



# Single-element Standard Solution for AAS. Nickel (Ni) 1000 mg/l in HNO<sub>3</sub> 2%

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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

#### 1.1. Product identifier

Product form : Mixture  
Name : Single-element Standard Solution for AAS.  
Nickel (Ni) 1000 mg/l in HNO<sub>3</sub> 2%  
Product code : B038

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

##### 1.2.1. Relevant identified uses

Main use category : Professional use  
Use of the substance/mixture : Certified reference material for laboratory use  
Function or use category : Laboratory chemicals

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

##### Spectracer UK Ltd.

Second Floor,  
27 Gloucester Place,  
London,  
W1U 8HU,  
United Kingdom.

Tel: +44 (0) 207 193 9114

Fax: +44 (0) 203 432 4686

Email: [contact@spectracer.co.uk](mailto:contact@spectracer.co.uk)

Web: [www.spectracer.com](http://www.spectracer.com)

#### 1.4. Emergency telephone number

Emergency number : Tel: +44(0)1933 445260 Option 1. Language: English only.  
For Chemical Emergencies Only  
Llewellyn (Safety Advisors) Europe Ltd

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	: +353 1 8379964	
United Kingdom	National Poisons Information Service (NHS Direct)	<a href="http://www.npis.org">http://www.npis.org</a>	111 (England & Wales only) or 112 (EU) or 08454 24 24 24 (Scotland)	

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Sensitisation — Skin, Category 1 H317  
Carcinogenicity, Category 1A H350  
Reproductive toxicity, Category 1B H360  
Specific target organ toxicity — Repeated exposure, Category 2 H373  
Hazardous to the aquatic environment — Chronic Hazard, Category 3 H412

Full text of hazard classes and H-statements : see section 16

##### Adverse physicochemical, human health and environmental effects

May cause cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

GHS08

Signal word (CLP) :

Danger

Hazardous ingredients :

nickel nitrate

Hazard statements (CLP) :

H317 - May cause an allergic skin reaction  
 H350 - May cause cancer  
 H360 - May damage fertility or the unborn child  
 H373 - May cause damage to organs through prolonged or repeated exposure  
 H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (CLP) :

P202 - Do not handle until all safety precautions have been read and understood  
 P260 - Do not breathe fume, vapours, mist  
 P280 - Wear eye protection, face protection, protective clothing, protective gloves  
 P302+P352 - IF ON SKIN: Wash with plenty of water  
 P314 - Get medical advice/attention if you feel unwell  
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
 P362+P364 - Take off contaminated clothing and wash it before reuse  
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
nitric acid	(CAS No) 7697-37-2 (EC no) 231-714-2 (EC index no) 007-004-00-1 (REACH-no) 01-2119487297-23-XXXX	1 - 5	Ox. Liq. 3, H272 Skin Corr. 1A, H314
nickel nitrate	(CAS No) 13138-45-9 (EC no) 236-068-5 (EC index no) 028-012-00-1	0,1 - 1	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1A, H350i Repr. 1B, H360D STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

##### Specific concentration limits:

Name	Product identifier	Specific concentration limits
nitric acid	(CAS No) 7697-37-2 (EC no) 231-714-2 (EC index no) 007-004-00-1 (REACH-no) 01-2119487297-23-XXXX	( 5 =<C < 20) Skin Corr. 1B, H314 ( C >= 20) Skin Corr. 1A, H314 ( C >= 65) Ox. Liq. 3, H272
nickel nitrate	(CAS No) 13138-45-9 (EC no) 236-068-5 (EC index no) 028-012-00-1	( C >= 0,01) Skin Sens. 1, H317 ( 0,1 =<C < 1) STOT RE 2, H373 ( C >= 1) STOT RE 1, H372 ( C >= 20) Skin Irrit. 2, H315

Full text of H-statements: see section 16

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/injuries after skin contact	: May cause an allergic skin reaction.
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##### 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	: Water spray. Dry powder. Foam. Carbon dioxide.
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##### 5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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##### 5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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#### SECTION 6: Accidental release measures

##### 6.1. Personal precautions, protective equipment and emergency procedures

###### 6.1.1. For non-emergency personnel

Emergency procedures	: Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapours/spray.
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###### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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##### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

##### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

##### 6.4. Reference to other sections

For further information refer to section 13.

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.
Hygiene measures	: Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

##### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store locked up. Store in a well-ventilated place. Keep cool.
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##### 7.3. Specific end use(s)

No additional information available

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

##### 8.1. Control parameters

nickel nitrate (13138-45-9)		
Austria	Local name	Nickel (Stäube von Nickelmetall, Nickelsulfid und sulfidischen Erzen, Nickeloxide und Nickelcarbonat) und Stäube von Nickelverbindungen und Nickellegierungen
Austria	MAK (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
Austria	MAK Short time value (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Austria	Remark (AT)	Sah
Belgium	Limit value (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup> (Nickel (composés solubles) (en Ni); Belgium; Time-weighted average exposure limit 8 h)
Bulgaria	Local name	Никел - метал, и съединения (като никел)
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Croatia	Local name	Nikal
Croatia	GVI (granična vrijednost izloženosti) (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
Croatia	Naznake (HR)	T
Czech Republic	Local name	Nikl
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (NPK-P) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Czech Republic	Remark (CZ)	S
Denmark	Local name	Nikkel, pulver og støv, beregnet som Ni (1994)
Denmark	Grænseværdie (langvarig) (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Denmark	Anmærkninger (DK)	K
Estonia	Local name	Nikkel, metall
Estonia	OEL TWA (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
Finland	Local name	Nikkeli, metalli
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
France	Local name	Nickel (métal)
France	VME (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Ireland	Local name	Nickel
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
Latvia	Local name	Niķelis, niķeļaksoīdi, sulfidiunsavienojumu maisījumi (pēc Ni)
Latvia	OEL TWA (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Lithuania	Local name	Nikelis
Lithuania	IPRV (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
Lithuania	Remark (LT)	KJ
Poland	Local name	Nikiel i jego związki, z wyjątkiem tetrakarbonylku niklu (niklu karbonylku) w przeliczeniu na Ni
Poland	NDS (mg/m <sup>3</sup> )	0,25 mg/m <sup>3</sup>
Portugal	Local name	Níquel, expresso em Ni Elementar
Portugal	OEL TWA (mg/m <sup>3</sup> )	1,5 mg/m <sup>3</sup>
Romania	Local name	Nichel și compuși
Romania	OEL TWA (mg/m <sup>3</sup> )	0,10 mg/m <sup>3</sup>
Romania	OEL STEL (mg/m <sup>3</sup> )	0,50 mg/m <sup>3</sup>
Sweden	Local name	Nickel total dust
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	0,5 mg/m <sup>3</sup>
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup> Nickel, water-soluble inorganic compounds (as Ni); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)



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nickel nitrate (13138-45-9)		
Iceland	Local name	Nikkel, duft og ryk, sem Ni
Iceland	OEL (8 hours ref) (mg/m <sup>3</sup> )	0,05 mg/m <sup>3</sup>
Iceland	Notes (IS)	O,K
USA - ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0,1 mg/m <sup>3</sup> (Nickel, Soluble inorganic compounds (NOS), as Ni; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction)
nitric acid (7697-37-2)		
EU	IOELV STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup> (Nitric acid; EU; Short time value; Indicative occupational exposure limit value)
EU	IOELV STEL (ppm)	1 ppm (Nitric acid; EU; Short time value; Indicative occupational exposure limit value)
Austria	Local name	Salpetersäure
Austria	MAK Short time value (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Austria	MAK Short time value (ppm)	1 ppm
Belgium	Local name	Acide nitrique
Belgium	Short time value (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Belgium	Short time value (ppm)	1 ppm
Bulgaria	Local name	Азотна киселина*
Bulgaria	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Croatia	Local name	Dušična kiselina
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	1 ppm
Croatia	Naznake (HR)	EU** O, C
Czech Republic	Local name	Kyselina dusi ná
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (PEL) (ppm)	0,39 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m <sup>3</sup> )	2,5 mg/m <sup>3</sup>
Czech Republic	Expoziční limity (NPK-P) (ppm)	1 ppm
Denmark	Local name	Salpetersyre (2007)
Denmark	Grænseværdie (kortvarig) (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Denmark	Grænseværdie (kortvarig) (ppm)	1 ppm
Denmark	Anmærkninger (DK)	ES
Estonia	Local name	Lämmastikhape
Estonia	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Estonia	OEL STEL (ppm)	1 ppm
Finland	Local name	Typpihappo
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	1,3 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	0,5 ppm
Finland	HTP-arvo (15 min)	2,6 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	1 ppm
France	Local name	Acide nitrique
France	VLE (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
France	VLE (ppm)	1 ppm
Germany	Local name	Salpetersäure
Germany	TRGS 900 Occupational exposure limit value (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Germany	TRGS 900 Occupational exposure limit value (ppm)	1 ppm
Germany	Remark (TRGS 900)	EU, 13, 16
Greece	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Greece	OEL STEL (ppm)	1 ppm



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nitric acid (7697-37-2)		
Hungary	Local name	SALÉTROMSAV
Hungary	CK-érték	2,6 mg/m <sup>3</sup>
Hungary	Megjegyzések (HU)	i, m; l.
Ireland	Local name	Nitric acid
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Ireland	OEL (15 min ref) (ppm)	1 ppm
Ireland	Notes (IE)	IOELV
Italy	Local name	Acido nitrico
Italy	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Italy	OEL STEL (ppm)	1 ppm
Latvia	Local name	Slāpekļskābe
Latvia	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Latvia	OEL TWA (ppm)	0,78 ppm
Latvia	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Latvia	OEL STEL (ppm)	1 ppm
Lithuania	Local name	Nitrato rūgštis (azoto rūgštis)
Lithuania	TPRV (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Lithuania	TPRV (ppm)	1 ppm
Luxembourg	Local name	Acide nitrique
Luxembourg	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Luxembourg	OEL STEL (ppm)	1 ppm
Malta	Local name	Nitric acid
Malta	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Malta	OEL STEL (ppm)	1 ppm
Netherlands	Local name	Salpeterzuur
Netherlands	Grenswaarde TGG 15MIN (mg/m <sup>3</sup> )	1,3 mg/m <sup>3</sup>
Netherlands	Grenswaarde TGG 15MIN (ppm)	0,5 ppm (Salpeterzuur; Netherlands; Short time value; Public occupational exposure limit value)
Poland	Local name	Kwas azotowy(V)
Poland	NDS (mg/m <sup>3</sup> )	1,4 mg/m <sup>3</sup>
Poland	NDSch (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Portugal	Local name	Ácido nítrico
Portugal	OEL TWA (ppm)	2 ppm
Portugal	OEL STEL (ppm)	4 ppm
Romania	Local name	Acid nitric
Romania	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Romania	OEL STEL (ppm)	1 ppm
Slovenia	Local name	dušikova kislina
Slovenia	OEL TWA (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Slovenia	OEL TWA (ppm)	1 ppm
Slovenia	OEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Slovenia	OEL STEL (ppm)	1 ppm
Spain	Local name	Ácido nítrico
Spain	VLA-EC (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Spain	VLA-EC (ppm)	1 ppm



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nitric acid (7697-37-2)		
Spain	Notes	(2007), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo. Todos estos agentes químicos figuran al menos en una de las directivas de valores límite indicativos publicadas hasta ahora (ver Anexo C. Bibliografía). Los estados miembros disponen de un tiempo fijado en dichas directivas para su transposición a los valores límites de cada país miembro. Una vez adoptados, estos valores tienen la misma validez que el resto de los valores adoptados por el país.)
Sweden	Local name	Nitric acid
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	13 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	5 ppm
United Kingdom	Local name	Nitric acid
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
United Kingdom	WEL STEL (ppm)	1 ppm
Iceland	Local name	Saltpéturssýra
Iceland	OEL (15 min ref) (mg/m <sup>3</sup> )	2,6 mg/m <sup>3</sup>
Iceland	OEL (15 min ref) (ppm)	1 ppm
Norway	Local name	Salpetersyre
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	2 ppm
Switzerland	Local name	Acide nitrique
Switzerland	VME (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Switzerland	VME (ppm)	2 ppm
Switzerland	VLE (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Switzerland	VLE (ppm)	2 ppm
Switzerland	Remark (CH)	15 min
Australia	Local name	Nitric acid
Australia	TWA (mg/m <sup>3</sup> )	5,2 mg/m <sup>3</sup>
Australia	TWA (ppm)	2 ppm
Australia	STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Australia	STEL (ppm)	4 ppm
USA - ACGIH	Local name	Nitric acid
USA - ACGIH	ACGIH TWA (ppm)	2 ppm
USA - ACGIH	ACGIH STEL (ppm)	4 ppm
USA - ACGIH	Remark (ACGIH)	URT & eye irr; dental erosion
USA - OSHA	Local name	Nitric acid
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	2 ppm

## 8.2. Exposure controls

- Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Ensure good ventilation of the work station.
- Personal protective equipment : Safety glasses. Gloves. Protective clothing.

Hand protection	: Protective gloves
Eye protection	: Safety glasses
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended



Environmental exposure controls : Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available



#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.
Reproductive toxicity	: May damage fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.

nickel nitrate (13138-45-9)	
LC50 fish 1	17,1 mg/l (LC50; 672 h)
Threshold limit algae 1	0,18 mg/l (EC50; 72 h)
nitric acid (7697-37-2)	
LC50 fish 2	72 ppm (LC50; 96 h)
EC50 Daphnia 1	180 mg/l (EC50; 48 h)
Threshold limit algae 1	> 19 mg/l (EC0)

#### 12.2. Persistence and degradability

nickel nitrate (13138-45-9)	
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
nitric acid (7697-37-2)	
Persistence and degradability	Biodegradability: Not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

#### 12.3. Bioaccumulative potential

nitric acid (7697-37-2)	
BCF fish 1	<= 1 (BCF)
Log Pow	-2,3 (OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
Bioaccumulative potential	Bioaccumulation: Not applicable.

#### 12.4. Mobility in soil

No additional information available

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

No additional information available

#### 12.6. Other adverse effects

No additional information available



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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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#### SECTION 13: Disposal considerations

##### 13.1. Waste treatment methods

- Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
- Waste disposal recommendations : Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations.
- Ecology - waste materials : Avoid release to the environment.
- European List of Waste (LoW) code : 16 05 06\* - laboratory chemicals consisting of or containing dangerous substances including mixtures of laboratory chemicals

#### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

##### 14.6. Special precautions for user

###### - Overland transport

No data available

###### - Transport by sea

No data available

###### - Air transport

No data available

###### - Inland waterway transport

No data available

###### - Rail transport

No data available

##### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

#### SECTION 15: Regulatory information

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

###### 15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	Single-element Standard Solution for AAS. Nickel (Ni) 1000 mg/l in HNO3 2% - nitric acid
3.b. Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Single-element Standard Solution for AAS. Nickel (Ni) 1000 mg/l in HNO3 2% - nitric acid
3.c. Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	Single-element Standard Solution for AAS. Nickel (Ni) 1000 mg/l in HNO3 2%

# Single-element Standard Solution for AAS.

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28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as Carcinogen category 1A or 1B (Table 3.1) or Carcinogen category 1 or 2 (Table 3.2) and listed as follows: Carcinogen category 1A (Table 3.1)/Carcinogen category 1 (Table 3.2) listed in Appendix 1 Carcinogen category 1B (Table 3.1)/Carcinogen category 2 (Table 3.2) listed in Appendix 2	nickel nitrate
30. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as Toxic to Reproduction category 1A or 1B (Table 3.1) or Toxic to Reproduction category 1 or 2 (Table 3.2) and listed as follows: Reproductive toxicant category 1A adverse effects on sexual function and fertility or on development (Table 3.1) or Reproductive toxicant category 1 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 5 Reproductive toxicant category 1B adverse effects on sexual function and fertility or on development (Table 3.1) or Reproductive toxicant category 2 with R60 (May impair fertility) or R61 (May cause harm to the unborn child) (Table 3.2) listed in Appendix 6	nickel nitrate

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

##### Germany

VwVwS Annex reference : Water hazard class (WGK) 3, severe hazard to waters (Classification according to VwVwS, Annex 4)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

SZW-lijst van kankerverwekkende stoffen : nickel nitrate is listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : nickel nitrate is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : nickel nitrate is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : nickel nitrate is listed

##### Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product  
Pregnant/breastfeeding women working with the product must not be in direct contact with the product  
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

### SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Carc. 1A	Carcinogenicity, Category 1A
Carc. 1A	Carcinogenicity (inhalation) Category 1A
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Muta. 2	Germ cell mutagenicity, Category 2
Ox. Liq. 3	Oxidising Liquids, Category 3
Ox. Sol. 2	Oxidising Solids, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
Repr. 1B	Reproductive toxicity, Category 1B
Resp. Sens. 1	Sensitisation — Respiratory, Category 1



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Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, Category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H272	May intensify fire; oxidiser
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
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
H350i	May cause cancer by inhalation
H360	May damage fertility or the unborn child
H360D	May damage the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause 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

SDS EU Mod H F (REACH ANNEX II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*