

Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/I for ICP - traceable to NIST Revision date: 13.03.2025 Product code: 03159 Page 1 of 11 SECTION 1: Identification of the substance/mixture and of the company/undertaking 1.1. Product identifier Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/l for ICP - traceable to NIST UFI: E7R8-2062-W00C-GJC0 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 AnalytiChem GmbH Company name: 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 produktsicherheit@analytichem.de E-mail: Internet: www.analytichem.de Responsible Department: Abteilung Produktsicherheit For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, 1.4. Emergency telephone Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: number: 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

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008Hazard components for labellingnitric acidSignal word:Danger

Pictograms:



Hazard statements H290

May be corrosive to metals.



Thallium Standard 1 000g TI/L TI in nitric acid approx. 0.5 mol/L for ICP - traceable to NIST

i nailium Star	idard 1.000g Tile Ti in hitric acid approx. 0.5 monitor ICP - traceable to N	131
Revision date: 13.03.2025	Product code: 03159	Page 2 of 11
H315	Causes skin irritation.	
H318	Causes serious eye damage.	
Precautionary statemer	nts	
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.	
P302+P352	IF ON SKIN: Wash with plenty of water and soap.	
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.	

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			1 - < 5 %	
	231-714-2	007-030-00-3	01-2119487297-23		
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A, Eye Dam. 1; H272 H290 H331 H314 H318 EUH071				
10102-45-1	thallium nitrate			< 1 %	
	233-273-1	081-002-00-9			
	Acute Tox. 2, Acute Tox. 2, STOT RE 2, Aquatic Chronic 2; H330 H300 H373 H411				

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	1 - < 5 %
		E 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 orr. 1B; H314: >= 5 - < 20	
10102-45-1	233-273-1	thallium nitrate	< 1 %
	inhalation: AT mg/kg	E = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); oral: ATE = 5	

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.



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/I for ICP - traceable to NIST

Revision date: 13.03.2025

Product code: 03159

Page 3 of 11

After contact with skin

Wash immediately with: Water Take off immediately all contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

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
- 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



Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/I for ICP - traceable to NIST

Revision date: 13.03.2025

Product code: 03159

Page 4 of 11

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.

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.

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



Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/l for ICP - traceable to NIST

Revision date: 13.03.2025

Product code: 03159

Page 5 of 11

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)	

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).

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:	colourless
Odour:	odourless



Thallium Standard 1.000g	ΓΙ/L ΤΙ in nitric acid approx. 0.5 mol/l for ICP	- traceable to NIST
Revision date: 13.03.2025	Product code: 03159	Page 6 of 11
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:	No data available	
Viscosity / kinematic:	No data available	
Water solubility:	completely miscible	
Solubility in other solvents	completely misciple	
No data available		
Dissolution rate:	No data available	
Partition coefficient n-octanol/water:	No data available	
Dispersion stability:	No data available	
Vapour pressure:	No data available	
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	
Particle characteristics:	No data available	
9.2. Other information		
Information with regard to physical haz	ard classes	
Explosive properties		
No data available		
Sustained combustibility:	No data available	
Self-ignition temperature		
Solid:	No data available	
Gas:	No data available	
Oxidizing properties		
No data available		
Other safety characteristics		
Evaporation rate:	No data available	
Solvent separation test:	No data available	
Solvent content:	No data available	
Solid content:	No data available	
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		

SECTION 10: Stability and reactivity



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/I for ICP - traceable to NIST

Revision date: 13.03.2025

Product code: 03159

Page 7 of 11

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 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 2,6	5 mg/l			
10102-45-1	thallium nitrate					
	oral	ATE	5 mg/kg			
	inhalation vapour	ATE	0,5 mg/l			
	inhalation dust/mist	ATE	0,05 mg/l			

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.

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

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.



Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/l for ICP - traceable to NIST

according to Regulation (EC) No 1907/2006

Revision date: 13.03.2025

Product code: 03159

Page 8 of 11

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 mixture itself.

Specific effects in experiment on an animal

There are no data available on the mixture itself.

Additional information on tests

There are no data available on the mixture itself.

Practical experience

There are no data available on the mixture itself.

11.2. Information on other hazards

Endocrine disrupting properties

There are no data available on the mixture itself.

Other information

There are no data available on the mixture itself.

Further information

There are no data available on the 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	

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.

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



Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/l for ICP - traceable to NIST

Revision date: 13.03.2025

Product code: 03159

Page 9 of 11

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

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):	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)	
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



Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/I for ICP - traceable to NIST

Revision date: 13.03.2025	I/L II in hitric acid approx. 0.5 mol/l for ICP - traceable to r Product code: 03159	Page 10 of 11
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		
Information according to Directive 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)	
Marketing and use of explosives precursor	s (Regulation (EU) 2019/1148):	
Acquisition, introduction, possession o	r use of this product by the general public is restricted by Regulation tions, and significant disappearances and thefts should be reported to	
National regulatory information		
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juve work protection guideline' (94/33/EC).	nile
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): 9,12.

Abbreviations and acronyms

Ox. Liq: Oxidising liquid Met. Corr: Substance or mixture corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eye Dam: Eye damage STOT RE: Specific target organ toxicity - repeated exposure Aquatic Chronic: Chronic aquatic hazard

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

Classification	lassification procedure	
Met. Corr. 1; H290	On basis of test data	
Skin Irrit. 2; H315	Calculation method	
Eye Dam. 1; H318	Calculation method	



Thallium Standard 1.000g TI/L TI in nitric acid approx. 0.5 mol/l for ICP - traceable to NIST

Revision date: 13.03.2025

Product code: 03159

Page 11 of 11

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	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. 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.)