0,00004 mg/l
	Remarks:Assessment Factors	
	Marine water	0,00086 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	438 mg/kg dry weight (d.w.)
	Remarks:Assessment Factors	
	Marine sediment	438 mg/kg dry weight (d.w.)
	Remarks:Assessment Factors	
	Soil	1,41 mg/kg dry weight (d.w.)
	Sewage treatment plant	0,025 mg/l
	Remarks:Assessment Factors	
zinc	Fresh water	0,0206 mg/l
	Marine water	0,0061 mg/l
	Sewage treatment plant	0,052 mg/l
	Fresh water sediment	117,8
	Marine sediment	56,5
	Soil	35,6

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Wear safety glasses with side shields or goggles.

Hand protection
Material : Leather gloves

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	massive form
Colour	:	grey
Odour	:	odourless
Melting point/ range	:	850 °C
Flammability	:	The product is not flammable.
Flash point	:	Not applicable
pH	:	substance/mixture is non-soluble (in water)
Solubility(ies) Water solubility	:	insoluble
Relative density	:	14,8
Density	:	14,8 g/cm3 (20 °C)

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable at normal ambient temperature and pressure.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Acids

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified due to lack of data.

Product:

Acute dermal toxicity : Remarks: No data available

Components:

Nickel:

Acute oral toxicity : LD50 (Rat, male and female): > 9.000 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : No observed adverse effect level (Rat, male and female): > 10,2 mg/l
Exposure time: 66 min
Test atmosphere: dust/mist
GLP: yes

Acute dermal toxicity : Assessment: No data available
Remarks: data waiving in REACH dossier

silver:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 402

zinc:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified due to lack of data.

Product:

Remarks : May cause skin irritation and/or dermatitis.

Components:

Nickel:

Species	:	Rabbit
Exposure time	:	4 h
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
GLP	:	yes

silver:

Species	:	Rabbit
Exposure time	:	72 h
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Not classified due to lack of data.

Product:

Remarks : No data available

Remarks : Product dust may be irritating to eyes, skin and respiratory system.

Components:

Nickel:

Species	:	Rabbit
Exposure time	:	48 h
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
GLP	:	yes
Remarks	:	Based on read across from structural related substance

silver:

Species	:	Guinea pig
Exposure time	:	72 h
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Product:

Remarks : Causes sensitisation.

Components:

Nickel:

Exposure routes : Skin contact
Species : Humans
Result : May cause sensitisation by skin contact.

Exposure routes : Inhalation
Result : Does not cause respiratory sensitisation.

silver:

Exposure routes : Skin contact
Species : Guinea pig
Method : OPPTS 870.2600
Result : Does not cause skin sensitisation.
Remarks : Based on read across from structural related substance

Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.
Remarks : Based on read across from structural related substance

Germ cell mutagenicity

Not classified due to lack of data.

Product:

Genotoxicity in vitro : Remarks: No data available

Components:

Nickel:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster fibroblasts
Concentration: 0.10, 0.25, 0.50, 1.0, 2.5 mM
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Test Type: Micronucleus test
Test system: Chinese hamster fibroblasts
Concentration: 0.25 - 1.5 mM
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative
GLP: yes

Genotoxicity in vivo	:	Species: Mammalian-Animal Method: OECD Test Guideline 475 Result: negative Remarks: No data available

silver:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Bacteria Method: OECD Test Guideline 471 Result: negative Test system: mammalian cells Method: OECD Test Guideline 476 Result: positive Remarks: Based on read across from structural related substance Test Type: Micronucleus test Test system: mammalian cells Method: OECD Test Guideline 487 Result: negative Remarks: Based on read across from structural related substance
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mammalian-Animal Method: OECD Test Guideline 474 Result: negative
Germ cell mutagenicity- Assessment	:	Overall, there is no consistent evidence of induction of genetic toxicity with relevance to humans.

Carcinogenicity

Suspected of causing cancer.

Product:

Remarks	:	No data available

Components:

Nickel:

Species	:	Rat, male and female
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	24 month(s)
Dose	:	0; 0,1; 0,4; 1 mg/m³
	:	0,1 mg/m³
Method	:	OECD Test Guideline 451
Result	:	negative
Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	104 weeks

Dose	:	10; 30; 50 mg/kg body weight
Frequency of Treatment	:	daily
NOAEL	:	11 mg/kg bw/day
Method	:	OECD Test Guideline 451
Result	:	negative
GLP	:	yes
Remarks	:	unit expressed as mg metal/kg Based on read across from structural related substance
Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in inhalation studies with animals.

Reproductive toxicity

Not classified due to lack of data.

Product:

Effects on fertility	:	Remarks: No data available

Components:

Nickel:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female Strain: Sprague-Dawley Application Route: Oral Dose: 0; 1; 2,5; 5;10 milligram per kilogram General Toxicity - Parent: NOAEL: 10 mg/kg body weight General Toxicity F1: NOAEL: 10 mg/kg body weight Method: OECD Test Guideline 416 GLP: yes Remarks: Based on read across from structural related substance Species: Rat Application Route: inhalation (dust/mist/fume) Duration of Single Treatment: 13 Weeks General Toxicity - Parent: NOAEL: 0,45 mg/m³ Remarks: unit expressed as mg metal/m³ Based on read across from structural related substance
Effects on foetal development	:	Test Type: Embryonic Stem Cell Assay Species: Mouse Result: No teratogenic effects GLP: Not specified

silver:

Effects on fertility	:	Species: Rat, male and female Application Route: Oral Dose: 62,5; 125, 250 milligram per kilogram Duration of Single Treatment: 28 days General Toxicity - Parent: NOAEL: > 250 mg/kg body weight General Toxicity F1: NOAEL: > 250 mg/kg body weight

		Method: OECD Test Guideline 422 Result: No effects on fertility and early embryonic development were detected. GLP: yes
Effects on foetal development	:	Species: Rat Strain: Sprague-Dawley Application Route: Oral Dose: 6,5; 19,4; 64,6 milligram per kilogram General Toxicity Maternal: LOAEL: 19,4 mg/kg body weight Developmental Toxicity: NOAEL: > 64,6 mg/kg body weight Method: OECD Test Guideline 414 Result: No teratogenic effects, Maternal toxicity GLP: yes Remarks: unit expressed as mg metal/kg Based on read across from structural related substance Species: Rat Strain: Sprague-Dawley Application Route: Oral Dose: 6,5; 19,4; 64,6 milligram per kilogram General Toxicity Maternal: NOAEL: 6,5 mg/kg body weight Method: OECD Test Guideline 414 Result: No teratogenic effects GLP: yes Remarks: unit expressed as mg metal/kg Based on read across from structural related substance

STOT - single exposure

Not classified due to lack of data.

Product:

Remarks : No data available

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Product:

Remarks : No data available

Components:

Nickel:

Exposure routes	:	Inhalation
Target Organs	:	Lungs
Assessment	:	Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Nickel:

Species	:	Rat, male and female
LOAEL	:	4 mg/m³
Application Route	:	inhalation (dust/mist/fume)
Test atmosphere	:	dust/mist
Exposure time	:	28 days
Dose	:	0; 4; 8; 24
Method	:	OECD Test Guideline 412
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Species	:	Rat, male and female
LOAEL	:	1 mg/m³
Application Route	:	inhalation (dust/mist/fume)
Test atmosphere	:	dust/mist
Exposure time	:	13 weeks
Dose	:	0; 1; 4; 8
Method	:	OECD Test Guideline 413
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Species	:	Rat, male and female
NOAEL	:	11 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	104 weeks
Dose	:	10, 30, 50 mg/kg
Method	:	OECD Test Guideline 451
GLP	:	yes

Species	:	Rat, male and female
	:	0,1 mg/m³
Application Route	:	inhalation (aerosol)
Test atmosphere	:	dust/mist
Exposure time	:	2 years
Dose	:	0,1, 0,4, mg/m3
Method	:	OECD Test Guideline 451
GLP	:	yes
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

silver:

Species	:	Rat
NOAEL	:	30 mg/kg
LOAEL	:	300 mg/kg
Application Route	:	Oral
Exposure time	:	28 d
Dose	:	30; 300; 1000
Method	:	OECD Test Guideline 407

Species	:	Rat
NOAEL	:	30 mg/kg
LOAEL	:	125 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Number of exposures	:	1/d
Dose	:	30; 125; 500
Method	:	OECD Test Guideline 408

Species	:	Rat, male and female
NOAEL	:	133 µg/m³
LOAEL	:	515 µg/m³
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	6 h/d 90 d
Number of exposures	:	5/7 d
Method	:	OECD Test Guideline 413

Species	:	Rat
NOAEL	:	9 mg/kg
Application Route	:	Oral
Exposure time	:	28 d
Dose	:	2,25; 4,5; 9

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Nickel:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 15,3 mg/l
Exposure time: 96 h

GLP: Not specified
Remarks: unit expressed as mg metal/l
Fresh water
Based on read across from structural related substance

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 0,013 mg/l
Exposure time: 48 h
Remarks: Fresh water
Based on read across from structural related substance

LC50 (Ceriodaphnia dubia (water flea)): 0,121 mg/l
Exposure time: 48 h
Remarks: Fresh water
Based on read across from structural related substance

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): > 0,0815 - < 0,148 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Fresh water
Based on read across from structural related substance

EC50 (Pseudokirchneriella subcapitata (algae)): > 0,0253 - < 0,365 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Fresh water
Based on read across from structural related substance

NOEC : 0,0123 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: unit expressed as mg metal/l
Fresh water
Based on read across from structural related substance

NOEC (Desmodesmus sp.): 0,0225 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: unit expressed as mg metal/l
Fresh water
Based on read across from structural related substance

EC10 (Champia parvula (marine algae)): 0,144 mg/l
Exposure time: 48 h
Remarks: unit expressed as mg metal/l
Marine water
Based on read across from structural related substance

EC10 (Lemna minor (duckweed)): 0,0082 mg/l
Exposure time: 7 d
Remarks: unit expressed as mg metal/l
Fresh water
Based on read across from structural related substance

Toxicity to microorganisms	:	EC50 : 33 mg/l Exposure time: 30 min Method: ISO 8192 Remarks: Based on read across from structural related substance unit expressed as mg metal/l
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,057 mg/l Exposure time: 32 DAYS Species: Pimephales promelas (fathead minnow) Remarks: Fresh water Based on read across from structural related substance NOEC: 0,04 mg/l Exposure time: 8 days Species: Danio rerio (zebra fish) Remarks: Fresh water Based on read across from structural related substance NOEC: 0,134 mg/l Exposure time: 32 days Species: Oncorhynchus mykiss (rainbow trout) Remarks: Fresh water Based on read across from structural related substance EC10: 20,76 mg/l Exposure time: 28 days Species: Cyprinodon variegatus (sheepshead minnow) Remarks: unit expressed as mg metal/l Marine water Based on read across from structural related substance EC10: 3,599 mg/l Exposure time: 40 days Species: Atherinops affinis (Topsmelt) Remarks: Based on read across from structural related substance unit expressed as mg metal/l Marine water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,04 mg/l Exposure time: 42 days Species: Daphnia magna (Water flea) Remarks: Fresh water Based on read across from structural related substance NOEC: 0,0037 mg/l Exposure time: 10 days Species: Ceriodaphnia dubia (Water flea) Method: OECD Test Guideline 211 Remarks: unit expressed as mg metal/l Fresh water Based on read across from structural related substance

NOEC: 0,061 mg/l
Exposure time: 36 days
Species: Mysidopsis bahia (opossum shrimp)
Remarks: unit expressed as mg metal/l
Marine water
Based on read across from structural related substance

EC10: 0,089 mg/l
Exposure time: 72 h
Remarks: unit expressed as mg metal/l
Marine water
Based on read across from structural related substance

Toxicity to soil dwelling organisms : NOEC: 180 mg/kg
Exposure time: 21 days
Species: Eisenia fetida (earthworms)
Remarks: unit expressed as mg metal/kg
Based on read across from structural related substance

NOEC: 320 mg/kg
Exposure time: 28 days
Remarks: unit expressed as mg metal/kg
Based on read across from structural related substance

Plant toxicity : NOEC: 88 mg/kg
Exposure time: 60 d
Species: Avena sativa (oats)
Remarks: unit expressed as mg metal/kg
Based on read across from structural related substance

EC10: 34 mg/kg
Exposure time: 63 d
Species: Lactuca sativa (lettuce)
Remarks: unit expressed as mg metal/kg
Based on read across from structural related substance

Sediment toxicity : EC10: 762 mg/kg
Species: Chironomus riparius
Remarks: unit expressed as mg metal/kg
Fresh water
Based on read across from structural related substance

EC10: 1103 mg/kg
Species: Tubifex tubifex
Remarks: unit expressed as mg metal/kg
Fresh water
Based on read across from structural related substance

EC10: 82 mg/kg
Species: Hyalella azteca
Remarks: unit expressed as mg metal/kg
Fresh water
Based on read across from structural related substance

Toxicity to terrestrial organisms	:	NOEC: 800 Exposure time: 90 days Species: Anas platyrhynchos (Mallard duck) Remarks: Based on read across from structural related substance

Ecotoxicology Assessment

Acute aquatic toxicity	:	This product has no known ecotoxicological effects., No toxicity at the limit of solubility, Dissolved metal concentration (in TDp) < acute Environmental Reference Value (ERV)
Chronic aquatic toxicity	:	This product has no known ecotoxicological effects., No toxicity at the limit of solubility, Dissolved metal concentration (in TDp) < chronic Environmental reference value (ERV)

silver:

Toxicity to fish	:	Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No toxicity at the limit of solubility
Toxicity to fish (Chronic toxicity)	:	Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: No toxicity at the limit of solubility
Toxicity to soil dwelling organisms	:	EC10: 5,3 mg/kg Exposure time: 28 d Species: Eisenia fetida (earthworms) NOEC: 22,5 mg/kg Exposure time: 28 d Species: Eisenia fetida (earthworms)
Plant toxicity	:	0,13 mg/kg Test period: 17 d Species: Lactuca sativa (lettuce)
Sediment toxicity	:	NOEC: 12 mg/kg Duration: 10 d Species: Hyalella azteca Remarks: Fresh water

zinc:

Ecotoxicology Assessment

Acute aquatic toxicity	:	No data available

12.2 Persistence and degradability

Components:

Nickel:

Biodegradability : Remarks: Not applicable

12.3 Bioaccumulative potential

Components:

Nickel:

Bioaccumulation : Bioconcentration factor (BCF): > 1.631
Method: field study
Remarks: terrestrial environment
Based on read across from structural related substance

Bioconcentration factor (BCF): 270
Method: field study
Remarks: Fresh water
Based on read across from structural related substance

Partition coefficient: n-octanol/water : Remarks: data waiving in REACH dossier

silver:

Bioaccumulation : Bioconcentration factor (BCF): 70

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Nickel:

Assessment : not applicable for inorganic substances

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with the European Directives on waste and hazardous waste.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Send to a licensed waste management company.
Dispose of as hazardous waste in compliance with local and national regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : Not regulated as a dangerous good

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.2 UN proper shipping name

ADN : Not regulated as a dangerous good

ADR : Not regulated as a dangerous good

RID : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 27: Nickel Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EU) No 2024/590 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable

REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.		Not applicable
Water hazard class (Germany)	:	WGK 1 slightly hazardous to water Classification according to AwSV, Annex 1 (5.2)
TA Luft List (Germany)	:	5.2.1: Total dust: Not applicable 5.2.2: Inorganic substances in powdered form: Class 2: 15 % Nickel 5.2.4: Inorganic substances in gaseous form: Not applicable 5.2.5: Organic Substances: Not applicable 5.2.7.1.1: Carcinogenic substance: Not applicable 5.2.7.1.1: Quartz fine dust PM4: Not applicable 5.2.7.1.1: Formaldehyde: Not applicable 5.2.7.1.1: fibres: Not applicable 5.2.7.1.2: Germ cell mutagens: Not applicable 5.2.7.1.3: Substances toxic to reproduction: Not applicable 5.2.7.2: Poorly degradable, easily enrichable and highly toxic organic substances: Not applicable
Volatile organic compounds	:	Directive 2010/75/EU of 24 November 2010 on industrial and livestock rearing emissions (integrated pollution prevention and control) Not applicable

Other regulations:

The product is subject to the supply restrictions of the Ordinance on the Prohibition of Chemicals.
Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).
Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory

TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
CH INV	:	On the inventory, or in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

Full text of H-Statements

H317	:	May cause an allergic skin reaction.
H351	:	Suspected of causing cancer.
H372	:	Causes damage to organs through prolonged or repeated exposure.
H373	:	May cause damage to organs through prolonged or repeated exposure.

Full text of other abbreviations

Carc.	:	Carcinogenicity
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2004/37/EC	:	Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens, mutagens or reprotoxic substances at work - Annex III
2006/15/EC	:	Europe. Indicative occupational exposure limit values
ACGIH	:	US. ACGIH Threshold Limit Values
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
DE DFG MAK	:	Germany. MAK BAT Annex IIa
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
OSHA/Z2	:	US. OSHA Table Z-2 (29 CFR 1910.1000)
2000/39/EC / TWA	:	Limit Value - eight hours

2004/37/EC / TWA	:	Long term exposure limit
2006/15/EC / TWA	:	Limit Value - eight hours
ACGIH / TWA	:	Time weighted average
ACGIH / TWA	:	8-hour, time-weighted average
DE DFG MAK / MAK	:	MAK value
DE TRGS 900 / AGW	:	Time Weighted Average
OSHA/Z2 / TWA	:	Time weighted average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice	:	Provide adequate information, instruction and training for operators.
Sources of key data used to compile the Safety Data Sheet	:	Information taken from reference works and the literature. Information derived from practical experience.

Classification of the mixture:		**Classification procedure:**
Skin Sens. 1	H317	Calculation method
Carc. 2	H351	Calculation method

STOT RE 1	H372	Calculation method

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

DE / EN