

Multielement-Standardlösung 12 Elemente in Salpetersäure 2 mol/l

Revision date: 17.02.2025

Product code: 33674

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

1.1. Product identifier

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UFI:

S280-T3DU-700Q-SQ7Q

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	For Hazardous Materials [or Danger	ous Goods] Incidents Spill, Leak, Fire,
number:	•	REC Day or Night Within USA and Canada: canada: +1 703-741-5970 (collect calls

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 Acute Tox. 4; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

nitric acid

Calcium nitrate tetrahydrate

Signal word: Pictograms:





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Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization Mixtures in aqueous solution

Relevant ingredients

CAS No	Chemical name				
	EC No	Index No	REACH No		
	Classification (Regulation (EC) No	1272/2008)			
7697-37-2	nitric acid			10 - < 15 %	
	231-714-2	01-2119487297-23			
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A, Eye Dam. 1; H272 H290 H331 H314 H318 EUH071				
13477-34-4	Calcium nitrate tetrahydrate				
	233-332-1		01-2119495093-35		
	Ox. Sol. 3, Acute Tox. 4, Eye Dam. 1; H272 H302 H318				
7631-99-4	sodium nitrate			1 - < 5 %	
	231-554-3		01-2119488221-41		
	Ox. Sol. 3, Eye Irrit. 2; H272 H319				

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	nitric acid	10 - < 15 %
		E 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 orr. 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	
7631-99-4	231-554-3	sodium nitrate	1 - < 5 %
	dermal: LD50 :	= > 5000 mg/kg; oral: LD50 = ca. 3430 mg/kg	

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006



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(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

First aider: Pay attention to self-protection!

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

Causes burns. Irritant Cough Dyspnoea Vomiting Methaemoglobinaemia Risk of serious damage to eyes.

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)

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.



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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

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. 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

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.





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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 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

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	

DNEL/DMEL values

CAS No	Substance				
DNEL type		Exposure route	Effect	Value	
13477-34-4	Calcium nitrate tetrahydrate				
Consumer DNEL, acute oral			systemic	10 mg/kg bw/day	
DNEO assistere					

PNEC values

CAS No	Substance		
Environmental compartment Value			
13477-34-4	Calcium nitrate tetrahydrate		
Micro-organism	Micro-organisms in sewage treatment plants (STP) 18 mg/l		
7631-99-4	sodium nitrate		
Micro-organism	Micro-organisms in sewage treatment plants (STP) 18 mg/l		

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

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



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By long-term hand contact Recommended glove articles: KCL 741 Dermatril® L Recommended material: NBR (Nitrile rubber) 0,11 mm Wearing time with permanent contact: > 480 min

By short-term hand contact Recommended glove articles: KCL 741 Dermatril® L Recommended material: NBR (Nitrile rubber) 0,11mm 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

Respiratory protection necessary at: aerosol or mist formation

The entrepeneur 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:		
Odour:	like: Nitric acid	
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
Viscosity / kinematic:		No data available
Water solubility:		completely miscible
Solubility in other solvents		
No data available		
Partition coefficient n-octanol/water:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available
Density:		No data available



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Bulk density:	No data available	
Relative vapour density:	No data available	
9.2. Other information		
Information with regard to physical hazard clas	ses	
Explosive properties		
No data available		
Sustaining combustion:	No data available	
Self-ignition temperature		
Solid: Gas:	No data available 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. Oxidising agent

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. Amines, Ammonia, Alcohols, Alkali metals, Hydrogen peroxide Copper, Combustible solids, Solvent, Alkaline earth metal, mercury (Hg).

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Cellulose Metal

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 Regulation (EC) No 1272/2008

Toxicocinetics, metabolism and distribution

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

Acute toxicity

Harmful if inhaled.

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	
7631-99-4	sodium nitrate					
	oral	LD50 ca. 3430 mg/kg	Rat	Study report (1980)	OECD Guideline 401	
	dermal	LD50 > 5000 mg/kg	Rat	Study report (2000)	OECD Guideline 402	

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.

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

Corrosive to the respiratory tract.

Following ingestion Gastric perforation

Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.

Irritating to respiratory system.

Pulmonary oedema

see also Section 4

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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



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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.

SECTION 12: Ecological information

12.1. Toxicity

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

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		juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)	Growth tests estimated the test chemical
	Algae toxicity	NOEC mg/l	> 419		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
7631-99-4	sodium nitrate						
	Acute fish toxicity	LC50 mg/l	> 100	96 h	Oncorhynchus mykiss	Study report (2000)	OECD Guideline 203
	Acute crustacea toxicity	EC50 mg/l	3581	48 h	Daphnia magna	J. Water Pollut. Control Fed. 37(9):1308	no data
	Fish toxicity	NOEC	268 mg/l		juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)	Growth tests estimated the test chemical

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

12.4. Mobility in soil

There are no data available on the mixture itself.

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.

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.



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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.

SECTION 14: Transport information

Land transport (ADR/RID)

<u>14.1. UN number or ID number:</u>	UN 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
Classification code:	C1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	80
Tunnel restriction code:	E
Inland waterways transport (ADN)	
<u>14.1. UN number or ID number:</u>	UN 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
Classification code:	C1
Limited quantity:	1 L
Excepted quantity:	E2
Marine transport (IMDG)	
14.1. UN number or ID number:	UN 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	I
Hazard label:	8
Special Provisions:	-
Limited quantity:	11
Excepted quantity:	E2
EmS:	F-A, S-B
Segregation group:	1 - acids



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Air transport (ICAO-TI/IATA-DGR)			
14.1. UN number or ID number:	UN 2031		
14.2. UN proper shipping name:	NITRIC ACID		
14.3. Transport hazard class(es):	8		
14.4. Packing group:	1		
Hazard label:	8		
Special Provisions:	A212		
Limited quantity Passenger:	Forbidden		
Passenger LQ:	Forbidden		
Excepted quantity:	E0		
IATA-packing instructions - Passenger:		Forbidden	
IATA-max. quantity - Passenger:		Forbidden	
IATA-packing instructions - Cargo:		855	
IATA-max. quantity - Cargo:		30 L	
14.5. Environmental hazards			
ENVIRONMENTALLY HAZARDOUS:	No		
14.6. Special precautions for user			
No dangerous good in sense of this transport regulation.			
14.7. Maritime transport in bulk according to IMO instruments			
No dangerous good in sense of this transport regulation.			
SECTION 15: Regulatory information			
15.1. Safety, health and environmental regulations/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):			
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:

Water hazard class (D):

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). 1 - slightly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,9,11,12,14,15.

Abbreviations and acronyms

Ox. Liq: Oxidising liquid Ox. Sol: Oxidising solid Met. Corr: Substance or mixture corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Eye Dam: Eye damage Eye Irrit: Eye irritation



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Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Acute Tox. 4; H332	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
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. Provide appropriate information, instructions and training to users

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