

## MSDS (Material Safety Data Sheet)

### Titanium Dioxide Rutile

### (THR-216, THR-218,THR-6666)

### 安全性能数据表-钛白粉

**Section 1 : Product and Company Identification**

第一部分：产品及公司

Synonyms: Titanium Dioxide Rutile, THR-216, THR-218,THR-6666

产品名称：钛白粉

CAS No.: 13463-67-7

CAS 号：13463-67-7

Molecular Weight: 79.90

分子量：79.90

Chemical Formula: TiO<sub>2</sub>分子式：TiO<sub>2</sub>

HS Number :320611.1000

HS 编码：3206111000

Revise date 修改时间: 2012-12-31

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**Section 2 : Composition/Information on Ingredients**

第二部分：成分

Component 主要成分	TiO <sub>2</sub> 二氧化钛	ZrO <sub>2</sub> 氧化锆	Al <sub>2</sub> O <sub>3</sub> 氧化铝	SiO <sub>2</sub> 二氧化硅
CAS number	13463-67-7	1314-23-4	1344-28-1	14808-60-7
HS Number	32061110			
Percentage 含量	92.0%	0-4%	0-8%	0-6%
Hazardous 危险性	No	No	No	No

**Section 3 : Hazards Identification**

第三部分：危险分类

Emergency Overview 急救

Color : white 颜色：白色

Physical Form: powder 外观：粉末

Odor: odorless 气味：无

Chemically stability: stable 化学稳定性：稳定

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. 非易燃物，未列入火险因，湿粉易滑。

Warning-Potential Health Effects: 健康提示

Email: [sales@tisea.cn](mailto:sales@tisea.cn)

Eye contact: It (in powder) may cause mechanical eye irritation. 接触眼睛可能导致不适。

Skin contact: Powder may irritate skin if not wash off from skin promptly. 不及时洗净可导致皮肤刺激。

Skin absorption: Not expected to be absorbed through intact skin. 皮肤接触不会吸收钛白粉。

Ingestion: No adverse health effects anticipated by this route. 吞咽不会造成不利影响。

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. 暴露在粉尘下, 可能造成鼻、喉及肺部的不适, 恶化呼吸环境。
- 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. 慢性影响/致癌性: IARC 已经将钛白粉列入通过吸入对 2B 人群可能致癌的物质。该分类已经通过动物实验。流行病学研究表明暴露在钛白粉中不会增加癌症风险。

#### Section 4 : First Aid Measures

第四部分: 急救措施

Inhalation: Remove to fresh air.

吸入: 移至空气新鲜处

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.

吞食: 如不慎吞食二氧化钛, 应立即饮用数杯清水。可能会有呕吐症状, 但不要刻意引起呕吐。切忌给昏迷人员喂食任何东西。谨遵医嘱。

Skin Contact: Wipe off excess material from skin then flush skin with plenty of water. Remove contaminated clothing and shoes.

皮肤接触: 用足量清水清洗即可。换洗受沾染的衣服和鞋子。

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.

眼睛接触: 立即用清水冲洗至少 15 分钟, 清洗时要注意眨几下眼。

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

医师注意事项: 治疗吸入时, 可考虑供氧

#### Section 5 : Fire Fighting Measures

第五部分: 火警措施

Flash point: N.A. Method: N.A. LEL: N.A UEL: N.A

Unusual fire hazards: None

非特殊火警物

Fire: Not considered to be a fire hazard. Will not burn

火警: 非易燃性物品, 不会燃烧

Explosion: Sealed containers may rupture when heated.

爆炸性: 加热时密封包装可能会破裂

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.

灭火剂: 可使用任何灭火品。直接喷水可冷却火中的容器。

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)..

特别提示：一旦发生火灾，应穿着全套的保护装备和 NIOSH 规定的全脸式面罩和呼吸器。密封容器可能会在一定温度下破裂，释放出水蒸汽

## Section 6 : Accidental Release Measures

第六部分：意外泄露

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.

土壤：建一个填埋地，比如沟，塘或深坑。填埋后用塑料布或防水布覆盖，防止四处流溢。

Water Release: just wash out

水：冲洗

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.

室内泄露：室内泄露时，立即通风。让不必要的人员离开。穿合适的保护装备，回收并放置到合适的容器内，以备处理。避免产生灰尘。

## Section 7 : Handling and Storage

第 7 部分：处理与存储

**Handling: 处理**

- Avoid contact with eyes. 避免眼睛接触
- Do not breathe dust or mist. 不在粉尘、雾中呼吸
- Avoid high concentrations of dust or mist air through the use of ventilation or other suitable controls. 通过通风或其它设施避免粉尘浓度过高。

**Storage 储存**

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.

保存在紧密封口的容器内，存放于凉爽通风干燥的地方。防止包装物损坏，遵守产品存放的要求与规则

## Section 8 : Exposure Controls/Personal Protection

第 8 部分：暴露控制和个人防护

Airborne Exposure Limits: None established.

空气暴露限制：无

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.

通风系统：采用单独或整体式的通风系统，降低工人受到的影响。建议使用单独的通风系统，因为它能控制污染源的扩散。具体参照 ACGIH，工业通风操作规范手册。

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.

个人呼吸器：灰尘不影响视力的情况下，使用半脸呼吸器。当无法确定暴露的级别是，使用全脸式自动呼吸器。警告：氧气缺乏时，空气净化面具不能提供足够的保护。

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls.

皮肤保护：穿戴密封的保护服，包括鞋子，手套，试验外套，围裙或其它。

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

眼睛防护：戴上护目镜。工作区域有可清洗眼睛的水源和速湿设备

Clothing: Wear appropriate clothing.

衣服：合适的衣服

Gloves: impervious gloves or specified by manufacturer

手套：用密封手套或厂家规定的

## Section 9 : Physical and Chemical Properties

第 9 部分：物理和化学性能

Appearance: white powder

外观：白色粉末

Odor: Odorless.

气味：无

Color: white

颜色：白色

Solubility: Insoluble in water.

溶解性：不溶于水

Molecular Weight: 79.90

分子量：79.90

Molecular Formula: TiO<sub>2</sub>

分子式：TiO<sub>2</sub>

Specific Gravity: 3.9-4.2

密度：3.9-4.2

pH: neutral

PH：中性

% Volatiles by volume @ 21C (70F): 0

21C 时挥发性：0

Vapor Density (Air=1): No information found.

气化密度：无信息

Vapor Pressure (mm Hg): No information found.

气化压力：无信息

Evaporation Rate (BuAc=1): No information founded

沸点：无信息

Coefficient of Water/Oil Distribution: Not available

水/油性系数：不适用

## Section 10 : Stability and Reactivity

第 10 部分：稳定性和反应性

Stability: Stable under ordinary conditions of use and storage.

稳定性：正常情况下处理及储存是稳定的

Reactivity: Stable at normal temperatures and pressure

反应性：常温常压下稳定

Conditions to Avoid: Stable at normal temperatures and pressure

避免情况：常温常压下稳定

Polymerization: Will not polymerize.

聚合反应：不会发生

Hazardous Decomposition Products: not occur

危险性分解产物：不会发生

Hazardous Polymerization: Will not occur.

危险性聚合反应：不会发生

## Section 11 : Toxicological Information

### 第 11 部分：毒性情况

Irritation: Inhalation of dust or mist can cause irritation of eyes, nose, throat and lungs.

刺激：吸入可导致眼、鼻、喉及肺部的不适。

Eye contact: Powder/particle can cause mechanical irritation. 粉、粒可导致眼睛不适。

Skin contact: Can cause irritation if not wash off from skin promptly. 不及时洗净会刺激皮肤。

Skin absorption: Not expected to be absorbed through intact skin. 皮肤接触不会吸收。

Ingestion: Not expected to produce adverse effects. 吞咽不会造成影响。

### 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.

研究表明：吸入的钛白粉微粒会增加肺的负担，导致肺部肿块和炎症。可吸入肺中的微粒会对人体健康产生不利的影响。其它实验室的研究表明，吸入的微粒导致白鼠/仓鼠肺过度使用和发炎，而这些会导致肺癌。医学研究表明，职业性的接触钛白粉中不会增加癌症的几率。IARC 已经将钛白粉列入 2B 人群的可能致癌因（吸入）。NTP 和 OHSA 未将钛白粉列入此项目中。

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. 吸入氧化铝，氧化锆，氧化硅等微粒可能导致粘膜干燥，鼻、眼、喉及肺部不适，喷嚏，咳嗽，呼吸困难或者窒息等症状。动物实验表明，长时间在高剂量环境中吸入粉尘会导致肺部肿块和发炎，这可能是发展为肺部疾病的诱因之一。结晶形态的氧化硅不会对人体肺部产生影响。

Medical conditions Aggravated: Respiratory disorder 恶化症状：呼吸紊乱

Email: [sales@tisea.cn](mailto:sales@tisea.cn)

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**

第 13 部分：生物影响

No data available.

**Section 13 : Disposal Considerations**

第 13 部分：处理建议

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.

产品无论不能回收或回收，都要用合适的设备来处理。容器的处理和废弃的部分符合官方的要求。

**Section 14 : Transport Information**

第 14 部分：运输限制

No regulated in Hazard class

不属于危险类别

IMO/IMDG regulation information: not under IMO/IMDG

IMO/IMDG 规定信息：未列入 IMO/IMDG 规定

**SECTION 15 REGULATORY INFORMATION**

第 15 部分：管理信息

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

DSL: Yes

NDSL: No

**SECTION 16 OTHER INFORMATION**

第 16 部分：其它信息

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Revision: 2012-12-31

Other Information

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