

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Product name : Titanium Trichloride–Sulfuric Acid Test Solution
Product code : USPTS346

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory chemical

1.3. Supplier

Spectracer UK Ltd.

Second Floor,
27 Gloucester Place,
London,
W1U 8HU,
United Kingdom.

Tel: +44 (0) 207 193 9114

Fax: +44 (0) 203 432 4686

Email: contact@spectracer.co.uk

Web: www.spectracer.com

1.4. Emergency telephone number

Emergency number : Tel: +44(0)1933445260 Option 1. Language: English only.
For Chemical Emergencies Only
Llewellyn (Safety Advisors) Europe Ltd

Country	Organization/Company	Address	Emergency number	Comment
Mexico	Servicio de Informacion Toxicologica Sintox	Tintoreto #32 Edif. a Desp. Col. Nochebuena Mixcoac México, D.F.	1 800 009 2800 +52 55 5611 2634 /+52 55 5598 9095	
USA	American Association of Poison Control Centers		1-800-222-1222	

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation H314 Causes severe skin burns and eye damage
Category 1B

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage
Precautionary statements (GHS-US) : P260 - Do not breathe fume, vapors, mist
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
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/...
P363 - Wash contaminated clothing before reuse
P405 - Store locked up

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P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
sulfuric acid	(CAS No) 7664-93-9	5 - 30	Skin Corr. 1A, H314
titanium(III)chloride	(CAS No) 7705-07-9	1 - 5	Pyr. Sol. 1, H250 Skin Corr. 1B, H314
hydrochloric acid	(CAS No) 7647-01-0	1 - 5	Met. Corr. 1, H290 Skin Corr. 1B, H314 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a 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 physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/injuries after skin contact	: Burns.
Symptoms/injuries after eye contact	: Serious damage to eyes.
Symptoms/injuries after ingestion	: Burns.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe fume, vapors, mist.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe fume, vapors, mist. Wear personal protective equipment.
Hygiene measures : Wash Skin thoroughly after handling. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat-ignition. Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

sulfuric acid (7664-93-9)		
ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³
ACGIH	Remark (ACGIH)	Pulm func
OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
hydrochloric acid (7647-01-0)		
ACGIH	ACGIH Ceiling (ppm)	2 ppm
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (Ceiling) (mg/m ³)	7 mg/m ³
OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm
titanium(III)chloride (7705-07-9)		
Not applicable		

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Protective clothing. Protective goggles. Gloves. Avoid all unnecessary exposure.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Mixture contains one or more component(s) which have the following colour(s): Colourless to light yellow Red to violet
Odor	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour(s): No data available on odour
Odor threshold	: No data available
pH	: < 2
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Soluble in water. Completely miscible.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

sulfuric acid (7664-93-9)	
LD50 oral rat	2140 mg/kg body weight (Test data of the pure substance; Rat; Equivalent or similar to OECD 401; Experimental value)
ATE US (oral)	2140.000 mg/kg body weight

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

pH: < 2

Serious eye damage/irritation : Not classified

pH: < 2

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

sulfuric acid (7664-93-9)	
Additional information	Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

hydrochloric acid (7647-01-0)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after skin contact : Burns.

Symptoms/injuries after eye contact : Serious damage to eyes.

Symptoms/injuries after ingestion : Burns.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

sulfuric acid (7664-93-9)	
LC50 fish 1	> mg/l >16 - <28,LC50; 96 h; Lepomis macrochirus; Static system; Fresh water
EC50 Daphnia 1	> 100 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
Threshold limit algae 1	> 100 mg/l (EC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Desmodesmus subspicatus; Static system; Fresh water; Experimental value)

hydrochloric acid (7647-01-0)	
LC50 other aquatic organisms 2	250 (240 - 260) mg/l (48h) Crustaceans; Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.), Ministry of Agric.Fish.Food, Fish.Lab.Burnham-on-Crouch, Essex, and Fish Exp.Station Conway, North Wales :12 p.

12.2. Persistence and degradability

sulfuric acid (7664-93-9)	
Persistence and degradability	Biodegradability: Not applicable. Hydrolysis in water. Biodegradability in soil: Not applicable. No (test)data available on mobility of the substance.
ThOD	Not applicable

titanium(III)chloride (7705-07-9)	
Persistence and degradability	Biodegradability: Not applicable.

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titanium(III)chloride (7705-07-9)	
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable

12.3. Bioaccumulative potential

sulfuric acid (7664-93-9)	
Bioaccumulative potential	Bioaccumulation: Not applicable.

titanium(III)chloride (7705-07-9)	
Bioaccumulative potential	Bioaccumulation: No data available.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not applicable

TDG

Not applicable

Transport by sea

Transport document description (IMDG) : UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS sulphuric acid ; titanium(III)chloride ; hydrochloric acid), 8, II
UN-No. (IMDG) : 3264
Proper Shipping Name (IMDG) : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Class (IMDG) : 8 - Corrosive substances
Packing group (IMDG) : II - substances presenting medium danger
Limited quantities (IMDG) : 1 L

Air transport

Transport document description (IATA) : UN 3264 Corrosive liquid, acidic, inorganic, n.o.s. (CONTAINS sulphuric acid ; titanium(III)chloride ; hydrochloric acid), 8, II
UN-No. (IATA) : 3264
Proper Shipping Name (IATA) : Corrosive liquid, acidic, inorganic, n.o.s.
Class (IATA) : 8 - Corrosives
Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

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sulfuric acid (7664-93-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not subject to reporting requirements of the United States SARA Section 313 Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb
hydrochloric acid (7647-01-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Not subject to reporting requirements of the United States SARA Section 313 Subject to reporting requirements of United States SARA Section 313	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
CERCLA RQ	5000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
titanium(III)chloride (7705-07-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

sulfuric acid (7664-93-9)
Listed on IARC (International Agency for Research on Cancer) Listed as carcinogen on NTP (National Toxicology Program)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date : 03/11/2015

Full text of H-phrases:

H250	Catches fire spontaneously if exposed to air
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation

NFPA health hazard

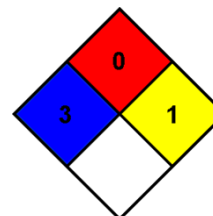
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



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HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : H

H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.