

Titanium mordant pure 70 parts by volume nitric acid 65 % 13 parts by volume hydrofluoric acid 40 %								
Revision date: 06.07.2023	Product code: 2720)5	Page 1 of 12					
SECTION 1: Identification of the	SECTION 1: Identification of the substance/mixture and of the company/undertaking							
<u>1.1. Product identifier</u> Titanium mordant pure 70 pa	1.1. Product identifier Titanium mordant pure 70 parts by volume nitric acid 65 % 13 parts by volume hydrofluoric acid 40 %							
	substance or mixture and uses advise	-						
Uses advised against Do not use for private purpos	ses (household).							
1.3. Details of the supplier of the s								
Company name:	AnalytiChem GmbH							
Street:	Stempelstraße 6							
Place:	D-47167 Duisburg	T-1-60000/5404.000						
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						
<u>1.4. Emergency telephone</u> number:	Exposure, or Accident Call CHEMTF	ous Goods] Incidents Spill, Leak, Fire, 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. 2; H310 Acute Tox. 2; H330 Acute Tox. 3; H301 Skin Corr. 1A; 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 40,11 %

hydrofluoric acid 3,65 %

Signal word:

Danger



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Pictograms:

acid 40 % Product code: 27205

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Hazard statements

H290	May be corrosive to metals.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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.

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

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)		
7697-37-2	nitric acid			40 - < 45 %
	231-714-2	007-030-00-3	01-2119487297-23	
	Ox. Liq. 3, Met. Corr. 1, Acute	Tox. 3, Skin Corr. 1A; H272 H	I290 H331 H314 EUH071	
7664-39-3	Hydrofluoric acid %	1 - < 5 %		
	231-634-8 009-003-00-1 01-2119458860-33		01-2119458860-33	
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Skin Corr. 1A; H310 H330 H300 H314			

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



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Specific	Conc.	Limits,	M-factors	and ATE

CAS No	EC No	Chemical name	Quantity	
	Specific Conc.	Specific Conc. Limits, M-factors and ATE		
7697-37-2	-2 231-714-2 nitric acid			
	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			
7664-39-3	231-634-8	Hydrofluoric acid %	1 - < 5 %	
	LC50 = 1610 p	= 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); inhalation: om (gases); dermal: ATE = 5 mg/kg; oral: ATE = 5 mg/kg Skin Corr. 1A; H314: in Corr. 1B; H314: >= 1 - < 7 Eye Irrit. 2; H319: >= 0,1 - < 1		

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

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. Call a physician immediately.

After inhalation

Provide fresh air. Call a physician immediately.

After contact with skin

Remove contaminated, saturated clothing immediately. Wash immediately with: Ca-Gluconate solution Water 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.

After ingestion

Rinse mouth immediately and drink plenty of water. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately.

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

Irritant - skin irritation and eye damage Causes burns. Cough Dyspnoea Risk of serious damage to eyes. Vomiting Methaemoglobinaemia

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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



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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

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. Do not inhale explosion and combustion gases. Avoid contact with skin, eyes and clothes.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Corrosive to metals.

For non-emergency personnel

Provide adequate ventilation. Use personal protection equipment. Avoid contact with skin, eyes and clothes. Remove persons to safety. Emergency procedures Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

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

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

Clean contaminated articles and floor according to the environmental legislation.

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



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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Read label before use. Handle and open container with care. When using do not eat, drink, smoke, sniff. Keep container tightly closed. Use personal protection equipment. Use extractor hood (laboratory). Provide adequate ventilation. 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. Make available sufficient washing facilities Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

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

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

Further information on storage conditions

Store in a dry place.

Unsuitable container/equipment material: Metal, Glass

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
7664-39-3	Hydrogen fluoride (as F)	1.8	1.5		TWA (8 h)	
		3	2.5		STEL (15 min)	
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
7664-39-3	Hydrogen fluoride	Fluoride	3 mg/L	Urine	End of shift

8.2. Exposure controls

Appropriate engineering controls

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



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equipment.

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

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: Face protection shield goggles.

Hand protection

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

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

By long-term hand contact Trade name/designation KCL 897 Butoject® Suitable material: Butyl caoutchouc (butyl rubber) 0,3 mm Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation KCL 720 Camapren® Suitable material: CR (polychloroprene, chloroprene rubber) 0,65 mm Wearing time with occasional contact (splashes): > 240 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

Wear breathing apparatus if exposed to vapours/dusts/aerosols. In case of inadequate ventilation wear respiratory protection.

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:	stinging
Odour threshold:	No data available
Melting point/freezing point:	

not determined



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Boiling point or initial boiling point and	No data available	
boiling range:		
Flammability:	not applicable	
Lower explosion limits:	not determined	
Upper explosion limits:	not determined	
Flash point:	Х	
Auto-ignition temperature:	No data available	
Decomposition temperature:	not determined	
pH-Value:	acidic	
Viscosity / kinematic:	No data available	
Solubility in other solvents		
not determined		
Dissolution rate:	No data available	
Partition coefficient n-octanol/water:	not determined	
Dispersion stability:	No data available	
Vapour pressure:	No data available	
Vapour pressure:	No data available	
Density:	1,239 g/cm³	
Relative density:	No data available	
Bulk density:	No data available	
Relative vapour density:	not determined	
Particle characteristics:	No data available	
9.2. Other information		
Information with regard to physical hazard classes		
Explosive properties		
No data available		
Self-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Oxidizing properties		
The product is: oxidising, Oxidising.		
Other safety characteristics		
Evaporation rate:	not determined	
Solid content:	not determined	
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		
No data available		
SECTION 40. Stability and recetivity		
SECTION 10: Stability and reactivity		
40.4 Depativity		

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



em brond according to Regulation (EC) No 1907/2006 Titanium mordant pure 70 parts by volume nitric acid 65 % 13 parts by volume hydrofluoric

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Alkali (lye) Corrosive to metals.

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

10.4. Conditions to avoid

Radiant heat.

10.5. Incompatible materials

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

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

Fatal in contact with skin. Fatal if inhaled. Toxic if swallowed. Obtain special instructions before use.

ATEmix calculated

ATE (oral) 137,0 mg/kg; ATE (dermal) 137,0 mg/kg; ATE (inhalation vapour) 13,70 mg/l; ATE (inhalation dust/mist) 1,370 mg/l

CAS No	Chemical name	Chemical name					
	Exposure route	Dose		Species	Source	Method	
7697-37-2	nitric acid	-					
	inhalation vapour	ATE 2,6	5 mg/l				
7664-39-3	Hydrofluoric acid %						
	oral	ATE	5 mg/kg				
	dermal	ATE	5 mg/kg				
	inhalation vapour	ATE	0,5 mg/l				
	inhalation dust/mist	ATE	0,05 mg/l				
	inhalation (1 h) gas	LC50 ppm	1610	Rat			

Irritation and corrosivity

Causes severe skin burns and eye damage. Causes serious eye damage.

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.



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710			acid 40 %		
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Based Aspiratio r	eated exposure on available data, the cla n hazard on available data, the cla				
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. Informa	<u>tion on other hazards</u>				
	e disrupting properties are no data available on	the properties/mixt	uro itoolf		
Other info Advers gastric Pulmo					
SECTION 12	2: Ecological informat	tion			
<u>12.1. Toxicity</u>					
Based	on available data, the cl	assification criteria ar	e not met.		
CAS No	Chemical name	T		-	
	Aquatic toxicity	Dose	[h] [d] Species	Source	Method
7697-37-2	nitric acid				

	Aquatic toxicity	DUSC		[1,1] [[6]	opecies	Cource	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

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



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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

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Discharge into the environment must be avoided.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (nitric acid, Hydrofluoric acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	86
Tunnel restriction code:	E
Inland waterways transport (ADN)	
14.1. UN number or ID number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (nitric acid, Hydrofluoric acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274 802
Limited quantity:	1 L
Excepted quantity:	E2
Marine transport (IMDG)	
14.1. UN number or ID number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid, Hydrofluoric acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
Special Provisions:	274
Limited quantity:	1 L



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Excepted quantity:	E2			
EmS:	F-A, S-B			
Air transport (ICAO-TI/IATA-DGR)				
14.1. UN number or ID number:	UN 2922			
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid, Hydrofluoric acid)			
14.3. Transport hazard class(es):	8			
14.4. Packing group:	II			
Hazard label:	8+6.1			
Special Provisions:	A3 A803			
Limited quantity Passenger:	0.5 L			
Passenger LQ:	Y840			
Excepted quantity:	E2			
IATA-packing instructions - Passenger: IATA-max. quantity - Passenger:	851 1 L			
IATA-max. quantity - Passenger. IATA-packing instructions - Cargo:	855			
IATA-packing instructions - Cargo: IATA-max. quantity - Cargo:	30 L			
14.5. Environmental hazards	00 L			
ENVIRONMENTALLY HAZARDOUS:	No			
14.6. Special precautions for user				
Warning: Oxidising substances. strong				
14.7. Maritime transport in bulk according to	o IMO instruments			
not applicable				
SECTION 15: Regulatory information				
15.1. Safety, health and environmental regul	lations/legislation specific for the substance or mixture			
EU regulatory information				
Restrictions on use (REACH, annex XVII):				
Entry 3, Entry 75				
National regulatory information				
• •				
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juve work protection guideline' (94/33/EC). Observe employment restriction			
	under the Maternity Protection Directive (92/85/EEC) for expectant or	15		
	nursing mothers.			
Water hazard class (D):	1 - slightly hazardous to water			
15.2. Chemical safety assessment				

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

SECTION 16: Other information

Changes

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



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Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service LC50: Lethal concentration, 50% LD50: Lethal dose, 50% Ox. Liq: Oxidising liquid Met. Corr: Substance or mixture corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Eye Dam: Eye damage

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. 2; H310	Calculation method
Acute Tox. 2; H330	
Acute Tox. 3; H301	Calculation method
Skin Corr. 1A; 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.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H331	Toxic 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 data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)