MSDS (Material Safety Data Sheet)
Titanium Dioxide Rutile
(R607)

Section 1: Product and Company Identification

Synonyms: Titanium Dioxide Rutile
CAS No.: 13463-67-7
Molecular Weight: 79.90
Chemical Formula: TiO_2
HS Number :320611.1000
Revise date: 2019-06-20

Producers information
Company Name: Jiangsu Jinhai Hezhong Titanium Co.,Ltd.
E-mail : postmaster@jinhaititanium.com
Home page: www.jinhaititanium.com

Section 2: Composition/Information on Ingredients

Component	TiO_2	ZrO_2	Al_2O_3	SiO_2
CAS number	13463-67-7	1314-23-4	1344-28-1	7631-86-9
HS Number	32061110			
Percentage	91-94.0%	0-2%	0-6%	0-0.05%
Hazardous	No	No	No	No

Section 3: Hazards Identification

Emergency Overview
Color: white
Physical Form: powder
Odor: odorless
Chemically stability: stable
Product is non-combustible, Does not present a fire hazard or other immediate concern for emergency responders, except of a slippery condition if product gets wet.

Warning-Potential Health Effects:
Eye contact: It (in powder) may cause mechanical eye irritation.
Skin contact: Powder may irritate skin if not wash off from skin promptly.
Skin absorption: Not expected to be absorbed through intact skin.
Ingestion: No adverse health effects anticipated by this route.
Inhalation:

a. Acute effects: Exposure to dust may cause temporary drying effect and/or mild irritation of nose, throat and lungs, and may aggravate pre-existing respiratory conditions.
b. Chronic effects/Carcinogenicity: Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans(group 2B) through inhalation. This classification is based on upon animal inhalation studies. Epidemiology studies do not suggest an increase risk of cancer in humans from occupational exposure to titanium dioxide.

Section 4: First Aid Measures

Inhalation: Remove to fresh air.
Ingestion: If swallowed, give several glasses of water to drink. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: Wipe off excess material from skin then flush skin with plenty of water. Remove contaminated clothing and shoes.
Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.
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NOTE TO PHYSICIAN: For inhalation, consider oxygen.

Section 5: Fire Fighting Measures
Flash point: N.A. Method: N.A. LEL: N.A UEL:N.A
Unusual fire hazards: None
Fire: Not considered to be a fire hazard. Will not burn
Explosion: Sealed containers may rupture when heated.
Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.. Sealed containers of this material may rupture at moderate temperatures (release of water vapor)..

Section 6: Accidental Release Measures
Soil Release: Dig holding area such as lagoon, pond or pit for containment. Cover with plastic sheet or tarp to minimize spreading and protect from contact with water.
Water Release: just wash out
Occupational Release: Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

Section 7: Handling and Storage
Handing:
a. Avoid contact with eyes.
b. Do not breathe dust or mist.
c. Avoid high concentrations of dust or mist air through the use of ventilation or other suitable controls.
Storage
Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage; observe all warnings and precautions listed for the product.

Section 8: Exposure Controls/Personal Protection
Airborne Exposure Limits: None established.
Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.
Personal Respirators (NIOSH Approved): For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING:

Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls.

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.
Clothing: Wear appropriate clothing.
Gloves: impervious gloves or specified by manufacturer

Section 9: Physical and Chemical Properties
Appearance: white powder
Odor: Odorless.
Color: white
Solubility: InSoluble in water.
Molecular Weight: 79.90
Molecular Formula: TiO2
Specific Gravity: 3.9-4.2
pH: neutral
% Volatiles by volume @ 21C (70F): 0
Vapor Density (Air=1): No information found.
Vapor Pressure (mm Hg): No information found.
Evaporation Rate (BuAc=1): No information founded
Coefficient of Water/Oil Distribution: Not available

Section 10: Stability and Reactivity
Stability: Stable under ordinary conditions of use and storage.
Reactivity:. Stable at normal temperatures and pressure
Conditions to Avoid: Stable at normal temperatures and pressure
Polymerization: Will not polymerize.
Hazardous Decomposition Products: not occur
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information
Irritation: Inhalation of dust or mist can cause irritation of eyes, nose, throat and lungs.
Eye contact: Powder/particle can cause mechanical irritation.
Skin contact: Can cause irritation if not wash off from skin promptly.
Skin absorption: Not expected to be absorbed through intact skin.
Ingestion: Not expected to produce adverse effects.

Effects of Chronic exposure

Titanium Dioxide: In lifetime inhalation studies of rats, airborne, respirable –size titanium dioxide particles have been shown to cause an increase in lungs tumors at concentrations associated with substantial particle lungs burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related the particle size and the amount of exposed surface area that comes into contact with the lung. However, test with other laboratory such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that causes lung cancer. Epidemiology studies do not suggest an increase risk of cancer in humans from occupational exposure to titanium dioxide.

Titanium dioxide has been characterized by IARC as possible carcinogenic to humans (Group 2B) through inhalation(Not ingestion) It has not been characterized as potential carcinogen by either NTP or OSHA.
Alumina oxide, Zirconium oxide, Silicon oxide: Inhalation of dust particles composed of these material may cause drying of mucous membranes and irritation of nose, throat and lungs with nosebleeds,

cough, difficulty breath or shortness of breath. Based on animal studies, long time inhalation exposure to high doses of ultrafine particles could lead pulmonary and inflammation and could be a factor in subsequent development of chronic lung disease. Silicon oxide does not induce the lung effects associated with crystalline silica.

Medical conditions Aggravated: Respiratory disorder

Toxicity: Titanium dioxide

Oral	LD 50	>10,000 mg/kg (rate)
Dermal	LD 50	>10,000 mg/kg (rabbit)
Inhalation	LD (4 hr)	>6.8 mg/l (rat)

Section 12: ECOLOGICAL INFORMATION
No data available.

Section 13: Disposal Considerations
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14: Transport Information
No regulated in Hazard class
IMO/IMDG regulation information: not under IMO/IMDG
IMO/IMDG

Section 15: REGULATORY INFORMATION
United States Regulatory Information

EU	EINECS (European Inventory of Existing Commercial Chemical substances)	236-675-5
U.S.A	TSCA (TSCA Inventory)	Registered
Australia	AICS (Australia Inventory of Chemical Substances)	Registered
Canada	DSL (Domestic Substance List)	Registered
Japan	ENCS (Existing and New Chemical Substances Inventory)	1-558
Korea	KECI (Korea Existing Chemical Inventory)	Registered
Philippine	PICCS (Inventory of Chemicals and Chemical Substances)	Registered
China	IECSE (Inventory of Existing Chemical Substances in China)	Registered

Section 16: OTHER INFORMATION
Department:.
Tel (Fax):
Revision: 2019-06-20
Other Information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty, express or

implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.