

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product name Titanium Tetrachloride

UN/ID no UN1838

Recommended use of the chemical and restrictions on use

Recommended Use production of titanium dioxide, Production of titanium metal components, chemical intermediate, polyolefines catalyst, surface treatment, manufacture of titanium metal

Uses advised against For use in industrial installations only.

Details of the supplier of the safety data sheet

Supplier Address INEOS Pigments
A Division of INEOS USA Inc.
6752 Baymeadow Drive
Glen Burnie, MD 21060

For further information, please contact

E-mail address regulatory.pigments@ineos.com

24 Hour Emergency Phone Number

Emergency telephone Chemtrec (USA) 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Vapors)	Category 2
Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label Elements

EMERGENCY OVERVIEW

DANGER

Hazard statements

Fatal if inhaled
Causes severe skin burns and eye damage
May cause respiratory irritation



Appearance	clear yellow	Physical State	Liquid Fumes in contact with air.	Odor	pungent
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Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray

Do not get in eyes, on skin, or on clothing

Use only outdoors or in a well-ventilated area

Wear respiratory protection

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

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion

IF SWALLOWED: rinse mouth. Do NOT induce vomiting

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant in accordance with local/regional/national/international regulations

Other Information

Hazards not otherwise classified (HNOC) Not applicable

Other Hazards

Reacts with water. Forms corrosive solutions and an opaque white cloud of titanium oxychloride and hydrochloric acid.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name Titanium Tetrachloride
Formula TiCl₄

Chemical name	CAS No	weight-%	Trade secret
Titanium tetrachloride	7550-45-0	100%	*

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4. FIRST AID MEASURES

FIRST AID MEASURES**General advice**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove contaminated clothing and shoes.

Eye Contact

Wipe excess product with a clean dry cloth before rinsing. Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Skin contact	Remove contaminated clothing and shoes. BEFORE rinsing with water, carefully wipe away with dry cloth until product is removed from skin. Wash off immediately with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.
Inhalation	If suspected fumes are still present, rescuer should wear appropriate self-contained breathing apparatus. Remove from exposure, lie down. If breathing is difficult, give oxygen. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Call a physician or poison control center immediately.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. If swallowed, do not induce vomiting; seek medical advice immediately and show this safety data sheet.
Self-protection of the first aider	Ensure operatives are trained to minimize exposures. Avoid contact with skin, eyes or clothing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. First aider: Pay attention to self-protection. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Symptoms Fatal if inhaled. The product causes burns of eyes, skin and mucous membranes.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. May cause pulmonary edema. Keep victim under observation. Pulmonary edema and chemical pneumonia can develop and may occur hours after exposure. The symptoms of pulmonary edema are often only manifested after several hours and can be aggravated by physical exertion. Pulmonary edema is manifested mainly by increasing respiratory difficulties. A victim must remain under medical supervision as long as the possibility of pulmonary edema due to delayed toxicity is not ruled out.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use CO2, dry chemical, dry sand, alcohol-resistant foam
Unsuitable Extinguishing Media	DO NOT USE WATER.
Specific hazards arising from the chemical	Substance will react with water (some violently), releasing corrosive and/or toxic gases. Contact with water when in a vessel or confined space can generate dangerous pressure and heat. Hydrogen evolved from the reaction of titanium tetrachloride with water/moisture and some metals presents a high risk of fire/explosion. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	Hazardous metal fumes and oxides. Halogenated compounds. Reacts violently with water. Contact with water when in a vessel or confined space can generate dangerous pressure and heat. If tanks / containers have not been damaged, cool closed tanks and containers and pipes exposed to fire by spraying water to prevent build-up of pressure. Do not allow run-off from fire-fighting to enter drains or water courses. Runoff to sewer may create fire or explosion hazard. Given its boiling temperature, risk of bursting of the tanks and capacities by increase of the internal pressure under the action of the heat of the fire. The possibility of mixing with water in the pipes, should be avoided. Hydrogen released from the reaction of titanium tetrachloride on contact with water and certain metals presents a high risk of fire / explosion. Titanium tetrachloride is not flammable but may be caught in a fire. In the event of fire and only if the containers are not damaged, if it is possible then uniformly cool with water spray where it is exposed to heat, but only if there is NO direct contact with water.
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Firefighters should wear an acid resistant suit with a self contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Stay upwind. Ensure adequate ventilation, especially in confined areas. Do not get in eyes, on skin, or on clothing. DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST. Wash thoroughly after handling.

For emergency responders

Fatal if inhaled. Wear respiratory protection. Use personal protection recommended in Section 8. Approach area from upwind.

Environmental Precautions**Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Do not allow into any sewer, on the ground or into any body of water. Prevent product from entering drains. If fume cannot be contained in release area, notify personnel and neighbors in path of fume. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up**Small Spill**

Prevent further leakage or spillage if safe to do so. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Neutralize with chalk, limestone, slaked lime, powder cement, sodium carbonate or bicarbonate. Collect any residual solid material after neutralization for disposal as hazardous waste. Following product recovery, flush area with water.

Large Spill

Notify appropriate emergency services and activate the site emergency plan. Action restricted to trained personnel wearing suitable protection. Mark out the contaminated area and prohibit access to non-authorized persons. Approach area from upwind. Prevent further leakage or spillage if safe to do so. Position damaged containers with the leak on the top to prevent the liquid from flowing out of the container. If possible move containers from spill area. Prevent entry into waterways, sewers, basements or confined areas. Cover liquid spill with sand, earth or other non-combustible absorbent material. Fumes from the surface of the spillage may be suppressed using medium expansion vapor suppressing foam or by spreading chalk over the surface if safe to do so. Pump up the product into an auxiliary container which is acid-resistant and suitable labelled. If fume cannot be contained in release area, notify personnel and neighbors in path of fume. Contaminated absorbent material may pose the same hazard as the split product.

Methods for Containment

Packaging made of polyethylene and polypropylene are not suitable, they will become fragile and brittle in contact with liquid titanium tetrachloride.

Methods for cleaning up

Never soak up spilled or leaked acids and bases with sawdust, wood chips or similar materials.

Prevention of secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

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

Plan first aid action before beginning work with this product. Transfer and handle product only in closed systems. Do not allow contact with water. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Ensure adequate ventilation, especially in confined areas. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep/store only in original container. Keep under nitrogen blanket. Keep in a dry place. Do not allow into any sewer, on the ground or into any body of water. Use vapor collection at package opening or when there is potential for inhalation. Consider using smoke or hydrogen chloride detectors for leak warning. Store on retention (retention area of sufficient capacity, having impermeable soil). Avoid collecting products other than titanium tetrachloride in the retention pit. For fixed storage tanks, tank inerting with a very dry and neutral gas (eg nitrogen or argon) is recommended. Packaging made of polyethylene and polypropylene are not suitable, they will become fragile and brittle in contact with liquid titanium tetrachloride. Store far from incompatible materials and tanks, packages and containers containing flammable, or combustible materials. Do not store near incompatible materials (see Section 10). If properly stored, handled, permanently kept in highly tight and strongly dry conditions and protected against day-light, against contact with ambient air and moist products and against too warm ambient temperature, our material "titanium tetrachloride" has a shelf-life of twelve (12) months. We recommend not to exceed 12 months storage time in above described conditions even if it may not significantly affect product quality.

Packaging materials

Corrosive to metal. Packaging made of polyethylene and polypropylene are not suitable, they will become fragile and brittle in contact with liquid titanium tetrachloride.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure guidelines**

Ensure operatives are trained to minimize exposures.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Alberta OEL	British Columbia OEL	Ontario TWA	Quebec OEL
Titanium tetrachloride 7550-45-0	-	-	-			-	-
Hydrogen chloride 7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³	Ceiling: 2 ppm Ceiling: 3 mg/m ³	Ceiling: 2 ppm	CEV: 2 ppm	Ceiling: 5 ppm Ceiling: 7.5 mg/m ³

Legend

NIOSH Immediately Dangerous to Life or Health

Appropriate engineering controls**Engineering controls**

Collect the vapors at point of emission and direct them to a gas neutralization and washing station.
Ensure adequate ventilation, especially in confined areas
Atmosphere checks at regular intervals.
Eyewash stations
Showers
Clean and dry wiping cloths

Individual protection measures, such as personal protective equipment**Eye/face Protection**

Avoid contact with eyes. Tight sealing safety goggles. Face protection shield. Use eye protection according to EN 166, designed to protect against liquid splashes. Full facial mask combined with respiratory protection for gases, mists and acidic.

Skin and Body Protection

Wear protective Neoprene™ gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate. For normal work, acid-resistant safety

shoes with high tops and clothing that covers the whole body. Materials: neoprene, teflon, nitrile gum, viton, PVC, Tychem®BR, Tychem®LV, Tychem®TK, Reflector®, CPF®, Responder®, Responder Plus®, Durables®1.

Respiratory protection

Do not breathe gas/fumes/vapor/spray. Always wear a self-contained breathing apparatus or full-face airline respirator when using this chemical. Ensure adequate ventilation, especially in confined areas.

General hygiene considerations

Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Keep working clothes separately. Regular cleaning of equipment, work area and clothing is recommended. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid Fumes in contact with air.	Appearance	clear yellow
Odor	pungent	Color	Colorless yellow clear
Odor threshold	No information available		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		Not applicable
Melting point/freezing point	-24.1 °C	freezing point / freezing range
Boiling point / boiling range	136 °C	@ 101.3 kPa
Flash Point		Not applicable
Evaporation Rate		Not applicable
Flammability (solid, gas)		Not applicable
Flammability Limit in Air		Not applicable
Upper flammability limit:	-	
Lower flammability limit:	-	
Vapor pressure	0.36 kPa @ 0°C ; 1.24 kPa @ 20°C ; 5.62 kPa @ 50°C ; 36.57kPa @ 100°C	-
Vapor Density		No data available
Specific gravity	1.728	-
Water solubility	Reacts violently with water	-
Solubility in other solvents	soluble in: aliphatics (ex. hexane, heptane, octane) chlorinated aliphatics (ex. chlorohexane, chloroheptane, chlorooctane) Reacts immediately with: alcohols, tetrahydrofuran (and methylated tetrahydrofuran), aldehydes, organic acids to create exothermic and violent reactions	-
Partition coefficient		No data available
Autoignition Temperature		Not applicable
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity	0.82 mPa-s	@ 20 °C
Explosive properties	Not an explosive	
Oxidizing properties	None known	

Other Information

Softening point	No information available
Molecular weight	189.7 g/mol
VOC content (%)	None
Density	1.728 g/cm3 @20°C

Surface Area No information available
Bulk Density No information available

10. STABILITY AND REACTIVITY

Reactivity Reacts violently with water. Decomposes in contact with water. (Irrespective of the physical state of the water (vapor, liquid, solid) and aqueous solutions.).

Stability Stable under normal conditions.

Possibility of hazardous reactions alcohols, Aldehydes, Epoxies, fluorinated compounds, Incompatible Materials, organic acids, peroxides, potassium, potassium fluoride, reactive metals, Reacts with many compounds, Reacts violently with water, tetrahydrofuran, urea

Hazardous polymerization Hazardous polymerization does not occur

Conditions to Avoid Avoid wet and humid conditions. Keep from any possible contact with water.

Incompatible Materials Alcohols, Butyl-rubber, compounds, air or organic solvents containing traces of water/moisture, Epoxies, hydrofluoric acid, Hydrogen fluoride, peroxides, potassium, potassium fluoride, Polyethylene, polypropylene, reactive metals, tetrahydrofuran, methylated tetrahydrofuran, urea, Water, NOTE: This list is not exhaustive

Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors
Hydrogen chloride

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Fatal if inhaled. May cause pulmonary edema. (delayed).

Eye Contact Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes.

Skin contact Corrosive. Harmful in contact with skin. Causes severe burns.

Ingestion Ingestion causes burns of the upper digestive and respiratory tracts.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium tetrachloride 7550-45-0	No reliable data	= 3160 mg/kg (Rabbit)	= 460 mg/m ³ (Rat, Dust and Mists) 4 h

Information on toxicological effects

Symptoms Fatal if inhaled.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.

Serious eye damage/eye irritation Risk of serious damage to eyes.

Sensitization No sensitization responses were observed.

Germ Cell Mutagenicity None known.

Carcinogenicity Not carcinogenic.

Reproductive Toxicity	It is not possible to assess the developmental or reproductive effects in humans as no data is available and only limited and inconclusive data is available in animals.
Developmental Toxicity	No information available.
Teratogenicity	No information available.
STOT - single exposure	Target Organs: Respiratory System
STOT - repeated exposure	No information available
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Marine pollutant No

Ecotoxicity Not classified for acute. Not classified chronic.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Titanium tetrachloride 7550-45-0	EC50 Growth rate (Fresh water algae: Scenedesmus subspicatus)/72 hours: 8.5 mg/l	LC50 (Trout)/24h: 10 mg/l (Bluegill sunfish)/96h: pH 3.0-3.5(Shrimp)/48h: 100-330 ppm	LC50 (Leuciscus idus): 862 mg/l (1N ground)

Persistence and degradability Decomposes in contact with water. (Hydrochloric acid). Being highly reactive, material is not persistent in the environment.

Bioaccumulation Being highly reactive, material is not persistent in the environment.

Other adverse effects No information available

Ozone Not applicable

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes With vigorous agitation, slowly pour small quantities (< 0.005 L) of the non recyclable product into a large volume of water or into a solution of caustic soda, while thoroughly and completely collecting all the acid vapors formed and neutralizing them. CAUTION: This reaction is violent. Refer to manufacturer/supplier for information on recovery/recycling. Do not empty into drains; dispose of this material and its container in a safe way. This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Consult the manufacturer or the supplier of this product. Improper disposal or reuse of this container may be dangerous and illegal.

14. TRANSPORT INFORMATION

DOT

UN/ID no	UN1838
Proper Shipping Name	Titanium Tetrachloride
Hazard Class	6.1
Subsidiary class	8

Packing group	I
Reportable Quantity (RQ)	1000 lbs / 454 kg
Quantity Limitations	Forbidden for cargo and passenger air and rail
Special Provisions	[DOT-2]: This material is poisonous by inhalation (see section 171.8 of this subchapter) in Hazard Zone B (see section 173.116(a) or section 173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter
Marine pollutant	No
<u>TDG</u>	
UN/ID no	UN1838
Proper Shipping Name	Titanium Tetrachloride
Hazard Class	6.1
Subsidiary class	8
Packing group	I
Special Provisions	[TDG - 4]: The dangerous goods may be handled, offered for transport, or transported in a Class 105, 112, 114, or 120 fusion-welded tank car or a Class 106 or 110 ton container. [TDG - 15]: The ton container must not be equipped with pressure-relief devices, and the openings for pressure-relief devices must be plugged or blank flanged. [TDG - 17]: The tank must not be equipped with bottom outlets. [TDG - 19]: Each container except a tank car or a ton container must be insulated with an insulating material so that the overall thermal conductance at 15.6°C (60°F) is equal to or less than 1.53 kJ/h m ² °C (0.075 Btu/h ft. ² °F). Insulating materials must not promote corrosion of steel when wet. [TDG - 44]: The tank car must conform to the applicable requirements of clause 10.5.1. [TDG - 73]: This dangerous goods is toxic by inhalation in Hazard Zone B.
<u>MEX</u>	
UN/ID no	UN1838
Proper Shipping Name	Titanium Tetrachloride
Hazard Class	6.1
Subsidiary class	8
Special Provisions	[NOM - 354]: This substance is toxic by inhalation.
Packing group	I
<u>ICAO (air)</u>	
UN/ID no	UN1838
Proper Shipping Name	Titanium Tetrachloride
Hazard Class	6.1
Subsidiary hazard class	8
Packing group	I
Special Provisions	[ICAO - A2]: This article or substance may be transported on cargo aircraft, only with the prior approval of the appropriate authority of the State of origin and the State of the operator under the written conditions established by those authorities. Where States, other than the State of origin and the State of the operator, have lodged a variation advising that they require prior approval of shipments made under this Special Provision, approval must also be obtained from the States of transit, overflight and destination, as appropriate. In each case, a copy of the document(s) of approval, showing the quantity limitations and the packing requirements, must accompany the consignment.
<u>IATA</u>	
UN/ID no	UN1838
Proper Shipping Name	Titanium Tetrachloride
Hazard Class	6.1
Subsidiary hazard class	8
Packing group	I
ERG Code	137
Special Provisions	[ICAO - A2]: This article or substance may be transported on cargo aircraft, only with the prior approval of the appropriate authority of the State of origin and the State of the operator under the written conditions established by those authorities. Where States, other than the State of origin and the State of the operator, have lodged a variation advising that they require prior approval of shipments made under this Special Provision, approval must also be obtained from the States of transit, overflight and

destination, as appropriate.

In each case, a copy of the document(s) of approval, showing the quantity limitations and the packing requirements, must accompany the consignment.

IMDG

UN/ID no	UN1838
Proper Shipping Name	Titanium Tetrachloride
Hazard Class	6.1
Subsidiary hazard class	8
Packing group	I
EmS-No	F-A, S-B
Special Provisions	[IMDG - 354]: This substance is toxic by inhalation
Marine pollutant	No

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies
TCSI	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

TCSI - Taiwan Chemical Substance Inventory

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Titanium tetrachloride - 7550-45-0	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	Yes

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Titanium tetrachloride 7550-45-0	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Titanium tetrachloride 7550-45-0	X	X	X

16. OTHER INFORMATION

NFPA

Health Hazards 3

Flammability 0

Reactivity 2

HMIS

Health Hazards 3

Flammability 0

Physical Hazards 2

Prepared by

Product Stewardship Department

Issue date

08-May-2019

Revision date

08-May-2019

Revision note

No information available

Other Information

This product is intended for industrial use. This product is not intended for consumption, cosmetic, pharmaceutical or medical end use. INEOS will not knowingly sell product for use into these applications

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet