

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

Product Name: Composite Titanium for Stage Effect

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Section 2 – Composition/Information on Ingredient

Chemical Name	CAS NO.	Specific gravity	Dimension	Molecular Formula
Zirconium	7440-67-7	20%	200-250um	Zr
Titanium	7440-32-6	80%		Ti

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Section 3 - Hazards Identification

Fatalness grade: In accordance with the Catalog of Hazardous Chemicals (2015) of China, the material is not a dangerous goods.

Health Hazards (Acute & Chronic):

There is no report of composite Ti for stage effect in industry

Environment hazard: None.

Physics and chemistry danger: None.

Special harm: None. **Main symptoms:** None.

Classification of substance: None.

Section 4 - First Aid Measures

Inhalation: Supply fresh air or give oxygen if breathing is difficult. Consult doctor in case of complaints.

Skin Contact: Immediately wash skin with water and soap and rinse thoroughly.

Eye Contact: Rinse opened eyes for several minutes under running water, lifting upper and lower eyelids, for 20 minutes. Seek medical help.

Swallowing: Drink milk or egg white. Induce vomiting, if person is conscious. Seek medical help.

Section 5 - Firefighting Measures

Hazardous Characteristics:

Material can burn when in contact with open fire and high heat, and it can also burn in carbon dioxide and nitrogen gas.

Hazardous Combustion Products:

Carbon monoxide(CO), Carbon dioxide(CO2).

Firefighting methods:

Extinguishing agents or use dry sand.

Release measures:

Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute(HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.



Section 6 - Accidental Release Measures

Steps to be taken in case Material is Released or Spilled:

Leave quickly leakage pollution area personnel to safety, and isolation, strictly limiting access. Cut off the fire. Suggest emergency personnel wearing self-sustaining positive pressure type respirator, wear anti-static work clothes. As cut leakage source. Prevent ditch into sewer pipes, such restrictive space. Small spills with sand, vermiculite, or other inert materials absorption. Massive leak: to construct the beach or dig a pit asylum.

Covered with foam, reduce steam disasters. Use explosion-proof pump metastasize to the tank or special collector inside, recycling or shipped to the waste disposal sites disposal.

Waste disposal method:

It is recommended to discharge the deodorizer to the end, handing in the abandoned deodorizer to related department unified, dispose of the deodorizer in accordance with approved local, state, and federal requirements. Consult state environment protection agency and/or federal EPA.

Section 7 - Handling and Storage

Precautions for safe handling

Operator must undergo special training, strictly comply with the operating procedures. Recommend the operator to wear self-absorption filter dust masks, chemical safety glasses and chemical gloves.

Conditions for safe storage:

Stored in a cool, well-ventilated area. Store away from fire and heat source. Should be stored separately from acids and avoid mixed storage. Ventilation systems must provide sufficient ventilation to maintain concentration at or below TLV. The storage area should be equipped with appropriate material to contain leakage.

Section 8 - Exposure Controls, Personal Protection

MAC(mg/m₃): OSHA PEL: 5mg/m₃ AS ZIRCONIUM

ACGIH TLV: 5mg/m₃ AS ZIRCONIUM

Monitoring method: Two xylenol orange colorimetry

Engineering control: Prevent dust hazards, no other special protection required.

Respiratory Protection: NIOSH approved dust/mist respirator. **Ventilation:** Not necessary under conditions of normal use.

Protective Gloves: Wear rubber gloves
Other Protective Clothing or Equipment:

Wearing protective clothing. Wear chemical safety glasses. Maintain good health habits.

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Section 9 - Physical and Chemical Properties

Appearance: Solid

Color: Gray PH value: 7.0

Melting point (°C): 1668°C (Titanium)

Boiling point (°C): 3277°C (Titanium)

Relative density (Water=1g/cm³): 4.8-5.7

Average particle diameter(µm): 2.5

Light resistance(grade): 8

Saturated vapor pressure(kPa): N/A

Critical temperature(°C): N/A Critical pressure(mPa): N/A Ignition temperature(°C): N/A

Flash point (°C): N/A

Upper explosion limit(V/V): N/A Lower explosion limit(V/V): N/A Decomposition temperature(°C): N/A

Solubility: Insoluble in water

Uses: In the manufacture of nuclear industry and corrosion resistant alloy, used as

metallurgical oxygen, and as a chemical reagent.

Section 10 - Stability and Reactivity

Stability: Stable

Conditions to be avoided: Open flame, strong acids, strong oxidizers. **Incompatibility:** Air, oxidizing agents, halogens, halocarbons, mineral acids.

Polymerization hazard: Will not occur

Dangerous reactions: No known dangerous reactions.

Decomposition products: No decomposition if used according to specifications.

Section 11 - Toxicological Information

Acute toxicity: LD50: N/A, LC50: N/A

Acute poisoning: N/A Chronic poisoning: N/A

Sub-acute and chronic toxicity: N/A

Mutagenicity: N/A
Teratogenicity: N/A

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Carcinogenicity: N/A Irritation: Mild irritation

Through inhalation: May cause irritation and damage of mucous membranes and

respiratory system.

Through ingestion: May be harmful if swallowed.

Section 12 - Ecological Information

Ecological Information:

General notes: Do not allow product to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable. VPvB: Not applicable.

Other adverse effects: No further relevant information available.

Section 13 - Disposal Considerations

Property of waste: N/A

Waste disposal method: Dispose of in accordance with local, state and federal regulations.

Section 14 - Transport Information

UN Number: ADR, IMDG, IATA

UN2546.

UN proper shipping name: ADR, IMDG, IATA

Composite Titanium powder, dry.

Transport hazard class(es):ADR, IMDG, IATA

4.2.

Packing group: ADR, IMDG, IATA

Packing group II.

Environmental hazards: None.

Special precautions for user: None.



Section 15 - Regulatory Information

Dangerous Chemicals safety management regulations (344 decree of the State Council, March 15, 2002), workplace safety use chemical regulations (423 decree of the labor department, 1996) and other laws and regulations provide the safe use, production, storage, transportation, loading and unloading of hazardous chemicals. Classification and Marking of Dangerous Chemicals (13690-92 GB) provide composite Ti for stage effect as class 5.14 (In case of fire and high temperature material can burn).

Section 16 - Additional Information

Abbreviations:

CAS: Chemical Abstract Service(Division of the American Chemical Society

HEPA: High Efficiency Particulate Air EPA: Environmental Protection Agency

TLV: Threshold Limit Values

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limits

ACGIH: American Conference of Governmental Industrial Hygienists NIOSH: The National Institute for Occupational Safety and Health

PBT: Persistent, bioaccumulation and toxic vPvB: Very persistent and very bioaccumulation ADR: Agreement on Dangerous Goods by Road IMDG: International Maritime Dangerous Goods IATA: International Air Transport Association

Reference Information:

MSDS creation date: Mar. 1st. 2018

Creation Department: Department of Technology **Data audit department:** Chief Engineer Office

Further Description: The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.