

TITANIUM - HCL

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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product Identifier

Product form Liquid
Chemical Name TITANIUM - HCL
Index No. Mixture
EC No. Mixture
CAS No. Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified uses Laboratory Chemical
1.2.2 Uses advised against No additional information available.

1.3 Details of the supplier of the safety data sheet

De Bruyn Spectroscopic Solutions
70/145 Chattan Road
Glenfernness
Midrand, 2191 Gauteng
South Africa

1.4 Emergency telephone number

RSA: 086 100 0366
Namibia: 080 010 0366
Other Countries: Contact Local Emergency Services.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification Regulation (EC) No 1272/2008 (CLP):
Met cor. 1 H290
Skin Corr. 1B, H314
Eye Dam 1, H318
STOT SE 3, H335

Full text of hazard classes and H statements: see Section 16.

Adverse physicochemical, human health and environmental effects:

May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation.

2.2 Label Elements

Labelling (Regulation (EC) No 1272/2008

Hazard Pictograms:



Signal word: DANGER

Hazardous ingredients: Hydrochloric Acid

Hazard Statements:

H290 – May be corrosive to metals.

H314 – Causes severe skin burns and eye damage.

H335 – May cause respiratory irritation.

Precautionary Statements:

P261 - Do not breathe mist, vapour, fume, or spray.

P271 – Use only outdoors or in a well-ventilated area.

P264 - Wash hands, forearms, and face thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 - IF ON SKIN (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower.

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P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing.
P304+P340 – IF INHALED: remove to fresh air and keep at rest in a position suitable for breathing.
P310 -Immediately call a POISON CENTER/doctor

Reduced Labelling (< = 125 ml)

Pictogram:



Signal Word: Danger

Hazard Statements: Causes severe skin burns and eye damage.

Precautionary Statements:

Wear protective gloves/ protective clothing/ eye protection/ face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Supplemental Hazard Statements: none

2.3 Other hazards

Other hazards not contributing to the classification:

Titanium: Airborne particulates may cause damage to the respiratory tract, liver, and kidney through repeated or prolonged inhalation. When product is subject to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other heat generating processes, potentially hazardous airborne particles and/or fumes may be generated.

This substance/mixture contains no components considered to be either persistent, bio accumulative and toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable.

3.2 Mixture

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hydrochloric acid	(CAS-No.) 7647-01-1 (EC-No.) 231-595-7 (EC Index-No.) 017-002-00-2	30	Met corr. 1, H290; Skin Corr. 1B, H314; Eye dam 1, H318; STOT SE 3, H335
Titanium	(CAS No.)7440-28-0 (EC No.) 231-138-1	0.01-10 000 µg/mL	Not classified.

Specific concentration limits:
(C ≥ 25%) Skin Corr. 1B, H314
(10 ≤ C <25%) Skin Irr. 2, H315
(10 ≤ C <25%) Eye irr. 2, H319
(C ≥ 10%) STOT SE 3, H335

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

First aid measures general

Call a physician immediately. First aiders need to protect themselves.

First aid measures after inhalation

Remove person to fresh air and keep comfortable for breathing. Call a physician/doctor if breathing is difficult.

First aid measures after skin contact

Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a doctor/physician immediately.

First aid measures after eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a doctor/physician immediately.

First aid measures after ingestion

Rinse mouth. Do not induce vomiting. Call a doctor/physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact	Causes severe burns.
Symptoms/effects after eye contact	Causes serious damage to eyes. Risk of blindness.
Symptoms/effects after ingestion	Severe burns of the mouth and throat, as well lower respiratory tract.
Symptoms/effects after inhalation	Shortness of breath, difficulty breathing.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Water spray. Dry powder. Foam. Carbon dioxide. Use water fog to control fumes.
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5.2 Special hazards arising from the substance or mixture

Fire hazard	Product not combustible.
Hazardous decomposition products in case of fire	Toxic fumes may be released. Hydrogen chloride gas, chlorine.

5.3 Advice for firefighters

Protection during firefighting	Do not attempt to act without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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5.4 Further Information

Suppress (knock down) gases/vapours/mists with a water fog. Cool closed containers exposed to fire with water spray.
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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel

Emergency procedures	Avoid substance contact. Do not breathe vapours, mist or spray. Ensure adequate ventilation. Prevent access to unprotected or untrained personnel.
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6.1.2 For emergency responders

Protective equipment	Do not attempt to act without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up:	Cover spill area with inert material to avoid spread. Neutralise with lime or soda ash. Flush area.
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Other Information

Dispose of materials or solid residues at an authorized site

6.4 Reference to other sections

For further information refer to section 8, 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling

Wear recommended personal protective equipment. See section 8. Avoid contact with eyes and skin. Do not inhale fume, vapour, or mist. Do not use hot water for dilution and never add acid to water. Water added to acid can cause uncontrolled boiling and splashing.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Immediately change contaminated clothing. Wash hands before breaks and at the end of workday. Do not eat, drink, or smoke while working.

7.2	<u>Conditions for safe storage, including any incompatibilities</u>
	Storage conditions Store in a cool, dry, well-ventilated area. Keep out of direct sunlight and away from heat, water, and incompatible materials. Keep containers tightly closed.
	Incompatible materials Oxidizing agents, bases, metals, organic compounds. Corrosive to mild steel.
	Packaging Polyethylene, polypropylene, polyvinyl chloride.
7.3	<u>Specific end users</u> No additional information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure Limits

Hydrochloric Acid (CAS: 7647-01-1)		
United Kingdom	WEL STEL (Gas and mist) WEL TWA (Gas and mist)	5 ppm / 8 mg/m ³ 1 ppm / 2 mg/m ³
South Africa; HCA Regulations	TWA (8 Hour) (Gas and mist)	4 ppm

8.2 Exposure controls

Appropriate engineering controls

Ensure availability of eye wash and shower in work area. Engineering measures are preferred to reduce exposure. General methods include mechanical ventilation, process or personal enclosure and control of process conditions.

Personal protective equipment

Hand protection

Protective gloves PVC, rubber.

Eye protection

Tightly fitting safety goggles/face mask.

Skin and body protection

Acid resistant protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.



Environmental exposure controls

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Product form	Liquid
Appearance	Clear, colorless, or slightly yellow liquid
Odour	Pungent
Odour threshold	0.3ppm (can cause olfactory fatigue)
pH	<1 @ 20°C
Relative evaporation rate (butylacetate = 1)	No data available
Melting point/Freezing Point	-50°C
Initial Boiling point	85°C (at 1.013 hPa)
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Flammability (solid, gas)	Not applicable
Vapour pressure	21.8 hPa @ 20°C
Vapour density	No data available
Relative vapour density @ 20°C	1.267 @ 20°C (air = 1)
Density	1.15 g/cm ³ @ 20°C
Solubility (water)	Miscible

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Log Pow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	Not classified as explosive
Explosive limits	Not applicable
Oxidising properties	None

9.2 Additional information

No additional data available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

The product is non-reactive under recommended conditions of use, storage and transport.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

The product reacts with metals with release of highly flammable hydrogen gas. Reacts with alkalies with evolution of heat. Reacts with oxidizers generating toxic chlorine gas. Reacts with cyanides or sulphides generating toxic hydrogen cyanide or hydrogen sulphide gas.

10.4 Conditions to avoid

Heat, direct sunlight, contact with common metals, alkali metals, incompatible products.

10.5 Incompatible materials

Bases, amines, alkali metals, metals, oxidizers.

10.6 Hazardous decomposition products

When heated to decomposition, emits hydrogen chloride gas and will react with water or steam to produce heat and toxic, corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (Dermal)	Not classified
Acute toxicity (Respiratory)	Not classified
Skin corrosion/irritation:	Causes severe skin burns and eye damage.
Serious eye damage/irritation	Serious eye damage, implicit
Respiratory or skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-SE	May cause respiratory irritation
STOT RE	Not classified
Aspiration hazard	Not classified

11.2 Additional Information

Endocrine disrupting properties

This substance/mixture does not contain components considered to have endocrine disrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology - general	Before neutralisation, the product may represent a danger to aquatic organisms.
Acute aquatic toxicity	Not classified
Chronic aquatic toxicity	Not classified

12.2 Persistence and degradability

Not applicable for inorganic compounds.

12.3 **Bioaccumulative potential** Not applicable for inorganic compounds.

12.4 **Mobility** Will be neutralized by naturally occurring alkalinity.

12.5 **Results of PBT and vPvB assessment**
This substance/mixture contains no components considered to be either persistent, bio accumulative or toxic (PBT), or very persistent and very bio accumulative (vPvB) at levels of 0.1% or higher.

12.6 **Endocrine disrupting properties**
Assessment This substance/mixture does not contain components considered to have endocrine disrupting properties for environment , according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

12.7 **Other adverse effects**
No additional information.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods: Product and packaging

The generation of waste should be avoided or minimised wherever possible. This material and packaging must be disposed of in a safe way in consultation with licensed waste disposal company in accordance with local legal requirements.

SECTION 14: TRANSPORT INFORMATION

In accordance with ADR / IMDG / IATA

	ADR	IMDG	IATA	Class diamond
UN Number	1789	1789	1789	
Proper Shipping Name	HYDROCHLORIC ACID	HYDROCHLORIC ACID	HYDROCHLORIC ACID	
Hazard Class	8	8	8	
Subsidiary hazard class	-	-	-	
Packing Group	II	II	II	
Marine pollutant	No	No	No	

Limited/Excepted quantity: 1L

SECTION 15: REGULATORY INFORMATION

15.1 **Safety, health, and environmental regulations/legislation specific for the substance or mixture**
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use:
This product does not contain any substance listed on Annex XIV of the REACH Regulation (EC) Nr. 1907/2006. Regulation (EU) 2019/1148 on the marketing and use of explosives precursors: None

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : No restrictions.

National Regulations:
Occupational Health and Safety Act 85 of 1993.
Hazardous Chemical Agents Regulations.
SANS 10228, 10229, 10232-4.

15.2 **Chemical Safety Assessment**
No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Full text of R-, H- and EUH-statements:

Sk cor. Cat 1B, H314	Skin corrosion, Category 1A, Causes seveverskin burns.
Eye Dam 1, H318	Eye Damage Category 1, Causes serious eye damage
Met.Cor. 1, H290	Metal corrosion Category 1, May cause metal corrosion.
Sk cor. Cat 1A, H314	Skin corrosion, Category 1A, Causes seveverskin burns and eye damage.
STOT SE, 3, H335	Specific target organ toxicity, single exposure, May cause respiratory irritation.
WEL STEL	Workplace Exposure Limit; Short term Exposure Limit
TWA	Time weighted average

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Revision history	Changes	Date
Revision 2.0	Original document.	30-06-2024