

according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 1 of 12

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

1.1. Product identifier

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

UFI: S3SW-M1KD-700K-DF2Q

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 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 Dangerous Goods] Incidents Spill, Leak, Fire,

<u>number:</u> 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 Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Warning

Pictograms:



Hazard statements

H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 2 of 12

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and 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.

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			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No	1272/2008)		
7697-37-2	nitric acid			
	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			
10022-31-8	bariumnitrat			
	233-020-5	056-002-00-7		
Ox. Sol. 2, Acute Tox. 3, Acute Tox. 4, Eye Irrit. 2; H272 H301 H332 H319			19	

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

Specific Conc. Limits, M-factors and ATE

opcome cone: Emilio, in lactors and ATE					
CAS No	EC No	Chemical name	Quantity		
	Specific Conc. I	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				
10022-31-8	233-020-5	bariumnitrat	1 - < 5 %		
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: LD50 = > 50 - < 300 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.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 3 of 12

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

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.

Avoid contact with skin, eyes and clothes.

Additional information

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

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.



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 4 of 12

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.

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

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

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)	



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 5 of 12

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
10022-31-8	bariumnitrat			
Worker DNEL	, long-term	inhalation	systemic	2,73 mg/m³
Worker DNEL, long-term		dermal	systemic	8,141 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	0,67 mg/m³
Consumer DNEL, long-term		dermal	systemic	4,07 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	0,58 mg/kg bw/day

PNEC values

CAS No	Substance		
Environmental compartment Value		Value	
10022-31-8 bariumnitrat			
Freshwater		0,115 mg/l	
Freshwater sediment		600 mg/kg	
Micro-organisms in sewage treatment plants (STP)		62,2 mg/l	
Soil 207,7 mg/kg		207,7 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

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

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) 0,11 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).



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 6 of 12

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: Liquid
Colour: 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 No data available Flash point: Auto-ignition temperature: No data available Decomposition temperature: No data available pH-Value: acidic No data available Viscosity / kinematic: Water solubility: No data available

Solubility in other solvents

No data available

Dissolution rate: No data available Partition coefficient n-octanol/water: No data available Dispersion stability: No data available No data available Vapour pressure: Vapour pressure: No data available Density: No data available Relative density: No data available Bulk density: No data available Relative vapour density: No data available No data available Particle characteristics:

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



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 7 of 12

Solvent content: No data available Solid content: No data available No data available Sublimation point: Softening point: No data available Pour point: No data available

No data available:

No data available Viscosity / dynamic: 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

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

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

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



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 8 of 12

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7697-37-2	nitric acid	nitric acid			
	inhalation vapour	ATE 2,65 mg/l			
10022-31-8	bariumnitrat				
	oral	LD50 > 50 - < 300 mg/kg	Rat	Study report (2013)	OECD Guideline 423
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			

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.

Information on likely routes of exposure

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

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

Endocrine disrupting properties

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

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.



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 9 of 12

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	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
10022-31-8	bariumnitrat						
	Acute fish toxicity	LC50 mg/l	> 3,5	96 h	Danio rerio	Study report (2010)	OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	> 1,15	72 h	Pseudokirchneriella subcapitata	Study report (2010)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	14,5	48 h	Daphnia magna	Journal of the Fisheries Research Board	Not a guideline study but meets generall
	Fish toxicity	NOEC mg/l	>= 100	33 d	Danio rerio	Study report (2014)	OECD Guideline 210
	Crustacea toxicity	NOEC	2,9 mg/l	21 d	Daphnia magna	Journal of the Fisheries Research Board	The test did not exacty follow an existi
	Acute bacteria toxicity	EC50 mg/l ()	> 1000	3 h	activated sludge of a predominantly domestic sewag	Study report (2010)	OECD Guideline 209

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.

BCF

CAS No	Chemical name	BCF	Species	Source
10022-31-8	bariumnitrat	68,4	Lepomis macrochirus	Archives of Environm

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.

12.7. Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 10 of 12

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

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

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

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): Ш 14.4. Packing group: Hazard label: Ω Classification code: C1 Special Provisions: 274 Limited quantity: 5 L Excepted quantity: E1 Transport category: Hazard No: 80 Tunnel restriction code: Ε

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):814.4. Packing group:IIIHazard label:8Classification code:C1Special Provisions:274Limited quantity:5 LExcepted quantity:E1

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):814.4. Packing group:IIIHazard label:8Special Provisions:223, 274Limited quantity:5 LExcepted quantity:E1EmS: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):814.4. Packing group:IIIHazard label:8Special Provisions:A3 A803Limited quantity Passenger:1 L



according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 11 of 12

Passenger LQ: Y841 Excepted quantity: E1

IATA-packing instructions - Passenger:852IATA-max. quantity - Passenger:5 LIATA-packing instructions - Cargo:856IATA-max. quantity - Cargo:60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

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

Information according to Directive

Not subject to 2012/18/EU (SEVESO III)

2012/18/EU (SEVESO III):

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

This product is regulated 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).

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): 1,12.

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 Skin Irrit: Skin irritation Eye Irrit: Eye irritation

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
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.

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H331 Toxic if inhaled. H332 Harmful if inhaled.

EUH071 Corrosive to the respiratory tract.

Print date: 03.01.2024



Safety Data Sheet

according to Regulation (EC) No 1907/2006

ICP concentrate barium 10.000 g Ba/l Ba(NO3)2 in nitric acid 0.3 mol/l traceable to NIST

Revision date: 03.01.2024 Product code: 21584 Page 12 of 12

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