# Titanium chloride (TiCl₃) (cas 7705-07-9) MSDS

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifiers

Product name: Titanium(III) chloride

Product Number: 514381
Brand: Anonymous
CAS-No.: 7705-07-9

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

Identified uses: Laboratory chemicals, Manufacture of substances

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

- **Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**
  - Pyrophoric solids (Category 1)
  - Skin corrosion (Category 1B)

- **Classification according to EU Directives 67/548/EEC or 1999/45/EC**
  - Reacts violently with water. Spontaneously flammable in air. Causes burns.

### 2.2 Label elements

**Labelling according Regulation (EC) No 1272/2008 [CLP]**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Signal word</th>
<th>Hazard statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Danger Symbol" /></td>
<td>Danger</td>
<td>Catches fire spontaneously if exposed to air. H250&lt;br&gt;Causes severe skin burns and eye damage. H314</td>
</tr>
</tbody>
</table>

**Precautionary statement(s)**

- P222: Do not allow contact with air.
- P231: Handle under inert gas.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- 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 or doctor/ physician.
- P422: Store contents under inert gas.

**Supplemental Hazard information (EU)**

- EUH014: Reacts violently with water.

**According to European Directive 67/548/EEC as amended.**

<table>
<thead>
<tr>
<th>Hazard symbol(s)</th>
<th>R-phrase(s)</th>
<th>S-phrase(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Fire Symbol" /></td>
<td>Reacts violently with water. R14&lt;br&gt;Spontaneously flammable in air. R17&lt;br&gt;Causes burns. R34</td>
<td>Keep under nitrogen. S6&lt;br&gt;In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S30&lt;br&gt;Never add water to this product. S36/37/39&lt;br&gt;Wear suitable protective clothing, gloves and eye/face protection. S43&lt;br&gt;In case of fire, use fire-fighting equipment on basis class D. S45&lt;br&gt;In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</td>
</tr>
</tbody>
</table>

### 2.3 Other hazards - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 **Substances**  
Synonyms: Titanium trichloride  
Formula: Cl₃Ti  
Molecular Weight: 154.23 g/mol  
Component: 

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium trichloride</td>
<td>-</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7705-07-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-728-9</td>
</tr>
</tbody>
</table>

4. **FIRST AID MEASURES**

4.1 **Description of first aid measures**

**General advice**  
Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**  
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**  
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**  
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 **Most important symptoms and effects, both acute and delayed**  
Cough, Shortness of breath, Headache, Nausea, Vomiting

4.3 **Indication of any immediate medical attention and special treatment needed**

no data available

5. **FIREFIGHTING MEASURES**

5.1 **Extinguishing media**

**Suitable extinguishing media**  
Dry powder

5.2 **Special hazards arising from the substance or mixture**  
Hydrogen chloride gas, Titanium/titanium oxides

5.3 **Advice for firefighters**  
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 **Further information**

no data available

6. **ACCIDENTAL RELEASE MEASURES**

6.1 **Personal precautions, protective equipment and emergency procedures**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 **Environmental precautions**  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**  
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**  
For disposal see section 13.

7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**  
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition. - No smoking.

7.2 **Conditions for safe storage, including any incompatibilities**  
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage.

Air sensitive. Reacts violently with water. Handle and store under inert gas.
7.3 Specific end uses  
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION  

8.1 Control parameters  
Components with workplace control parameters

8.2 Exposure controls  
Appropriate engineering controls  
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment  
Eye/face protection  
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection  
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Protective gloves against thermal risks  
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection  
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection  
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES  

9.1 Information on basic physical and chemical properties  
a) Appearance  
Form: crystalline
Colour: purple
b) Odour  
no data available
c) Odour Threshold  
no data available
d) pH  
no data available
e) Melting point/freezing point  
Melting point/range: 440 °C - dec.
f) Initial boiling point and boiling range  
no data available
g) Flash point  
not applicable
h) Evaporation rate  
no data available
i) Flammability (solid, gas)  
no data available
j) Upper/lower flammability or explosive limits  
no data available
k) Vapour pressure  
no data available
l) Vapour density  
no data available
m) Relative density  
no data available
n) Water solubility  
no data available
o) Partition coefficient: n-octanol/water  
no data available
p) Autoignition temperature  
The substance or mixture is pyrophoric with the category 1.
q) Decomposition temperature  
no data available
9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY
10.1 Reactivity
no data available
10.2 Chemical stability
no data available
10.3 Possibility of hazardous reactions
Reacts violently with water.
10.4 Conditions to avoid
Exposure to moisture.
10.5 Incompatible materials
Strong oxidizing agents, Reacts violently with water., Keep away from water.
10.6 Hazardous decomposition products
Reacts with water to form: - Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects
Acute toxicity
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity
Reproductive toxicity - rat - Intratesticular
Paternal Effects: Testes, epididymis, sperm duct.
Specific target organ toxicity - single exposure
no data available
Specific target organ toxicity - repeated exposure
no data available
Aspiration hazard
no data available
Potential health effects
Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion May be harmful if swallowed. Causes burns.
Skin May be harmful if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.

Signs and Symptoms of Exposure
Cough, Shortness of breath, Headache, Nausea, Vomiting

Additional Information
RTECS: XR1924000

12. ECOLOGICAL INFORMATION
12.1 Toxicity
12.2 Persistence and degradability
no data available
12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 2441  IMDG: 2441  IATA: 2441

14.2 UN proper shipping name
ADR/RID: TITANIUM TRICHLORIDE, PYROPHORIC
IMDG: TITANIUM TRICHLORIDE, PYROPHORIC
IATA: Titanium trichloride, pyrophoric

Passenger Aircraft: Not permitted for transport
Cargo Aircraft: Not permitted for transport

14.3 Transport hazard class(es)
ADR/RID: 4.2 (8)  IMDG: 4.2 (8)  IATA: 4.2 (8)

14.4 Packaging group
ADR/RID: I  IMDG: I  IATA: -

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.