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Material Safety Data Sheet

1. *Identification of the Substance / Preparation and of the Company*

Trade Name: **Titanium Dioxide**
Chemical Name: Titanium (IV) Oxide;
Chemical characterization:
Molecular Weight: 79. 8788
CAS No. : 13463- 67- 7
EINECS No. 236- 675- 5
Chemical Formula: TiO_2

2. *Composition / Information on Ingredients*

CAS #	Chemical Name	%	EINECS #
13463-67-7	Titanium (IV) Oxide	98.5	236- 675- 5

3. *Hazards Identification*

ENERGENCY OVERVIEW
Appearance: White.
CAUTION ! May cause irritation to skin, eyes, and respiratory tract. May affect lungs.
Target Organs: No data found.
Potential Health Effects
Eye: May cause mild irritation, possible reddening.
Skin : May cause mild irritation and redness.
Ingestion: Not expected to be a health hazard via ingestion.
Inhalation: May causes mild irritation to the respiratory tract.
Chronic: Long-term exposure to TiO2 dust may result in mild fibrosis (scarring of the lungs)
Aggravation of Pre-existing Conditions:
Persons with pre-existing lung disease may be more susceptible to the effects Of this substance.

4. *First- aid Measures*

Eyes : Immediately flush eyes with plenty of water for at least 15 minutes,

occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Immediately flush skin with plenty of soap and water for at least 15 minutes Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical aid if irritation develops.

Ingestion: Not expected to require first aid measures. If large amounts were swallowed, give water to drink and get medical advice. Do NOT induce vomiting.

Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty Do NOT use mouth-to-mouth respiration.

5. *Fire- Fighting Measures*

Fire: Not considered to be a fire hazard.

Explosion: Not considered to be an explosion hazard.

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/ NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and / or toxic fumes.

Extinguishing Media:

Use agent most appropriate to extinguishing surrounding fire.

6. *Accidental Release Measures*

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills / Leaks:

Clean up spills immediately, observing precautions in the Protective Equipment section. Vacuum or sweep up and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

7. *Handling & Storage*

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse Use with adequate ventilation Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed.. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage:

Store in a cool, dry, will- ventilated area away form incompatible substances.

8. *Exposure Controls / Personal Protection*

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA- Final PELs
Titanium (IV) Oxide	10 mg / m3	NIOSH Potential Occupational Carcinogen-see Appendix A Potential NIOSH Carcinogen.	Total dust: 15 mg / m3 TWA

OSHA Vacated PELs:

Titanium (IV) Oxide: total dust: 10 mg / m3 TWA.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

9. *Physical & Chemical Properties*

Physical State:	Solid
Appearance:	White
Odor :	None reported.
pH	App. 6 - 7.
Vapor Pressure:	Negligible.
Vapor Density;	Not applicable.
Evaporation Rate :	Negligible.
Viscosity:	Not available.
Boiling Point:	4532 – 5432 deg F.
Freezing/Melting Point:	3326 – 3362 deg F
Autoignition Temperature:	Not reported.
Flash Point:	Not applicable.
NFPA Rating:	(est.) Health: 1; Flammability: 0; Reactivity: 0.
Explosion Limits,	Not reported.
Decomposition Temperature:	Not available.
Solubility:	Insoluble in water.
Specific Gravity/Density:	3.84 – 4.26 (water=1)
Molecular Formula:	TiO_2
Molecular Weight:	79. 8788

10. *Stability & Reactivity*

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials:

A violent or incandescent reaction with metals (aluminum,calcium,magnesium,potassium, sodium,zinc and lithium) may occur at high temperatures. Substance is incompatible with strong acids.

Hazardous Decomposition Products: Titanium Oxides.

Hazardous Polymerization: Has not been reported.

11. *Toxicological Information*

RTECS #:: CAS # 13463- 67- 7: XR2275000.

LD50 / LC50 : Not available.

Carcinogenicity:

Titanium (IV) Oxide-

ACGIH: A4 – Not Classifiable as a Human Carcinogen.

NIOSH: Occupational carcinogen.

IARC: Group 3 carcinogen.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects : No information available.

Neurotoxicity : No information available.

Mutagenicity: Please refer to ETECS# XR2275000 for specific information.

Other Studies: See actual entry in RTECS for complete information..

12. *Ecological Information*

No information available.

13. *Disposal Considerations*

Chemical waste generators must determine whether a discarded chemical is classificant as a hazardous watste.

US EPA guidelines for the classification determination are listed in 40 CFR Part

Additionally,waste generator must consult state and local hazardous waste regulations ensure complete and accurate classification.

RCRA P- Series: None listed.

RCRA U- Series: None listed.

14. *Transport Information*

US DOT: No information available.

Canadian TDG No information available.

15. *Regulatory Information*

US FEDERAL

TSCA

CAS # 13463- 67- 7 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b:

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

Section 313

None chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Titanium (IV) Oxide can be found on the following state right to know lists:

NJ,PA, MN, MA.

California No Significant Risk Level:

None of the chemicals in this product are listed.

European / International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

WGK (Water Danger / Protection)

CAS # 13463- 67- 7: 0

United Kingdom Occupational Exposure Limits

CAS # 13463- 67- 7: OES- United Kingdom, TWA total inhalable dust: 10 mg / m3 TWA; respirable dust: 4 mg / m3 TWA.

Canada

CAS # 13463- 67- 7 is listed on Canada's DSL/NDSL List.

This product does not have a WHMIS classification.

CAS # 13463- 67- 7 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS # 13463- 67- 7: OEL- ARAB Republic of Egypt: TWA 15 mg / m3

OEL- Australia : TWA 10 mg / m3

OEL- Belgium: TWA 10 mg / m3

OEL- Denmark: TWA 6 mg / m3

OEL- France: TWA 10 mg / m3

OEL- Germany: TWA 6 mg / m3

OEL- The Philippines: TWA 15 mg / m3

OEL- Switzerland: TWA 6 mg / m3

OEL- Turkey: TWA 15 mg / m3

OEL- United Kingdom: TWA 10 mg / m3 (total dust) Jan 9

OEL- United Kingdom: TWA 5 mg / m3 (resp. dust)

OEL in Bulgaria, Colombia, Jordan, Korea check ACGIH TLV

OEL in New Zealand, Singapore, Vietnam check ACGI TLV

16. *Other Information*

MSDS Creation Date: 04/07/2006.

The information above is believed to be accurate and represents the best information currently available to us. However, we made 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 the company 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, even if the company has been advised of the possibility of such damages.
