

Safety Data Sheet

#90030603 · Full 16-section SDS

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

PRODUCT	CAS NUMBER	FORMULA	VERSION	REVISION DATE
Titanium (III) chloride 20% in 4M hydrochloric acid	7705-07-9	TiCl₃	10	21 Jul 2026

SECTION 1

Identification

Product name	Titanium (III) chloride 20% in 4M hydrochloric acid
CAS number	7705-07-9
Chemical formula	TiCl ₃
Molecular weight	154.26
SMILES	Cl[Ti](Cl)Cl
EC / EINECS number	231-728-9
Recommended use & restrictions	For research and development. Laboratory chemicals. Manufacture of substances. Not suitable for human or veterinary purposes.
Emergency telephone	0344 892 0111 — National Poisons Information Service (NPIS) (United Kingdom — for healthcare professionals (via TOXBASE))

SECTION 2

Hazard identification

**DANGER**

CODE	HAZARD STATEMENT
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
CODE	PRECAUTIONARY STATEMENT
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+330	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+361	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse with water/shower
P305+351+338	IF IN EYES: Rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
Other hazards (e.g. PBT / vPvB, not classified)	Not classified as PBT or vPvB. Does not contain components considered to have endocrine-disrupting properties

SECTION 3

Composition / information on ingredients

Purity / concentration

Water (CAS: 7732-18-5) Concentration: 59 - 71% - non-hazardous
 Titanium (III) Chloride (CAS: 7705-07-9) Concentration: 15 - 25%- H250, H314
 Hydrochloric Acid (CAS: 7647-01-0) Concentration: 14 - 16% - H290, H314, H318, H335.

Impurities / stabilising additives

Not applicable

First-aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

Skin contact

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake). Administer activated charcoal (20 - 40g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Symptoms / effects & medical attention

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. Causes burns by all exposure routes

Inhalation - Single exposure may cause the following adverse effects: Causes severe burns. Difficulty in breathing. Unconsciousness, possibly death.

Skin contact - Single exposure may cause the following adverse effects: Causes severe burns. Blistering may occur. May be absorbed in the body and cause dizziness, nausea and vomiting. Unconsciousness, death

Eye contact- Single exposure may cause the following adverse effects: Causes serious eye damage. Unconsciousness, possibly death.

Ingestion- Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death

Treat symptomatically. Immediately call a POISON CENTER/doctor.

SECTION 5

Fire-fighting measures

Suitable extinguishing media	Alcohol-resistant foam, carbon dioxide, dry powder, or water fog
Unsuitable extinguishing media	Water jet (spreads fire)
Special hazards	Specific hazards: Corrosive. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Ambient fire may liberate hazardous vapours. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.
Advice for firefighters	Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6

Accidental release measures

Personal precautions & PPE	Do not breathe vapour/spray. Avoid contact with skin and eyes. For personal protection, see section 8. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
Environmental precautions	Avoid discharge to drains/watercourses. Avoid discharge into drains, water courses or onto the ground.
Containment & clean-up methods	Absorb with non-combustible material; dispose of waste safely; flush contaminated area with water

For specific precautions, see Section 8 and Section 13.

SECTION 7

Handling & storage

Storage temperature	Ambient
Precautions for safe handling	Work under hood Take action to prevent static discharges. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation. Handle and store contents under inert gas. Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Wash contaminated skin thoroughly after handling. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use.
Conditions for safe storage (incompatibilities)	Store in a dry place. Store in a closed container. Store at ambient temperature. Air sensitive.

SECTION 8

Exposure controls / personal protection

Occupational exposure limits (OEL / WEL)	<i>Not applicable</i>
DNEC/PNEC data	<i>Not applicable</i>
Eye / face protection	Chemical splash goggles
Skin / hand protection	Recommended gloves: Nitrile rubber. Glove Thickness: 0.11mm Breakthrough time: 480mins. No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.
Respiratory protection	Self-contained breathing apparatus

SECTION 9

Physical & chemical properties

Density (g/mL)	1.256 g/mL DERIVED FROM: LITERATURE
Flash point	Not applicable
Acidity	Acid DERIVED FROM: LITERATURE
Appearance / physical state	Liquid DERIVED FROM: LITERATURE
Colour	Yellow to dark purple. DERIVED FROM: LITERATURE
Odour	Not known DERIVED FROM: LITERATURE
Melting / freezing point	Not provided DERIVED FROM: LITERATURE
Boiling point	Not provided DERIVED FROM: LITERATURE
Solubility (water)	Fully miscible with water (solution) DERIVED FROM: LITERATURE
pH	Strongly acidic (pH < 1) DERIVED FROM: LITERATURE
Vapour pressure	Not provided DERIVED FROM: LITERATURE
Partition coefficient (log Pow)	Not provided DERIVED FROM: LITERATURE
Auto-ignition / decomposition temp	Not provided DERIVED FROM: LITERATURE

SECTION 10

Stability & reactivity

Chemical stability / reactivity	Corrosive in contact with metals. Stable under the prescribed storage conditions
Conditions to avoid	Heat, moisture, incompatible materials. Sensitive to air.
Incompatible materials	Water (reactive), strong oxidizers, metals
Hazardous decomposition products	Toxic/corrosive gases (e.g., chlorine, hydrogen chloride)

SECTION 11

Toxicological information**Acute toxicity (LD50 / LC50)** *No data available*

Skin corrosion / irritation Hydrochloric acid (CAS: 7647-01-0)
CAUSES BURNS
Test:- Result: Corrosive. Species: reconstructed human epidermis (RhE)

Eye corrosion / irritation Hydrochloric acid (CAS: 7647-01-0)
Test:- Result: Causes serious eye damage, risk of blindness.
Test: - Result: Corrosive. Species: Bovine cornea.

Respiratory / skin sensitisation Hydrochloric acid (CAS: 7647-01-0)
Test: Maximisation test (GPMT). Result: Negative. Species: Guinea pig.

Carcinogenicity / mutagenicity / reproductive Hydrochloric acid (CAS: 7647-01-0)
Germ cell Mutagenicity- Conflicting results have been seen in different studies.
Carcinogenicity- No evidence of carcinogenicity in animal studies.

Titanium (III) chloride (CAS: 7705-07-9)
Test: Miotic recombination assay. Result: Negative. Species: Bacillus subtilis
Test: sister chromatid exchange assay Result: Negative. Species: mammalian cells
Test: Ames test. Result: Negative. With and without metabolic activation..
Species: Escherichia coli
Test: Ames test. Result: Negative. With and without metabolic activation..
Species: Salmonella typhimurium

STOT (single / repeated exposure) Hydrochloric acid (CAS: 7647-01-0)
May cause respiratory irritation

Aspiration hazard Not provided

Endocrine disruptors Not provided

SECTION 12

Ecological information

Aquatic toxicity Titanium (III) chloride (CAS: 7705-07-9)
LC50 Value: 7.31 mg/l, Duration: 28 days, Species: Onchorhynchus mykiss (Rainbow trout)

Hydrochloric acid (CAS: 7647-01-0)
LC50, Value: - Duration: 48 hours, Species: Leuciscus idus
LC50, Value: 282 mg/l, Duration: 96 hours, Species: Gambusia affinis (Mosquito fish)
EC50, Value: 56 mg/l, Duration: 72 hours, Species: Daphnia magna

Persistence & degradability Not provided

Bioaccumulative potential Not provided

Mobility in soil Not provided

PBT / vPvB assessment Not classified as PBT/vPvB

SECTION 13

Disposal considerations**Waste treatment / disposal methods**

Dispose of contents/container in accordance with national regulations

SECTION 14

Transport information**UN number** UN3264**Proper shipping name** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.**Class** 8**Packing group** II**Transport category** 2**Tunnel code** (E)**Packing instruction (ADR)** P001**Packing instruction (IMDG)** P001**Environmental hazards** *Not applicable***Special precautions for user** *Not applicable*

SECTION 15

Regulatory information**REACH code** Y110**UFI code** PTM6-XFDW-1C8M-NP7Y**ECHA notification** *Not applicable***Chemical safety assessment carried out?** *Not applicable*

SECTION 16

Other information**Revision notes / other information** *Not applicable*

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