

Multielement-Standardlösung 4 Elemente je 1 mg/l in Salpetersäure 2 % mit Spuren Flusssäure							
Revision date: 06.09.2023	Product code: 31307		Page 1 of 12				
SECTION 1: Identification of the substance/mixture and of the company/undertaking							
1.1. Product identifier Multielement-Standardlösur	ng 4 Elemente je 1 mg/l in Salpetersäure 2 %	% mit Spuren Flusssäure					
UFI:	4VPS-S2N6-800A-1NX0						
1.2. Relevant identified uses of th	ne substance or mixture and uses advised	against					
	estances as such or in preparations at indust						
	omain (administration, education, entertainm	nent, services, craftsmen)					
Uses advised against							
Do not use for private purpo							
1.3. Details of the supplier of the Company name: Street: Place:	AnalytiChem GmbH Stempelstraße 6 D-47167 Duisburg						
Telephone: E-mail:	0203/5194-0 info@analytichem.de	Telefax: 0203/5194-290					
Contact person: E-mail: Internet: Responsible Department:	Abteilung Produktsicherheit produktsicherheit@analytichem.de www.analytichem.de Abteilung Produktsicherheit	Telephone: 0203/5194-107/117					
1.4. Emergency telephone number:	For Hazardous Materials [or Dangero Exposure, or Accident Call CHEMTRI 1-800-424-9300 Outside USA and Ca accepted)	EC Day or Night Within USA and Canada:					
Further Information inapplicable, this product is	a mixture REACH registration number see s	section 3					
SECTION 2: Hazards identifica	ation						
2.1. Classification of the substan	co or mixturo						
2.1. Classification of the substan							
GB CLP Regulation Met Corr 1: H290							
Met. Corr. 1; H290							

Met. Corr. 1; H290 Skin Irrit. 2; H315 Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation	
Signal word:	

Pictograms:



Warning

Hazard statements H290 H315

May be corrosive to metals. Causes skin irritation.



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Causes serious eye irritation.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing
	protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
	present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P390	Absorb spillage to prevent material damage.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixtures in aqueous solution

Hazardous components

CAS No	Chemical name						
	EC No	Index No	REACH No				
	Classification (GB CLP Regulation)						
7697-37-2	nitric acid %						
	231-714-2						
	Ox. Liq. 2, Acute Tox. 1, Sk	tin Corr. 1A; H272 H330 H314 EU	H071				
7761-88-8	silver nitrate						
	231-853-9	01-2119513705-43					
	Ox. Sol. 2, Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1; H272 H290 H314 H318 H400 H410						

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

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	231-714-2 nitric acid %				
	inhalation: ATE = 0,05 mg/l (vapours); inhalation: ATE = 0,005 mg/l (dusts or mists) Ox. Liq. 2; H272: >= 99 - 100 Ox. Liq. 3; H272: >= 70 - < 99					
7761-88-8	231-853-9	silver nitrate	< 0.001 %			
	dermal: LD50 = > 348 mg/kg; oral: LD50 = > 2000 mg/kg					

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No data available

After inhalation

Provide fresh air.



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Call a doctor if you feel unwell.

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

Methaemoglobinaemia

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 (NOx) Hydrogen fluoride

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.



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Remove persons to safety. Emergency procedures Consult an expert 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. 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. When using do not eat, drink, smoke, sniff. Handle and open container with care. Use personal protection equipment. Provide adequate ventilation. Do not breathe vapour/aerosol. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. 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. Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

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

Corrosive to metals.

Unsuitable container/equipment material: Metal, Glass



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

Hints on joint storage national regulations

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

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance							
DNEL type		Exposure route	Effect	Value				
7761-88-8	silver nitrate							
Consumer DNEL, long-term		oral		0,02 mg/kg bw/day				
Worker DNEL, long-term		inhalation	systemic	0,016 mg/m³				
Consumer DNEL, long-term		inhalation	systemic	0,006 mg/m³				

PNEC values

CAS No	Substance					
Environmental	Environmental compartment Value					
7761-88-8	silver nitrate					
Freshwater	0,00004 mg/l					
Marine water C						
Freshwater sediment 438,13 mg/kg						
Marine sediment 438,13 mg/k						
Micro-organisms in sewage treatment plants (STP) 0,025 r						
Soil	1,41 mg/kg					

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye/face protection.

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



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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.

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

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 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.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

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: Colour:	Liquid colourless	
Odour:	odourless	
Odour threshold:	No data available	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and		No data available
boiling range:		
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		No data available
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		0,0
Viscosity / kinematic:		No data available
Water solubility:		completely miscible
Solubility in other solvents		
No data available		



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Partition coefficient n-octanol/water: No data available							
Vapour pressure: No data available							
Vapour pressure: No data available							
Density: 1,0086 g/cm ³							
Bulk density: No data available							
Relative vapour density: No data available							
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: No data available							
Gas: No data available							
Oxidizing properties							
Oxidizing							
Other safety characteristics							
Evaporation rate: No data available							
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)

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Cellulose Metal Glass

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

10.6. Hazardous decomposition products

In case of fire may be liberated: SECTION 5: Firefighting measures

Further information

No data available



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SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicocinetics, metabolism and distribution

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

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

CAS No	Chemical name							
	Exposure route	Dose		Species	Source	Method		
7697-37-2	nitric acid %							
	inhalation vapour	ATE	0,05 mg/l					
	inhalation dust/mist	ATE mg/l	0,005					
7761-88-8	silver nitrate							
	oral	LD50 mg/kg	> 2000	Rat	Study report (1993)	OECD Guideline 401		
	dermal	LD50 mg/kg	> 348	Guinea pig	J. Vet. Med. Sci.73: 1417 - 1423. (2011)	OECD Guideline 434		

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Further information

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



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SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

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		
7761-88-8	silver nitrate								
	Acute fish toxicity	LC50 mg/l	0,0012	96 h	Pimephales promelas	Environmental Toxicology and Chemistry.	A guideline was not specified. The test		
	Acute algae toxicity	ErC50 mg/l	0,0099	96 h	Pseudokirchneriella subcapitata	Environmental Science and Technology. 44	eline: U.S. Environmental Protection Age		
	Acute crustacea toxicity	EC50 mg/l	0,00022	48 h	Daphnia magna	Environmental Toxicology and Chemistry.	The protective effect of reactive sulphi		
	Fish toxicity	NOEC 0,00125 m	> ng/l	73 d	Oncorhynchus mykiss	Environmental Toxicology and Chemistry 2	other: ASTM 1241-98		
	Algae toxicity	NOEC mg/l	0,0012	14 d	Champia parvula	in Bishop WE, Cardwell RD Heidolph BB (E	The toxicity tests lasted 11 days for th		
	Crustacea toxicity	NOEC mg/l	0,00031	20 d	Isonychia bicolour	Environmental Toxicology and Chemistry.	20 day sublethal effects on representati		

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name				Log Pow	
7697-37-2	nitric acid %			-0,21		
BCF						
CAS No	Chemical name	BCF	Species	Source	Source	
7761-88-8	silver nitrate	70	Cyprinus carpio	Water, Air a	ind Soil	

12.4. Mobility in soil

There are no data available on the mixture itself.



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12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH. There are no data available on the mixture itself.

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

Discharge into the environment must be avoided.

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Further information

Do not allow to enter into surface water or drains.

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)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8
Classification code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E
Inland waterways transport (ADN)	
14.1. UN number or ID number:	UN 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:	III
Hazard label:	8
Classification code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Marine transport (IMDG)	



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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:	III				
Hazard label:	8				
Special Provisions:	223, 274				
Limited quantity:	5 L				
Excepted quantity:	E1				
EmS:	F-A, S-B				
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:	III				
Hazard label:	8				
Special Provisions:	A3 A803				
Limited quantity Passenger:	1 L				
Passenger LQ:	Y841				
Excepted quantity:	E1				
IATA-packing instructions - Passenger:	852				
IATA-max. quantity - Passenger:	5 L				
IATA-packing instructions - Cargo:	856				
IATA-max. quantity - Cargo:	60 L				
14.5. Environmental hazards					
ENVIRONMENTALLY HAZARDOUS:	No				
SECTION 15: Regulatory information					
15.1. Safety, health and environmental regu	lations/legislation specific for the substance or mixture				
EU regulatory information					
Restrictions on use (REACH, annex XVII):					
Entry 3, Entry 75 Marketing and use of explosives precursors (Regulation (EU) 2019/1148):					
	n (EU) 2019/1148: all suspicious transactions, and significant				
	eported to the relevant national contact point.				
National regulatory information					
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juv	enile			
	work protection guideline' (94/33/EC).				
Water hazard class (D):	1 - slightly hazardous to water				
SECTION 16: Other information					

Changes

This data sheet contains changes from the previous version in section(s): 3,9.



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Abbreviations and acronyms

Ox. Liq: Oxidising liquids Ox. Sol: Oxidising solids Met. Corr: Corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eve Dam: Eye damage Eye Irrit: Eye irritation Aquatic Acute: Acute aquatic hazard Aquatic Chronic: Chronic aquatic hazard

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
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 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 information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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