

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	UNIVERSAL Chemical Trading Titanium - Passivated Titanium (CP) Powder
Synonyms:	CP, Commercially pure titanium
Proper Shipping Name:	METAL POWDER, FLAMMABLE, N.O.S. (contains titanium)
Uses and uses advised against:	Titanium production use including but not limited to casting, welding, sieving, stamping, forging, extrusion, hot and cold rolling, drawing, cutting, pressing and powder processing.
Supplier:	UNIVERSAL Chemical Trading GmbH
Address:	Waldweg 4 Dollern 21739, Germany
Telephone Number:	+49-1521-859-2917
Facsimile:	+49-1521-859-2917
Email	info@uctr-gmbh.de
Website	https://uctr-gmbh.de

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule Not Applicable

Classification [1] Flammable Solid Category 1

Legend: 1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Label elements



Hazard pictogram(s) _____

SIGNAL WORD DANGER

Hazard statement(s)

H228 Flammable solid.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

Precautionary statement(s) Response

P370+P378 In case of fire: use dry agent for extinction.

Precautionary statement(s) Storage

Store material dry in tightly sealed in labelled containers, preferably under inert atmosphere.

Precautionary statement(s) Disposal

Dispose of contents/container in accordance with local, regional, national and international regulations.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	EC Number	Proportion (w/w)
Titanium	7440-32-6	231-142-36	>99%

4. FIRST AID MEASURES

Symptoms of Exposure Mild eye irritation. Mild skin irritation. Upper respiratory tract irritation.

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Inhalation	<p>If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor. If dust is inhaled, remove from contaminated area. Encourage patient to blow nose to ensure clear breathing passages. Ask patient to rinse mouth with water but to not drink water. Seek immediate medical attention.</p>
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none">• Flush skin and hair with running water (and soap if available).• Seek medical attention in event of irritation. <p>As sold/shipped is not a likely form of exposure. However during further processing if burns occur:</p> <ul style="list-style-type: none">• Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth.• DO NOT remove or cut away clothing over burnt areas.• DO NOT pull away clothing which has adhered to the skin as this can cause further injury.• DO NOT break blister or remove solidified material.• Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain.• For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth.• DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances.• Water may be given in small quantities if the person is conscious.• Alcohol is not to be given under any circumstances.• Reassure.• Treat for shock by keeping the person warm and in a lying position.• Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient.
Eye Contact	<p>If this product comes in contact with the eyes: Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. DO NOT attempt to remove particles attached to or embedded in eye. Lay victim down, on stretcher if available and pad BOTH eyes, make sure dressing does not press on the injured eye by placing thick pads under dressing, above and below the eye. Seek urgent medical assistance, or transport to hospital.</p>
Ingestion	<p>If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice.</p>
Medical conditions aggravated by exposure	<p>Asthma, chronic lung disease, and skin rashes.</p>
Indication of immediate medical attention and special treatment needed:	
Advice to Doctor	
Medical conditions aggravated by exposure	
Indication of immediate medical attention and special treatment needed:	
Advice to Doctor	
Medical conditions aggravated by exposure	

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media Unsuitable Extinguishing Media Hazchem or Emergency Action Code Specific hazards arising from the chemical

Dry sand, Class D extinguisher
Water
4Y
When burned, toxic smoke, fume and titanium oxides may be emitted. Titanium dust, fines, turnings and small pieces may ignite more easily under favorable conditions. Finely divided dusts may be explosive. Do not use water; treat as a Class "D" fire.

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Special protective equipment and precautions for fire-fighters

The application of water to burning titanium can cause an explosion due to the evolution of hydrogen.

DO NOT disturb burning dust. Explosion may result if dust is stirred into a cloud, by providing oxygen to a large surface of hot metal.

Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Personal Protection Clean-up Methods - Small Spillages

See section 8.

Wear protective clothing specified for normal operations (see Section 8).

Remove all ignition sources.

DO NOT touch or walk through spilled material.

Isolate spill area and provide ventilation.

Use combustible dusts rated (metals) vacuum with caution.

Avoid dust formation. Use only non-sparking tools and natural bristle brushes. Do not push powder for long distances across the floor. Keep in small piles away from each other. Place in non-sparking or anti-static containers.

Environmental Precautions

Do not allow to enter drains or to be released to the environment.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid generating and inhaling dust. Avoid contact with skin and eyes. Use with adequate ventilation. Use personal protection recommended in Section 8 of the SDS.

Conditions for safe storage, including any incompatibilities:

Store away from open flames or sparks. Store material tightly sealed in properly labeled containers, preferably under argon.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Follow standard monitoring procedures.

Occupational Exposure Limits

Material	Type	Value	Form
Titanium	None listed	None available	None available

Biological Limit Values

No biological limits assigned

Engineering controls

Adequate ventilation. When working with Passivated Titanium powder handle under inert atmosphere in a controlled, enclosed environment.

PPE Eye / Face Hand / Skin / Body Respiratory

The use of safety glasses with side shield protection as appropriate

Wear appropriate gloves to avoid any skin injury.

Wear suitable protective clothing to prevent skin contact.

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices.

Suitable respiratory protective device recommended: P1 (mechanically generated particulates), P2 (thermally generated particulates).

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Hygiene

Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Do not blow dust off clothing or skin with compressed air.

Measures

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Grey metal powder
Physical state	Divided Solid / powder
Colour	Grey
Odour	Odourless
Specific Gravity	Not determined
pH	Not applicable
Bulk density	Not applicable
Boiling point	Not applicable
Melting point	1537.778°C
Relative Vapour Density (air=1)	Not applicable
Vapour Pressure (20 °C)	Not applicable
Flash Point (°C)	Not applicable
Flammability limits in air, upper / lower, % by volume Autoignition Temperature (°C)	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	Stable under normal conditions of use, storage, and transportation.
Possibility of hazardous reactions	See section 7 Passivated Titanium powder is water-reactive at high temperatures releasing flammable hydrogen gas. Flammable in the form of dust when exposed to ignition sources.
Conditions to avoid	See section 7. Heat, sparks, flame. Dusting conditions.
Incompatible materials	See section 7.
Hazardous decomposition products	See section 5. Titanium oxide fumes, hydrogen.

11. TOXICOLOGICAL INFORMATION

11(a-e) Information on Toxicological Effects: The toxicological data listed below are presented regardless to classification criteria.

a. No LC50 or LD50 has been established for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium. The following data has been determined for the component:

- Titanium Dioxide: LD50 > 10,000 mg/kg (Oral/Rat); LC50 > 6.82 mg/l (Inhalation/Rat)

b. No Skin (Dermal) Irritation data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its component.

c. No Eye Irritation data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its components.

Section 11 - Toxicological Information (continued)

d. No Skin (Dermal) Sensitization data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its component.

e. No Respiratory Sensitization data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its component.

f. No Germ Cell Mutagenicity data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its component.

g. Carcinogenicity: IARC, NTP, and OSHA do not list UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as carcinogens. The following Carcinogenicity information was found for the component:

- Welding Fumes - IARC Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.
- Titanium Dioxide - According to the experimental studies and reviewed IUCLID toxicological data, Rats (but not mice) exposed to ultrafine TiO₂ particles at 10 mg/m³ developed lung tumors; probably results from inhibited particle clearance from lung. Titanium and titanium compounds, for the most part, have been considered virtually inert and not highly toxic to man. Titanium dioxide has recently been considered a potential occupational carcinogen based on inhalation studies on rats. Results indicated increases in bronchioloalveolar adenomas and

squamous cel carcinomas. As a result, NIOSH recommends exposure to titanium dioxide be reduced to the lowest feasible concentration (LFC).

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h. No Toxic Reproduction data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its component.
i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a mixture or its components.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for UNIVERSAL CHEMICAL TRADING GMBH TITANIUM CP Grade Titanium as a whole.

The following STOT following Repeated Exposure data was found for the component:

- Titanium Dioxide: Inflammatory lesions in rat lungs produced by 3-month exposures to either 22.3 mg/m³ of ultrafine TiO₂; lesions "regressed" during a 1-year period following cessation of exposure.

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community.

The scientific resources includes:

The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide

Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s) and potential resultant components from further processing:

Acute Effects:

- Inhalation: Excessive exposure to high concentrations of metal dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract.
- Eye: Excessive exposure to high concentrations of metal dust may cause irritation to the eyes.
- Skin: Skin contact with metal dusts may cause irritation. Skin contact with metallic fumes and dusts may cause physical abrasion.
- Ingestion: Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of metal dust may cause nausea or vomiting.
-

Acute Effects by component:

- Titanium and titanium dioxides: Not Reported / Not Classified
- Delayed (chronic) Effects by component:
- Titanium and titanium dioxides: Titanium Oxide accumulates in the lungs – and over time mostly in alveoli and macrophages. Exposure by inhalation route should be reduced to lowest levels to reduce accumulation in lungs. This accumulation is apparently responsible for carcinogenesis in rats only (no such response in mouse or hamster).

12. ECOLOGICAL INFORMATION

Ecotoxicity	None known
Persistence and degradability	None known
Bio-accumulative potential	None known
Mobility in soil	Not considered mobile.
Other adverse effects	None known

13. DISPOSAL CONSIDERATIONS

Disposal methods	Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

Labels Required



Marine Pollutant NO
HAZCHEM 4Y

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Land transport (ADG)

UN number 3089

UN proper shipping name METAL POWDER, FLAMMABLE, N.O.S. (contains titanium)

Transport hazard class(es)

Class 4.1

Subrisk Not Applicable

Packing group II

Environmental hazard Not Applicable

Special precautions for user See Section 7 & 8

Special provisions Not Applicable

Limited quantity 1 kg

Air transport (ICAO-IATA / DGR)

UN number 3089

UN proper shipping name METAL POWDER, FLAMMABLE, N.O.S. (contains titanium)

Transport hazard class(es)

ICAO/IATA Class 4.1

ICAO / IATA Subrisk Not Applicable

ERG Code 3L

Packing group II

Environmental hazard Not Applicable

Special precautions

Special provisions A3

Cargo Only Packing Instructions 448

Cargo Only Maximum Qty / Pack 50 kg

Passenger and Cargo Packing Instructions 445

Passenger and Cargo Maximum Qty / Pack 15 kg

Passenger and Cargo Limited Quantity Packing Instructions

Y441 Passenger and Cargo Limited Maximum Qty / Pack 5 kg

Sea transport (IMDG-Code / GGVSee)

UN number 3089

UN proper shipping name METAL POWDER, FLAMMABLE, N.O.S. (contains titanium)

Transport hazard class(es)

IMDG Class 4.1

IMDG Subrisk Not Applicable

Packing group II

Environmental hazard Not Applicable

Special precautions for user See Section 7 & 8

EMS Number F-G , S-G

Special provisions Not Applicable

Limited Quantities 1 kg

Transport in bulk according to Annex II of MARPOL and the IBC

code Not Applicable

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

15. REGULATORY INFORMATION

Poisons Schedule (SUSMP)	Not Scheduled
German Inventory of Chemical Substances (AICS): Registration Status	Titanium (7440-32-6)

Inventory Status

Country or Region	Inventory Name	On Inventory (yes/no)
German	Germann Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
China	Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes

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Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

A "no" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION

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This safety data sheet has been prepared by UNIVERSAL Chemical Trading GmbH Chemicals Pty Ltd

This SDS, to the best of our knowledge, represents the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Users must, prior to usage, assess and control the risks arising from their specific use, handling and storage of the material.