

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 1 of 18

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

##### 1.1. Product identifier

Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

UFI: VAHR-Y1WQ-H009-667D

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

###### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

###### Uses advised against

Do not use for private purposes (household).

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

Company name: AnalytiChem GmbH  
ACD  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
Telefax: 0203/5194-290  
E-mail: info@analytichem.de  
Contact person: Abteilung Produktsicherheit  
Telephone: 0203/5194-107/117  
E-mail: produktsicherheit@analytichem.de  
Internet: www.analytichem.de  
Responsible Department: Abteilung Produktsicherheit

##### 1.4. Emergency telephone

###### number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

##### Further Information

This product is a mixture. REACH Registration Number see section 3.

#### SECTION 2: Hazards identification

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

###### Regulation (EC) No 1272/2008

Met. Corr. 1; H290

Skin Irrit. 2; H315

Eye Dam. 1; H318

Skin Sens. 1; H317

Carc. 1B; H350i

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

###### Regulation (EC) No 1272/2008

###### Hazard components for labelling

nitric acid

cobalt dinitrate

Signal word: Danger

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 2 of 18

#### Pictograms:



#### Hazard statements

H290	May be corrosive to metals.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H350i	May cause cancer by inhalation.

#### Precautionary statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Special labelling of certain mixtures

Restricted to professional users.

#### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

Mixtures in aqueous solution

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 3 of 18

**Relevant ingredients**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7697-37-2	nitric acid			1 - < 5 %
	231-714-2	007-030-00-3	01-2119487297-23	
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A; H272 H290 H331 H314 EUH071			
13477-34-4	Calcium nitrate tetrahydrate			1 - < 5 %
	233-332-1		01-2119495093-35	
	Ox. Sol. 3, Acute Tox. 4, Eye Dam. 1; H272 H302 H318			
7782-61-8	Iron(III) nitrate nonahydrate			1 - < 5 %
	233-899-5			
	Ox. Sol. 3, Skin Irrit. 2, Eye Irrit. 2; H272 H315 H319			
7664-38-2	phosphoric acid			< 1 %
	231-633-2	015-011-00-6	01-2119485924-24	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1; H290 H302 H314 H318			
7429-90-5	aluminium			< 1 %
	231-072-3	013-001-00-6		
	Flam. Sol. 2, Pyr. Sol. 1, Water-react. 2, Aquatic Acute 1; H228 H250 H261 H400			
13138-45-9	nickel dinitrate			< 0.1 %
	236-068-5	028-012-00-1	01-2119492333-38	
	Ox. Sol. 2, Carc. 1A, Muta. 2, Repr. 1B, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H272 H350i H341 H360D H332 H302 H315 H318 H334 H317 H372 H400 H410			
10141-05-6	cobalt dinitrate			< 0.1 %
	233-402-1	027-009-00-2		
	Carc. 1B, Muta. 2, Repr. 1B, Resp. Sens. 1, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360F H334 H317 H400 H410			

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

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 4 of 18

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7697-37-2	231-714-2	nitric acid	1 - < 5 %
		inhalation: ATE 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20	
13477-34-4	233-332-1	Calcium nitrate tetrahydrate	1 - < 5 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 300 - < 2000 mg/kg	
7782-61-8	233-899-5	Iron(III) nitrate nonahydrate	1 - < 5 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg	
7664-38-2	231-633-2	phosphoric acid	< 1 %
		oral: ATE = 500 mg/kg Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25	
13138-45-9	236-068-5	nickel dinitrate	< 0.1 %
		inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: LD50 = 361,9 mg/kg Skin Irrit. 2; H315: >= 20 - 100 Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	
10141-05-6	233-402-1	cobalt dinitrate	< 0.1 %
		Carc. 1B; H350i: >= 0,01 - 100 Aquatic Acute 1; H400: M=10 Aquatic Chronic 1; H410: M=10	

**Further Information**

No data available

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

Provide fresh air.  
Call a physician immediately.

**After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.  
Call a physician immediately.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water.  
Do NOT induce vomiting. Do not allow a neutralisation agent to be drunk.  
Call a physician immediately.

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

Irritant  
Cough  
Dyspnoea  
Vomiting  
Methaemoglobinaemia

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 5 of 18

Risk of serious damage to eyes.

Allergic reactions

#### **4.3. Indication of any immediate medical attention and special treatment needed**

No data available

### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

##### **Unsuitable extinguishing media**

no restriction

#### **5.2. Special hazards arising from the substance or mixture**

Non-combustible liquids

Hazardous combustion products

In case of fire may be liberated:

Nitrogen oxides (NO<sub>x</sub>)

#### **5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

In case of fire and/or explosion do not breathe fumes.

Avoid contact with skin, eyes and clothes.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Move undamaged containers from immediate hazard area if it can be done safely.

Use water spray jet to protect personnel and to cool endangered containers.

### **SECTION 6: Accidental release measures**

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

##### **General advice**

Corrosive to metals.

##### **For non-emergency personnel**

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

##### **For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

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

##### **For containment**

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

##### **For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

##### **Other information**

Provide adequate ventilation.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 6 of 18

Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Read label before use. Handle and open container with care.  
When using do not eat, drink, smoke, sniff. Use personal protection equipment.  
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.  
Do not breathe vapour/aerosol. Use extractor hood (laboratory).

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

Draw up and observe skin protection programme.  
Wash hands and face before breaks and after work and take a shower if necessary.  
Take off immediately all contaminated clothing and wash it before reuse.

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

**Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Unsuitable container/equipment material: Metal.

**Further information on storage conditions**

Keep container tightly closed.

**7.3. Specific end use(s)**

Laboratory chemicals

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

**8.1. Control parameters**

**Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
7429-90-5	Aluminium metal (Respirable Fraction)	-	1		TWA (8 h)	
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	
7664-38-2	Orthophosphoric acid	-	1		TWA (8 h)	
		-	2		STEL (15 min)	

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 7 of 18

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
13477-34-4	Calcium nitrate tetrahydrate			
Consumer DNEL, acute	oral	systemic		10 mg/kg bw/day
7782-61-8	Iron(III) nitrate nonahydrate			
Worker DNEL, long-term	inhalation	systemic		12 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic		17 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic		3 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic		8,6 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic		1,2 mg/kg bw/day
7664-38-2	phosphoric acid			
Worker DNEL, acute	inhalation	local		2 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	local		2,92 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	systemic		4,57 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local		0,36 mg/m <sup>3</sup>
Consumer DNEL, long-term	oral	systemic		0,1 mg/kg bw/day
Worker DNEL, long-term	inhalation	systemic		10,7 mg/m <sup>3</sup>
13138-45-9	nickel dinitrate			
Consumer DNEL, acute	oral	systemic		0,012 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic		0,02 mg/kg bw/day
Worker DNEL, acute	inhalation	systemic		104 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	local		1,6 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	systemic		8,8 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	local		0,1 mg/m <sup>3</sup>

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 8 of 18

#### PNEC values

CAS No	Substance	Value
Environmental compartment		
13477-34-4	Calcium nitrate tetrahydrate	
Micro-organisms in sewage treatment plants (STP)		18 mg/l
7782-61-8	Iron(III) nitrate nonahydrate	
Freshwater		0,024 mg/l
Freshwater (intermittent releases)		0,24 mg/l
Marine water		0,002 mg/l
Freshwater sediment		0,2 mg/kg
Marine sediment		0,02 mg/kg
Micro-organisms in sewage treatment plants (STP)		500 mg/l
Soil		0,026 mg/kg
13138-45-9	nickel dinitrate	
Freshwater		0,0071 mg/l
Freshwater (intermittent releases)		0 mg/l
Marine water		0,0086 mg/l
Freshwater sediment		109 mg/kg
Marine sediment		109 mg/kg
Secondary poisoning		0,12 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,33 mg/l
Soil		29,9 mg/kg

#### 8.2. Exposure controls

##### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection: goggles.

##### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm



**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 9 of 18

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Skin protection**

Wear suitable protective clothing. Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**

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

Physical state:	Liquid	
Colour:	light grey	
Odour:	odourless	
Odour threshold:	No data available	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		?
Flammability:		not applicable
		not applicable
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		X
Auto-ignition temperature:		No data available
Decomposition temperature:		not determined
pH-Value:		0
Viscosity / kinematic:		No data available
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		not determined
Vapour pressure:		No data available
Vapour pressure:		No data available
Density:		1,061 g/cm <sup>3</sup>
Bulk density:		No data available
Relative vapour density:		not determined

**9.2. Other information**

**Information with regard to physical hazard classes**

Explosive properties	
No data available	
Sustaining combustion:	No data available
Self-ignition temperature	
Solid:	not applicable

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 10 of 18

Gas: not applicable

Oxidizing properties

Not oxidising.

#### Other safety characteristics

Evaporation rate: not determined

Solvent separation test: No data available

Solvent content: 0

Solid content: 0

Sublimation point: No data available

Softening point: No data available

Pour point: No data available

No data available:

Viscosity / dynamic: No data available

Flow time: No data available

#### Further Information

Corrosive to metals.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Corrosive to metals.

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

Alkali (lye)

The product develops hydrogen in an aqueous solution in contact with metals.

### 10.4. Conditions to avoid

none

### 10.5. Incompatible materials

Keep away from: Metal.

### 10.6. Hazardous decomposition products

In case of fire may be liberated:

SECTION 5: Firefighting measures

#### Further information

No data available

## SECTION 11: Toxicological information

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

#### Acute toxicity

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

#### ATEmix calculated

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

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 11 of 18

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7697-37-2	nitric acid				
	inhalation vapour	ATE 2,65 mg/l			
13477-34-4	Calcium nitrate tetrahydrate				
	oral	LD50 > 300 - < 2000 mg/kg	Rat	Study report (2010)	OECD Guideline 423
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2007)	OECD Guideline 402
7782-61-8	Iron(III) nitrate nonahydrate				
	oral	LD50 > 2000 mg/kg	Rat	Study report (2002)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2004)	OECD Guideline 402
7664-38-2	phosphoric acid				
	oral	ATE 500 mg/kg			
13138-45-9	nickel dinitrate				
	oral	LD50 361,9 mg/kg	Rat	Regul Toxicol and Pharmacol (doi.org/10.	OECD Guideline 425
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			

**Irritation and corrosivity**

Skin corrosion/irritation: Causes skin irritation.

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

**Sensitising effects**

May cause an allergic skin reaction. (nickel dinitrate; cobalt dinitrate)

**Carcinogenic/mutagenic/toxic effects for reproduction**

May cause cancer by inhalation. (nickel dinitrate; cobalt dinitrate)

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

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**Specific effects in experiment on an animal**

There are no data available on the preparation/mixture itself.

**Additional information on tests**

There are no data available on the preparation/mixture itself.

**Practical experience**

There are no data available on the preparation/mixture itself.

**11.2. Information on other hazards**

**Other information**

There are no data available on the preparation/mixture itself.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 12 of 18

#### Further information

There are no data available on the preparation/mixture itself.

### SECTION 12: Ecological information

#### 12.1. Toxicity

The product is not: Ecotoxic.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 13 of 18

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
7697-37-2	nitric acid					
	Acute fish toxicity	LC50 mg/l	1559	96 h	Topeka shiner	Environmental Toxicology and Chemistry, other: ASTM E729-26
	Fish toxicity	NOEC	268 mg/l	30 d	juvenile Topeka shiner and with juvenile Fathead m	Study report (2009) Growth tests estimated the test chemical
	Algae toxicity	NOEC mg/l	> 419	10 d	several benthic diatoms; see results	Marine Biology 43:307-315 (1977) Ten cultures of benthic diatoms were iso
	Acute bacteria toxicity	EC50 mg/l ( )	> 1000	3 h	Activated sludge	Study report (2008) OECD Guideline 209
13477-34-4	Calcium nitrate tetrahydrate					
	Acute fish toxicity	LC50 mg/l	1378	96 h	Poecilia reticulata	Water res. 11(10):927-935 (1977) OECD Guideline 203
	Fish toxicity	NOEC	268 mg/l	30 d	juvenile Topeka shiner and with juvenile Fathead m	Study report (2009) Growth tests estimated the test chemical
7782-61-8	Iron(III) nitrate nonahydrate					
	Acute fish toxicity	LC50 mg/l	1010	96 h	Pimephales promelas	Scott, G. & Crunkilton, R. (2000). Acute The study was not carried out to any spe
	Acute algae toxicity	ErC50	130 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2002) OECD Guideline 201
	Acute crustacea toxicity	EC50	611 mg/l	48 h	Daphnia magna	Scott, G. & Crunkilton, R. (2000). Acute The study was not carried out to any spe
	Fish toxicity	NOEC	1,6 mg/l	146 d	Salvelinus namaycush	McGurk, M., Landry, F., Tang, A. & Hanks No specific guideline followed. However,
	Crustacea toxicity	NOEC	8,1 mg/l	21 d	Daphnia magna	Study report (2002) OECD Guideline 211
7664-38-2	phosphoric acid					
	Acute algae toxicity	ErC50 mg/l	> 100	72 h	Desmodesmus subspicatus	Study report (2010) EU Method C.3
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna	Study report (2010) OECD Guideline 202
	Acute bacteria toxicity	EC50 mg/l ( )	> 1000	3 h	activated sludge of a predominantly domestic sewage	Study report (2010) OECD Guideline 209
13138-45-9	nickel dinitrate					
	Acute fish toxicity	LC50 mg/l	15,3	96 h	Oncorhynchus mykiss	Aquatic Toxicology 63 (2003) 65-82 (2003) other: not reported
	Acute algae toxicity	ErC50 mg/l	0,237	72 h	Ankistrodesmus falcatus	Publication (2009) OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	0,2663	48 h	Ceriodaphnia dubia	Study report (2004) other: American society of testing and m

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 14 of 18

	Fish toxicity	NOEC mg/l	0,057	32 d	Pimephales promelas	Water Resources Research Institute. Kent	other: ASTM 1980, E-729
	Algae toxicity	NOEC	0,6 mg/l	14 d	Anabaena cylindrica	Environ. Pollut. (Series A). 25(4):241-2	other: not reported
	Crustacea toxicity	NOEC mg/l	0,04	42 d	Daphnia magna	Wat. Res. 24(7):845-852 (1990)	Chronic exposure to sublethal concentrat
	Acute bacteria toxicity	EC50 )	33 mg/l (	0,5 h	Activated sludge	Journal of Hazardous Materials. B139:332	ISO 8192

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

The product has not been tested.

**BCF**

CAS No	Chemical name	BCF	Species	Source
13138-45-9	nickel dinitrate	23	Spirodela polyrhiza	Ecotoxicology and en

**12.4. Mobility in soil**

The product has not been tested.

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

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

The product has not been tested.

**12.6. Endocrine disrupting properties**

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

**12.7. Other adverse effects**

Do not empty into drains.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Dispose of waste according to "Kreislaufwirtschafts- und Abfallgesetz (KrW-/AbfG)".

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

**14.1. UN number or ID number:**

UN 3264

**14.2. UN proper shipping name:**

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 15 of 18

**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8  
 Classification code: C1  
 Special Provisions: 274  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 Transport category: 2  
 Hazard No: 80  
 Tunnel restriction code: E

**Inland waterways transport (ADN)**

**14.1. UN number or ID number:** UN 3264  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8  
 Classification code: C1  
 Special Provisions: 274  
 Limited quantity: 1 L  
 Excepted quantity: E2

**Marine transport (IMDG)**

**14.1. UN number or ID number:** UN 3264  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8  
 Special Provisions: 274  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 EmS: F-A, S-B  
 Segregation group: 1 - acids

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number or ID number:** UN 3264  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
 Hazard label: 8  
 Special Provisions: A3 A803  
 Limited quantity Passenger: 0.5 L  
 Passenger LQ: Y840  
 Excepted quantity: E2  
 IATA-packing instructions - Passenger: 851  
 IATA-max. quantity - Passenger: 1 L  
 IATA-packing instructions - Cargo: 855  
 IATA-max. quantity - Cargo: 30 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

Warning: strongly corrosive.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 16 of 18

#### SECTION 15: Regulatory information

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

###### EU regulatory information

Authorisations (REACH, annex XIV):

Substances of very high concern, SVHC (REACH, article 59):  
cobalt dinitrate

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 27, Entry 28, Entry 75

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

###### National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

2 - obviously hazardous to water

Skin resorption/Sensitization:

Causes allergic hypersensitivity reactions.

##### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

#### SECTION 16: Other information

##### Changes

This data sheet contains changes from the previous version in section(s): 1,9.



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l

Revision date: 15.04.2024

Product code: 19688

Page 17 of 18

#### Abbreviations and acronyms

Pyr. Sol: Pyrophoric solid  
 Water-react: Substance and mixture which, in contact with water, emits flammable gas  
 Ox. Liq: Oxidising liquid  
 Ox. Sol: Oxidising solid  
 Met. Corr: Substance or mixture corrosive to metals  
 Flam. Sol: Flammable solid  
 Acute Tox: Acute toxicity  
 Skin Corr: Skin corrosion  
 Skin Irrit: Skin irritation  
 Eye Dam: Eye damage  
 Eye Irrit: Eye irritation  
 Resp. Sens: Respiratory sensitisation  
 Skin Sens: Skin sensitisation  
 Muta: Germ cell mutagenicity  
 Carc: Carcinogenicity  
 Repr: Reproductive toxicity  
 STOT RE: Specific target organ toxicity - repeated exposure  
 Aquatic Acute: Acute aquatic hazard  
 Aquatic Chronic: Chronic aquatic hazard  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service  
 LC50: Lethal concentration, 50%  
 LD50: Lethal dose, 50%

#### Relevant H and EUH statements (number and full text)

H228	Flammable solid.
H250	Catches fire spontaneously if exposed to air.
H261	In contact with water releases flammable gases.
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.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360D	May damage the unborn child.
H360F	May damage fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

#### Further Information

The above information describes exclusively the safety requirements of the product and is based on our

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### **Multielement-Standardlösung 14 Elemente in Salpetersäure etwa 0,64 mol/l**

Revision date: 15.04.2024

Product code: 19688

Page 18 of 18

present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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