

Material Safety Data Sheet

Version 5.3
Revision Date 01/17/2012
Print Date 11/02/2012

NOV 12 2012

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Titanium(IV) chloride

Product Number : 89545
Brand : Fluka

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Target Organ Effect, Highly toxic by inhalation, Corrosive

Target Organs

Lungs

Other hazards which do not result in classification

Lachrymator.

GHS Classification

Acute toxicity, Inhalation (Category 2)

Skin corrosion (Category 1B)

Serious eye damage (Category 1)

GHS Label elements, Including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage.

H330

Fatal if inhaled.

Precautionary statement(s)

P260

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P280

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

P284

Wear respiratory 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.

HMIS Classification

Health hazard: 4
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 2

NFPA Rating

Health hazard: 4
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Titanium tetrachloride

Formula : Cl₄Ti

Molecular Weight : 189.68 g/mol

Component	Concentration
Titanium tetrachloride	
CAS-No.	7550-45-0
EC-No.	231-444-5
Index-No.	022-001-00-5

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

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

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry powder

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Titanium/titanium oxides

Further information

The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Keep away from water. Never allow product to get in contact with water during storage.

Handle and store under inert gas. Moisture sensitive. Reacts violently with water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Titanium tetrachloride	7550-45-0	TWA	0.5 mg/m ³	USA Workplace Environmental Exposure Levels (WEEL)

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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).

Hand 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.

Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

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

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form liquid
Colour no data available

Safety data

pH no data available
Melting point/freezing point Melting point/range: -25 °C (-13 °F)
Boiling point 135 - 136 °C (275 - 277 °F)
Flash point no data available
Ignition temperature no data available
Autoignition temperature no data available
Lower explosion limit no data available
Upper explosion limit no data available
Vapour pressure 12.8 hPa (9.6 mmHg) at 20 °C (68 °F)
67 hPa (50 mmHg) at 55 °C (131 °F)
Density 1.73 g/mL at 20 °C (68 °F)
Water solubility no data available
Partition coefficient: n-octanol/water no data available
Relative vapour density no data available
Odour no data available
Odour Threshold no data available
Evaporation rate no data available

10. STABILITY AND REACTIVITY**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Reacts violently with water.

Conditions to avoid

Exposure to moisture.

Materials to avoid

Strong oxidizing agents, Water

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, Titanium/titanium oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Oral LD50 no data available

Inhalation LC50

LC50 Inhalation - rat - 1 h - 1,300 mg/m3

Dermal LD50
no data available

Other information on 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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.

Signs and Symptoms of Exposure

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Synergistic effects

no data available

Additional information

RTECS: XR1925000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1838 Class: 6.1 (8) Packing group: I
Proper shipping name: Titanium tetrachloride
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: Hazard zone B

IMDG

UN number: 1838 Class: 6.1 (8) Packing group: I EMS-No: F-A, S-B
Proper shipping name: TITANIUM TETRACHLORIDE
Marine pollutant: No

IATA

UN number: 1838 Class: 6.1 (8)
Proper shipping name: Titanium tetrachloride
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards

Target Organ Effect, Highly toxic by inhalation, Corrosive

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Titanium tetrachloride	7550-45-0	2007-07-01

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

CAS-No.	Revision Date
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Titanium tetrachloride 7550-45-0 2007-07-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Titanium tetrachloride	7550-45-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Titanium tetrachloride	7550-45-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Titanium tetrachloride	7550-45-0	2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

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