



ICP Standard Solution. Nickel (Ni) 1000mg/L in HNO₃ 2% Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) as amended

Date of issue: 2015/03/19 Revision date: 2019/02/12 Version: 1.2

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

1.1. Product identifier

Product form : Mixture
Product name : ICP Standard Solution.
Nickel (Ni) 1000mg/L in HNO₃ 2%
Product code : S038

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, Industrial use
Use of the substance/mixture : Reference material
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

Web: 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)	http://www.npis.org	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]

Skin sensitisation, 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 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.

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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) :

P201 - Obtain special instructions before use.
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
 P273 - Avoid release to the environment.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P308+P313 - IF exposed or concerned: Get medical advice/attention.
 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.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

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. 2, H272 Met. Corr. 1, H290 Acute Tox. 3 (Inhalation:dust,mist), H331 Skin Corr. 1A, H314 Eye Dam. 1, H318
nickel nitrate	(CAS-No.) 13138-45-9 (EC-No.) 236-068-5 (EC Index-No.) 028-012-00-1	0,1 - 0,5	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 (M=10) 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 (20 =<C < 100) Skin Corr. 1A, H314 (65 =<C < 99) Ox. Liq. 3, H272 (99 =<C < 100) Ox. Liq. 2, H272
nickel nitrate	(CAS-No.) 13138-45-9 (EC-No.) 236-068-5 (EC Index-No.) 028-012-00-1	(0,01 =<C < 100) Skin Sens. 1, H317 (0,1 =<C < 1) STOT RE 2, H373 (1 =<C < 100) STOT RE 1, H372 (20 =<C < 100) Skin Irrit. 2, H315

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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. Call a poison center or a doctor if you feel unwell. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash with plenty of water/.... If skin irritation or rash occurs: Wash with plenty of water/.... Get medical advice/attention. Wash contaminated clothing before reuse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- 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/effects after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.
- Symptoms/effects after eye contact : Eye irritation.

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.

5.2. Special hazards arising from the substance or mixture

- Hazardous decomposition products in case of fire : Toxic fumes may be released.

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.

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. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

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".

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.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid breathing fume, Vapours. 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 breathing 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 : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat and ignition sources. Store locked up. Store in a well-ventilated place. Keep cool.

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)		
EU	Local name	Nickel nitrate
EU	IOELV TWA (mg/m ³)	0,005 mg/m ³ (respirable fraction) 0,01 mg/m ³ (inhalable fraction)
EU	Notes	(Year of adoption 2011)
EU	Regulatory reference	SCOEL Recommendations
Austria	Local name	Nickeldinitrat
Austria	MAK (mg/m ³)	0,5 mg/m ³
Austria	MAK Short time value (mg/m ³)	2 mg/m ³
Austria	Remark (AT)	Sh
Austria	Regulatory reference	BGBI. II Nr. 186/2015
Belgium	Local name	Nickel (composés insolubles inorganiques) (en Ni) # Nikkel (onoplosbare anorganische verbindingen) (als Ni)
Belgium	Limit value (mg/m ³)	0,1 mg/m ³ (Nickel (composés solubles) (en Ni); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Bulgaria	Local name	Никел
Bulgaria	OEL TWA (mg/m ³)	0,05 mg/m ³ метал и съединения (като никел)
Croatia	Local name	Nikal
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	0,5 mg/m ³
Croatia	Naznake (HR)	T (otrovno); Karc. kat. 3 (tvari koje izazivaju zabrinutost zbog mogućeg karcinogenog djelovanja na ljude)
Czech Republic	Local name	Nikl
Czech Republic	Expoziční limity (PEL) (mg/m ³)	0,5 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	1 mg/m ³
Czech Republic	Remark (CZ)	S
Denmark	Local name	Nikkel, pulver og støv
Denmark	Grænseværdie (langvarig) (mg/m ³)	0,05 mg/m ³ beregnet som Ni
Denmark	Anmærkninger (DK)	K (betyder, at stoffet anses for at kunne være kræftfremkaldende)
Estonia	Local name	Nikkel, metall
Estonia	OEL TWA (mg/m ³)	0,5 mg/m ³
Finland	Local name	Nikkeli, metalli

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nickel nitrate (13138-45-9)		
Finland	HTP-arvo (8h) (mg/m ³)	0,01 mg/m ³
Finland	Huomautus (FI)	Ni, alveolijae
France	Local name	Nickel (métal)
France	VME (mg/m ³)	1 mg/m ³
France	Note (FR)	Valeurs recommandées/admises; substance classée cancérogène de catégorie 2
France	Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Germany	TRGS 900 Local name	Nickelmetall
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	0,006 mg/m ³ A (mg/m ³)
Germany	TRGS 900 Limitation of exposure peaks	8(II)
Germany	TRGS 900 Remark	AGS,10,Sh,Y
Germany	TRGS 900 Regulatory reference	TRGS900
Ireland	Local name	Nickel
Ireland	OEL (8 hours ref) (mg/m ³)	0,5 mg/m ³
Ireland	Notes (IE)	Sens.
Ireland	Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
Latvia	Local name	Niķelis,niķeļakoksīdi, sulfidiunsavienojumu maisījumi(pēcNi)
Latvia	OEL TWA (mg/m ³)	0,05 mg/m ³
Lithuania	Local name	Nikelis
Lithuania	IPRV (mg/m ³)	0,5 mg/m ³
Lithuania	Remark (LT)	K (kancerogeninis poveikis); J (jautrinantis poveikis)
Poland	Local name	Nikiel i jego związki, z wyjątkiem tetrakarbonylku niklu (niklu karbonylku) w przeliczeniu na Ni
Poland	NDS (mg/m ³)	0,25 mg/m ³
Portugal	Local name	Níquel, expresso em Ni Elementar
Portugal	OEL TWA (mg/m ³)	1,5 mg/m ³ I (Fração inalável)
Romania	Local name	Nichel și compuși
Romania	OEL TWA (mg/m ³)	0,1 mg/m ³
Romania	OEL STEL (mg/m ³)	0,5 mg/m ³
Spain	Local name	Dinitrato de níquel
Spain	VLA-ED (mg/m ³)	0,1 mg/m ³ como Ni
Spain	Notes	C1A (Carcinógeno para el hombre), Sen (Sensibilizante), TR1B (Cuando las pruebas utilizadas para la clasificación procedan principalmente de datos en animales), r (Esta sustancia tiene establecidas restricciones a la fabricación, la comercialización o el uso en los términos especificados en el "Reglamento (CE) n° 1907/2006 sobre Registro, Evaluación, Autorización y Restricción de sustancias y preparados químicos" (REACH) de 18 de diciembre de 2006 (DOUE L 369 de 30 de diciembre de 2006). Las restricciones de una sustancia pueden aplicarse a todos los usos o sólo a usos concretos. El anexo XVII del Reglamento REACH contiene la lista de todas las sustancias restringidas y especifica los usos que se han restringido).
Spain	Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2018. INSHT
Sweden	Local name	Nickel, metall
Sweden	nivågränsvärde (NVG) (mg/m ³)	0,5 mg/m ³ totaldamm

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nickel nitrate (13138-45-9)		
Sweden	Anmärkning (SE)	S (Ämnet är sensibiliserande Sensibiliserande ämnen kan ge allergi eller annan överkänslighet. Överkänslighetsbesvären drabbar främst huden eller andningsorganen. Överkänslighet innebär att man reagerar vid kontakt med ämnen som normalt inte ger besvär. Allergi är en undergrupp av överkänslighet som orsakas av reaktioner i kroppens immunsystem. Särskilt låga gränsvärden har fastställts för ämnen med mer uttalat luftvägssensibiliserande egenskaper. Några ämnen med starkt sensibiliserande egenskaper får endast hanteras efter tillstånd från Arbetsmiljöverket, se föreskrifterna om kemiska arbetsmiljörisker. Dessa ämnen har inga gränsvärden men i vissa fall riktvärden); 2 (Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetskyddsstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod)
Sweden	Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom	Local name	Nickel
United Kingdom	WEL TWA (mg/m ³)	0,1 mg/m ³ Nickel, water-soluble inorganic compounds (as Ni); United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity), Carc (nickel oxides and sulphides)(Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51), Sen (nickel sulphate)(Capable of causing occupational asthma. See paragraphs 53–56)
United Kingdom	Regulatory reference	EH40/2005 (Third edition, 2018). HSE
Iceland	Local name	Nikkel, duft og ryk, sem Ni
Iceland	OEL (8 hours ref) (mg/m ³)	0,05 mg/m ³
Iceland	Notes (IS)	O,K
Switzerland	Local name	Nickel, sels solubles / Nickelsalze, löslich
Switzerland	MAK (mg/m ³)	0,05 mg/m ³ (i) / (e)
Switzerland	Remark	NIOSH
Switzerland	Regulatory reference	www.suva.ch, 01.11.2018
Australia	Local name	Nickel dinitrate
Australia	TWA (mg/m ³)	0,1 mg/m ³
Australia	Remark (AU)	Carcinogenicity Category 1A – Known to have carcinogenic potential for humans. The classification of a chemical into this category is based largely on human evidence from studies that have established a causal relationship between human exposure and the development of cancer.
USA - ACGIH	Local name	Nickel, soluble inorganic compounds (NOS), as Ni
USA - ACGIH	ACGIH TWA (mg/m ³)	0,1 mg/m ³ (Nickel, Soluble inorganic compounds (NOS), as Ni; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction)
USA - ACGIH	Remark (ACGIH)	TLV® Basis: Lund dam; nasal cancer. Notations: A4 (Not classifiable as a Human Carcinogen)
USA - ACGIH	Regulatory reference	ACGIH 2018
USA - OSHA	Local name	Nickel
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³ metal and insoluble compounds (as Ni) 1 mg/m ³ soluble compounds (as Ni)
nitric acid (7697-37-2)		
EU	Local name	Nitric acid

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nitric acid (7697-37-2)		
EU	IOELV STEL (mg/m ³)	2,6 mg/m ³ (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)
EU	Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Austria	Local name	Salpetersäure
Austria	MAK Short time value (mg/m ³)	2,6 mg/m ³
Austria	MAK Short time value (ppm)	1 ppm
Austria	Regulatory reference	BGBI. II Nr. 186/2015
Belgium	Local name	Acide nitrique # Salpeterzuur
Belgium	Short time value (mg/m ³)	2,6 mg/m ³
Belgium	Short time value (ppm)	1 ppm
Belgium	Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Bulgaria	Local name	Азотна киселина
Bulgaria	OEL STEL (mg/m ³)	2,6 mg/m ³
Bulgaria	OEL STEL (ppm)	1 ppm
Bulgaria	Notes	• (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Bulgaria	Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр.73 от 4 септември 2018 г.)
Croatia	Local name	Dušična kiselina
Croatia	KGVI (kratkotrajna гранична vrijednost izloženosti) (mg/m ³)	2,6 mg/m ³
Croatia	KGVI (kratkotrajna гранична vrijednost izloženosti) (ppm)	1 ppm
Croatia	Naznake (HR)	EU** (naznaka da se radi o tvarima za koje su utvrđene indikativne граничне vrijednosti izloženosti prema Direktivi 2006/15/ EC (druga lista)); O (oksidirajuće); C (nagrizajuće)
Croatia	Regulatory reference	Pravilnik o izmjenama i dopunama Pravilnika o граниčnim vrijednostima izloženosti opasnim tvarima pri radu i o biološkim граниčnim vrijednostima (NN, br. 75/13)
Czech Republic	Local name	Kyselina dusičná
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	0,39 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	2,5 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	1 ppm
Czech Republic	Remark (CZ)	I (dráždí sliznice (oči, dýchací cesty) resp. kůži)
Czech Republic	Regulatory reference	Nařízení vlády č. 361/2007 Sb. (zpracovány změny č. 246/2018 Sb.)
Denmark	Local name	Salpetersyre
Denmark	Grænseværdie (kortvarig) (mg/m ³)	2,6 mg/m ³
Denmark	Grænseværdie (kortvarig) (ppm)	1 ppm
Denmark	Anmærkninger (DK)	E (betyder, at stoffet har en EF-grænseværdi); S (betyder, at grænseværdien ikke bør overskrides. Værdien gælder for en eksponeringsperiode på 15 minutter)
Denmark	Regulatory reference	BEK nr 655 af 31/05/2018
Estonia	Local name	Lämmastikhape
Estonia	OEL STEL (mg/m ³)	2,6 mg/m ³
Estonia	OEL STEL (ppm)	1 ppm

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nitric acid (7697-37-2)		
Estonia	Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293 (RT I, 30.11.2011, 5)
Finland	Local name	Typpihappo
Finland	HTP-arvo (8h) (mg/m ³)	1,3 mg/m ³
Finland	HTP-arvo (8h) (ppm)	0,5 ppm
Finland	HTP-arvo (15 min)	2,6 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	1 ppm
Finland	Regulatory reference	HTP-ARVOT 2018 (Sosiaali- ja terveystieteiden ministeriö)
France	Local name	Acide nitrique
France	VLE (mg/m ³)	2,6 mg/m ³
France	VLE (ppm)	1 ppm
France	Note (FR)	Valeurs réglementaires indicatives
France	Regulatory reference	Arrêté du 30 juin 2004 modifié (réf.: INRS ED 984, 2016)
Germany	TRGS 900 Local name	Salpetersäure
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	2,6 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	1 ppm
Germany	TRGS 900 Remark	EU;13;16
Germany	TRGS 900 Regulatory reference	TRGS900
Gibraltar	Short-term mg/m ³	2,6 mg/m ³
Gibraltar	Short-term ppm	1 ppm
Gibraltar	Name of agent	Nitric acid
Gibraltar	Regulatory reference	Factories (Control of Chemical Agents at Work) Regulations 2003 (LN. 2018/181)
Greece	Local name	Νιτρικό οξύ
Greece	OEL STEL (mg/m ³)	2,6 mg/m ³
Greece	OEL STEL (ppm)	1 ppm
Greece	Regulatory reference	Π.Δ. 162/2007
Hungary	Local name	SALÉTROMSAV
Hungary	CK-érték	2,6 mg/m ³
Hungary	Megjegyzések (HU)	i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhármat), m (maró hatású anyag, amely felmarja a bőrt, nyálkahártyát, szemet vagy mindhármat); EU2 (2006/15/EK irányelvben közölt érték)
Hungary	Regulatory reference	25/2000. (IX. 30.) EüM–SZCSM együttes rendelet a munkahelyek kémiai biztonságáról
Ireland	Local name	Nitric acid
Ireland	OEL (15 min ref) (mg/m ³)	2,6 mg/m ³
Ireland	OEL (15 min ref) (ppm)	1 ppm
Ireland	Notes (IE)	IOELV (Indicative Occupational Exposure Limit Values)
Ireland	Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018
Italy	Local name	Acido nitrico
Italy	OEL STEL (mg/m ³)	2,6 mg/m ³
Italy	OEL STEL (ppm)	1 ppm
Italy	Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia	Local name	Slāpekļskābe
Latvia	OEL TWA (mg/m ³)	2 mg/m ³
Latvia	OEL TWA (ppm)	0,78 ppm
Latvia	OEL STEL (mg/m ³)	2,6 mg/m ³

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nitric acid (7697-37-2)		
Latvia	OEL STEL (ppm)	1 ppm
Latvia	Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325
Lithuania	Local name	Nitrato rūgštis (azoto rūgštis)
Lithuania	TPRV (mg/m ³)	2,6 mg/m ³
Lithuania	TPRV (ppm)	1 ppm
Lithuania	Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011 (Nr. V-695/A1-272, 2018-06-12)
Luxembourg	Local name	Acide nitrique
Luxembourg	OEL STEL (mg/m ³)	2,6 mg/m ³
Luxembourg	OEL STEL (ppm)	1 ppm
Luxembourg	Regulatory reference	Mémorial A N° 684 de 2018
Malta	Local name	Nitric acid
Malta	OEL STEL (mg/m ³)	2,6 mg/m ³
Malta	OEL STEL (ppm)	1 ppm
Malta	Regulatory reference	S.L.424.24 (L.N.57 of 2018)
Netherlands	Local name	Salpeterzuur
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	1,3 mg/m ³
Netherlands	Grenswaarde TGG 15MIN (ppm)	0,5 ppm (Salpeterzuur; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Regulatory reference	Arbeidsomstandighedenregeling 2018
Portugal	Local name	Ácido nítrico
Portugal	OEL TWA (ppm)	2 ppm
Portugal	OEL STEL (ppm)	4 ppm
Portugal	Regulatory reference	Norma Portuguesa NP 1796:2014
Slovakia	Local name	Kyselina dusičná
Slovakia	OEL STEL (mg/m ³)	2,6 mg/m ³
Slovakia	OEL STEL (ppm)	1 ppm
Slovakia	Regulatory reference	Nariadenie vlády č. 33/2018 Z.z.
Slovenia	Local name	dušikova kislina
Slovenia	OEL TWA (mg/m ³)	2,6 mg/m ³
Slovenia	OEL TWA (ppm)	1 ppm
Slovenia	OEL STEL (mg/m ³)	2,6 mg/m ³
Slovenia	OEL STEL (ppm)	1 ppm
Slovenia	KTV factor SL	1
Slovenia	Regulatory reference	Uradni list RS, št. 38/2015 z dne 4.6.2015
Spain	Local name	Ácido nítrico
Spain	VLA-EC (mg/m ³)	2,6 mg/m ³
Spain	VLA-EC (ppm)	1 ppm
Spain	Notes	VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Spain	Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2018. INSHT
Sweden	Local name	Salpetersyra
Sweden	nivågränsvärde (NVG) (mg/m ³)	1,3 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	0,5 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	2,6 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	1 ppm
Sweden	Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom	Local name	Nitric acid

ICP Standard Solution.

Nickel (Ni) 1000mg/L in HNO₃ 2%

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nitric acid (7697-37-2)		
United Kingdom	WEL STEL (mg/m ³)	2,6 mg/m ³
United Kingdom	WEL STEL (ppm)	1 ppm
United Kingdom	Regulatory reference	EH40/2005 (Third edition, 2018). HSE
Iceland	Local name	Saltpéturssýra
Iceland	OEL (15 min ref) (mg/m ³)	2,6 mg/m ³
Iceland	OEL (15 min ref) (ppm)	1 ppm
Iceland	Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway	Local name	Salpetersyre
Norway	Grenseverdier (AN) (mg/m ³)	5 mg/m ³
Norway	Grenseverdier (AN) (ppm)	2 ppm
Norway	Merknader (NO)	E (EU har en veiledende grenseverdi for stoffet)
Norway	Regulatory reference	FOR-2018-08-21-1255
Turkey	Local name	Nitrik asit
Turkey	OEL STEL (mg/m ³)	2,6 mg/m ³
Turkey	OEL STEL (ppm)	1 ppm
Turkey	Regulatory reference	12 Ağustos 2013 Tarihli ve 28733 Sayılı Resmî Gazete
Australia	Local name	Nitric acid
Australia	TWA (mg/m ³)	5,2 mg/m ³
Australia	TWA (ppm)	2 ppm
Australia	STEL (mg/m ³)	10 mg/m ³
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)	TLV® Basis: URT & eye irr; dental erosion
USA - ACGIH	Regulatory reference	ACGIH 2018
USA - OSHA	Local name	Nitric acid
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
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:

Protective goggles. Gloves.

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. [In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):

ICP Standard Solution.

Nickel (Ni) 1000mg/L in HNO₃ 2%

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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	: < 2
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	: 1,01
Solubility	: Miscible with water.
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.

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Nickel (Ni) 1000mg/L in HNO₃ 2%

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

nickel nitrate (13138-45-9)

LD50 oral rat	361,9 mg/kg
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nitric acid (7697-37-2)

LC50 inhalation rat (mg/l)	> 2,65 mg/l
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Skin corrosion/irritation : Not classified
pH: < 2
Serious eye damage/irritation : Not classified
pH: < 2
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.
STOT-single exposure : Not classified
STOT-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 : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. Harmful to aquatic life with long lasting effects. Before neutralisation, the product may represent a danger to aquatic organisms.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

nickel nitrate (13138-45-9)

LC50 fish 1	0,4 mg/l (mg Ni/L) Pimephales promelas (Fathead minnow)
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EC50 Daphnia 1	0,013 mg/l (mg Ni/L) Ceriodaphnia dubia
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nitric acid (7697-37-2)

LC50 fish 1	72 mg/l
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EC50 Daphnia 1	180 mg/l
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Threshold limit algae 1	> 19 mg/l
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

nitric acid (7697-37-2)

BCF fish 1	<= 1
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Log Pow	-2,3
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component

nickel nitrate (13138-45-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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12.6. Other adverse effects

No additional information available

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Nickel (Ni) 1000mg/L in HNO₃ 2%

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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.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
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
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Not regulated

- Transport by sea

Not regulated

- Air transport

Not regulated

- Inland waterway transport

Not regulated

- Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol 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	ICP Standard Solution. Nickel (Ni) 1000mg/L in HNO ₃ 2% - nitric acid
3(a) 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 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	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	ICP Standard Solution. Nickel (Ni) 1000mg/L in HNO ₃ 2% - nitric acid

ICP Standard Solution.

Nickel (Ni) 1000mg/L in HNO₃ 2%

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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	ICP Standard Solution. Nickel (Ni) 1000mg/L in HNO ₃ 2%
28. Substances which are classified as carcinogen category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 1 or Appendix 2, respectively.	nickel nitrate
30. Substances which are classified as reproductive toxicant category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and are listed in Appendix 5 or Appendix 6, respectively.	nickel nitrate

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

- Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)
- Storage class (LGK) : LGK 6.1D - Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects
- 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

- Danish National Regulations : 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. 3 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 3
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
Met. Corr. 1	Corrosive to metals, Category 1
Muta. 2	Germ cell mutagenicity, Category 2
Ox. Liq. 2	Oxidising Liquids, Category 2
Ox. Liq. 3	Oxidising Liquids, Category 3
Ox. Sol. 2	Oxidising Solids, Category 2

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Repr. 1B	Reproductive toxicity, Category 1B
Repr. 1B	Reproductive toxicity, Category 1B
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, 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.
H290	May be corrosive to metals.
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.
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.
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.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Skin Sens. 1	H317	Calculation method
Carc. 1A	H350	Calculation method
Repr. 1B	H360	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Chronic 3	H412	Calculation method

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.