

**SAFETY DATA SHEET**

According to 1907/2006/EC, Article 31

Revision number: 2

Revision date: 01/08/2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name: Titanium(IV) Chloride (14% in Dichloromethane, ca. 1.0mol/L)
Product code: T2052

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

Identified uses: Reagents.

1.3 Details of the supplier of the safety data sheet**Supplier:**

TCI EUROPE N.V.
 Boerenveldseweg 6
 Haven 1063
 B-2070 Zwijndrecht
 Telephone: +32(0)3 735 07 00
 E-mail: sales-eu@tcichemicals.com

1.4 Emergency telephone number: +32(0)70 245 245

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Acute toxicity (Oral)	Category 3
Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity - Single exposure [Category 1]	Respiratory system, Central nervous system
Specific target organ toxicity - Repeated exposure [Category 1]	Liver, Central nervous system
Specific target organ toxicity - Repeated exposure [Category 2]	Blood
Long-term aquatic hazard	Category 2

2.2 Label elements**Pictograms or hazard symbols****Signal word**

Danger

Hazard statements

H301-Toxic if swallowed.
 H314-Causes severe skin burns and eye damage.
 H350-May cause cancer.
 H370-Causes damage to organs : Respiratory system Central nervous system
 H372-Causes damage to organs through prolonged or repeated exposure : Liver Central nervous system

Precautionary statements

H373-May cause damage to organs through prolonged or repeated exposure : Blood
 H411-Toxic to aquatic life with long lasting effects.
 P260-Do not breathe mist, vapours or spray.
 P280-Wear protective gloves, protective clothing, face protection.
 P301+P330+P331+P310-IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.
 P303+P361+P353+P310+P363-IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.
 P304+P340+P310-IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
 P305+P351+P338+P310-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable
vPvB: Not applicable

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components: Titanium(IV) Chloride (14% in Dichloromethane, ca. 1.0mol/L)
Percent:
CAS RN: 7550-45-0
EC-No: 231-441-9
Synonyms: Titanium Tetrachloride (14% in Dichloromethane, ca. 1.0mol/L)
Chemical Formula: TiCl₄
Hazardous composition: **Chemical name: Dichloromethane** Conc.: < 86%
CAS RN:75-09-2 EC No.: 200-838-9
Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Muta. 2, Carc. 2, STOT SE 1, STOT RE 1, Aquatic Chronic 2
H302: Harmful if swallowed. H315: Causes skin irritation. H319: Causes serious eye irritation. H341:
Suspected of causing genetic defects. H350: May cause cancer. H370: Causes damage to Respiratory
system, Central nervous system. H372: Causes damage to Liver, Central nervous system through
prolonged or repeated exposure. H373: May cause damage to Blood through prolonged or repeated
exposure. H411: Toxic to aquatic life with long lasting effects.
Chemical name: Titanium(IV) Chloride Conc.: > 14%
CAS RN:7550-45-0 EC No.: 231-441-9
Skin Corr. 1B
H314: Causes severe skin burns and eye damage. EUH014: Reacts violently with water.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
Skin contact: Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician.
Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Ingestion: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting.
Protection of first-aiders: A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Dry chemical, carbon dioxide.
Unsuitable extinguishing media: Water

5.2 Special hazards arising from the substance or mixture

Carbon monoxide, carbon dioxide etc

5.3 Advice for firefighters

Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so. When extinguishing fire, be sure to wear personal protective equipment

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc
6.2 Environmental precautions	Be careful not to let it flow into rivers, etc., since adverse effects on the environment are concerned
6.3 Methods and materials for containment and cleaning up	Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust). In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations. Do not allow contact with water. Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.
6.4 Reference to other sections	For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated. Avoid all contact! May develop pressure. Open carefully.
7.2 Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store in a refrigerator. Store under inert gas. Protect from moisture. Store locked up. Store away from incompatible materials such as oxidizing agents. Heat-sensitive, Moisture-sensitive
7.3 Specific end use(s)	No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	No data available (Dichloromethane) ACGIH TLV(TWA):50 ppm
8.2 Exposure controls	Install a closed system or local exhaust. Also install safety shower and eye bath.
Respiratory protection:	Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.
Hand protection:	Impervious gloves.
Eye protection:	Safety goggles. A face-shield, if the situation requires.
Skin and body protection:	Impervious protective clothing. Protective boots, if the situation requires.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state (20°C):	Liquid
Form:	Clear
Colour:	Colorless - Reddish yellow
Odour:	Characteristic
pH:	No data available
Melting point/freezing point:	No data available (Dichloromethane) -95°C
Boiling point/range:	No data available (Dichloromethane) 39°C
Flash point:	No data available
Evaporation rate(Butyl Acetate=1):	No data available
Flammability(solid, gas):	No data available
Flammability or explosive limits:	
Lower:	No data available
Upper:	No data available
Vapour pressure:	No data available.
Vapour density:	No data available
Relative density:	1.37
Solubility(ies):	
[Water]	No data available
[Other solvents]	No data available
Partition coefficient:	No data available (Dichloromethane) 1.25
n-octanol/water:	
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Dynamic Viscosity:	No data available
Kinematic viscosity:	No data available

9.2 Other safety information No data available

SECTION 10: Stability and reactivity

10.1 Reactivity	No data available
10.2 Chemical stability	Stable under proper conditions.
10.3 Possibility of hazardous reactions	Decomposes in contact with water and liberates toxic gases.
10.4 Conditions to avoid	Moisture
10.5 Incompatible materials	Oxidizing agents, Strong bases, Light metals
10.6 Hazardous decomposition products	Carbon monoxide, carbon dioxide etc

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute Toxicity:	No data available (Dichloromethane) orl-rat LD50:1600 mg/kg orl-hmn LDLo:357 mg/kg ihl-rat LC50:76000 mg/m ³ /4H
Skin corrosion/irritation:	No data available (Dichloromethane) skn-rbt 810 mg/24H SEV
Serious eye damage/irritation:	No data available (Dichloromethane) eye-rbt 162 mg MOD
Respiratory or skin sensitization:	No data available
Germ cell mutagenicity:	No data available (Dichloromethane) dni-hmn-fbr 5000 ppm/1H-C mmo-sat 5700 ppm (+/-S9) sce-ham-Ing 5000 ppm/1H-C
Carcinogenicity:	
IARC =	No data available
NTP =	No data available (Dichloromethane) ihl-rat TCLo : 3500 ppm/6H/2Y-I IARC = 2A NTP = b
Reproductive toxicity:	No data available
STOT-single exposure:	No data available
STOT-repeated exposure:	No data available
Aspiration hazard:	No data available

SECTION 12: Ecological information

12.1 Toxicity

Fish:	No data available
Crustacea:	No data available
Algae:	No data available

12.2 Persistence and degradability No data available

12.3 Bioaccumulative potential No data available

12.4 Mobility in soil

Log Pow:	No data available
Soil adsorption (Koc):	No data available
Henry's Law (PaM³/mol):	No data available

12.5 Results of PBT and vPvB assessment

PBT:	Not applicable
vPvB:	Not applicable

12.6 Other adverse effects No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recycle to process, if possible. Consult your local regional authorities. Observe all federal, state and local regulations when disposing of the substance.

SECTION 14: Transport information

14.1 UN number	3289
14.2 UN proper shipping name	
ADR/RID	Toxic liquid, corrosive, inorganic, n.o.s
IMDG/IMO	Toxic liquid, corrosive, inorganic, n.o.s
ICAO/IATA	Toxic liquid, corrosive, inorganic, n.o.s
14.3 Transport hazard class(es)	
ADR/RID	6.1: Toxic substance
Subsidiary risk:	8: Corrosive.
IMDG/IMO	6.1: Toxic substance
Subsidiary risk:	8: Corrosive.
ICAO/IATA	6.1: Toxic substance
Subsidiary risk:	8: Corrosive.
14.4 Packaging group	
ADR/RID	II
IMDG/IMO	II
ICAO/IATA	II
14.5 Environmental hazards	
Marine pollutant	Y
14.6 Special precautions for user	No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
Water Hazard Classes (WGK) :	Class 1 - Low hazard to waters
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No.1907/2006	Not listed
15.2 Chemical safety assessment	A chemical safety assessment has not been carried out.

SECTION 16: Other information

Prepared by:	TCI EUROPE N.V.
Issue date:	01/08/2019

This SDS was prepared sincerely on the basis of the information we could obtain, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

End of Safety Data Sheet