SAFETY DATA SHEET

SECTION 1 : IDENTIFICATION

Product identifier used on the label:

Product Name:	**Westco TIO2**

Other means of identification:

Product Description:	Metallic oxide used as white pigment.
Synonyms:	Titanium Dioxide, TIO2 Anatase, TIO2 Rutile

Recommended use of the chemical and restrictions on use:

Product Use/Restriction:	White pigment for application in following industries: Coatings, plastics, printing inks, paper, man-made fibers, glass, vitreous enamels, ceramic products, textile, textile, rubber, cement, chemical industry.

Chemical distributor, or other responsible party Name, address, and telephone number:

Distributor Name:	Western Reserve Chemical Corporation
Address:	4837 Darrow Road Stow, OH 44224 USA
General Phone Number:	330 650 2244
General Fax Number:	330 650 2255

Emergency phone number::

Emergency Phone Number:	Chemtrec 1 800 424 9300 USA
Website:	www.wrchem.com

SECTION 2 : HAZARD(S) IDENTIFICATION

Classification of the chemical in accordance with CFR 1910.1200(d)(f):

GHS Class:	Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).
Hazard Statements:	Not applicable.
Precautionary Statements:	Not applicable.

Hazards not otherwise classified that have been identified during the classification process:

Emergency Overview:

Hazards Identification:
Classification of the substance:
Classification:
The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:
EU CLP 1272/2008:
Hazard classes/Hazard categories: Not Applicable
Hazard statement: Not Applicable

For full text of H- phrases: See section 2.

67/548/EEC:
Hazards characteristics: Not Applicable
R-Phrases: Not Applicable

The most important adverse effects:
The most important adverse physicochemical effects: Not applicable.

The most important adverse human health effects: Not applicable

The most important adverse environmental effects: Not applicable

Label elements: Not applicable

Other hazards: Not available

Titanium dioxide

Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	Dusts and particles from this product may cause irritation.
Carcinogenicity:	Not classified

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures:

Chemical Name	CAS#	Ingredient Percent	EC Num.
Titanium dioxide	13463-67-7	Concentration: > 87 %	236-675-5

SECTION 4 : FIRST AID MEASURES

Description of necessary measures:

Eye Contact: Rinse immediately with plenty of water. If irritation persists, seek medical attention.

Skin Contact: Wash with soap and water.

Inhalation: Move to a fresh air atmosphere. In case of persistent symptoms, consult a doctor.

Ingestion: No adverse health effects anticipated by this route, however, in the event of ingestion, increase intake of liquid in order to flush from the body. In case of persistent symptoms, consult a doctor.

SECTION 5 : FIRE FIGHTING MEASURES

Suitable and unsuitable extinguishing media:

Suitable Extinguishing Media: Use any media appropriate for combustible material in the area.

Specific hazards arising from the chemical:

Hazardous Combustion Byproducts: Special intervention methods: Product is inert, non flammable and non combustible.

Special protective equipment and precautions for fire-fighters:

Protective Equipment: Protection of fire-fighters: Usual protective equipment for fire fighters.

Fire Fighting Instructions: Clear all non -emergency personnel. Do not enter confined fire space without full bunker gear including positive pressure self-contained breathing apparatus.

Notes : Specific risks: Product is inert, non flammable and non combustible.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Personnel Precautions: Avoid generation of dust. Ensure adequate ventilation. Wear personal protective equipment.

Environmental precautions:

Environmental Precautions: Prevent run-off from entering ground, storm sewers and ditches which lead to natural waterways.

Methods and materials for containment and cleaning up:

Spill Cleanup Measures: Use any feasible mechanical means (e.g. vacuum, sweeping) but avoid dusting during clean-up. The product can cause slippery conditions if wet. Even at low concentration, the product renders the discharge in liquid effluent highly visible.

SECTION 7 : HANDLING and STORAGE

Precautions for safe handling:

Handling: Avoid raising dust. Handling systems and areas should be operated in such a way as to minimize exposure to dust.
Manual handling guidelines should be adhered to when handling sacks.

Hygiene Practices: Wash thoroughly after handling.
Avoid contact with eyes and skin.
Avoid inhaling dust.

Special Handling Procedures: Warning: At the final stage of production, titanium dioxide product is packaged at temperatures of approximately 100 to 120°C (212 to 248°F). The material may stay hot for a long time depending on ambient temperatures and inventory storage practices. Due to the potential of elevated pigment temperature, caution should be used while handling pigment and in solvent applications. Each work environment must be assessed to determine hazards

Conditions for safe storage, including any incompatibilities:

Storage: Conditions for safe storage, including any incompatibilities:
Packaging materials: No special requirements. Storage condition: Stored in a cool, dry, ventilated area.

Further information: Use original container. Protect against physical damage; observe all warnings and precautions listed for the product.

Specific end use(s):

Work Practices:	Use this product with adequate ventilation. Handle minimizing dust. Take precautionary measures agains static discharges. Safety showers and eye wash stations should be available.

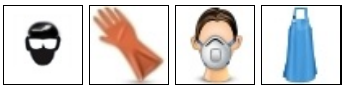
SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE GUIDELINES:

Appropriate engineering controls:

Engineering Controls:	Appropriate engineering controls: Production facilities should be provided with running drinking water, local and general aspiration system. In facilities, where titanium dioxide is handled, eating and food storage are not permitted.

Individual protection measures:

Eye/Face Protection:	Wear dust-proof goggles, (protection class 5) according to EN 166.
Skin Protection Description:	Respect main rules concerning the protection clothes for chemicals handling. If skin contact is expected protective clothing is appropriate.
Hand Protection Description:	Glove material: Use protective gloves according to EN374 to prevent skin contact with dust., Break through time: > 60 min
Respiratory Protection:	A respirator must be used if the dust concentration is likely to exceed the occupational exposure limit. An approved dust respirator is recommended as appropriate depending on dust levels and other workplace factors.
Other Protective:	Environmental exposure controls: Do not allow material to contaminate ground water system. It is recommended that the exhaust air of the air-conditioning is filtered off in bag filters.
PPE Pictograms:	

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES:

Physical State:	Appearance: Powdered solid
Color:	White
Odor:	Odourless
Odor Threshold:	Not Available
Boiling Point:	(Deg C): Not determined
Melting Point:	> 1800 deg C
Density:	Relative Density (25 deg C): Anatase 3.8 g/cm3 Rutile 4.2 g/cm3
	Bulk density (kg/m3): 500-900 kg/cm3
Vapor Density:	Not Applicable
Vapor Pressure:	(20 deg C): Not applicable
Evaporation Rate:	not determined
pH:	not determined
Flash Point:	(Deg C): Not applicable
Lower Flammable/Explosive Limit:	not determined
Upper Flammable/Explosive Limit:	not determined
Auto Ignition Temperature:	Not Applicable
Explosive Properties:	Not Applicable
Oxidizing Properties:	Not Applicable

9.2. Other information:

Notes :	Flammability (solid, gas): Not applicable
	Ignition temperature (deg C): Not applicable
	n-Octanol/Water (log Po/w): Not applicable
	Other information: Fat solubility(solvent- oil to be specified): Insoluble Surface tension: Not applicable Dissociation constant in water (pKa): Not applicable Oxidation-reduction Potential: Not available

SECTION 10 : STABILITY and REACTIVITY

Reactivity:

Reactivity:	The substance is stable under normal storage and handling conditions.

Chemical Stability:

Chemical Stability:	Stable under normal conditions.
Possibility of hazardous reactions:	
Hazardous Polymerization:	Under normal conditions, not hazardous reactions will occur.
Conditions To Avoid:	
Conditions to Avoid:	The substance is amphoteric (exhibits characteristics of very weak acid and weak base). Reducible, reacts with halogens, interreacts with ammonia and hydrogen peroxide. Reacting with H_2O_2 generates ortho-titanic acid H_4TiO_4 (of yellow color). When heated with NH_3 generates TiN. When melted or agglomerated with oxides, metal carbonates titanates and double oxides are generated. With hydrogen, carbon, active metals (magnesium, calcium, sodium) TiO_2 when heated is reduced to lower oxides. When heated with chlorine in the presence of reducing agents (coal) generates $TiCl_4$.
Incompatible Materials:	
Incompatible Materials:	None reasonably foreseeable.
Hazardous Decomposition Products:	
Special Decomposition Products:	None in normal or expected use.

SECTION 11 : TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Titanium dioxide :

Acute Toxicity:	Toxicokinetics, metabolism and distribution: Non-human toxikological data: Not available Method: Not available Dosis: Not available Routes of administration: Not available Results: Not available Absorption: Not available Distribution: Not available Metabolism: Not available Excretion: Not available

Titanium dioxide :

Skin:	Acute LD50(Dermal Rabbit): Not applicable
Inhalation:	Acute LC50(Inhalation, Rat): Not applicable
Ingestion:	Acute LD50(Oral, Rat): > 10.000 mg/kg
Sensitization:	Respiratory or skin sensitization: Not sensitizing
Mutagenicity:	Germ cell mutagenicity: Not classified
Reproductive Toxicity:	Not classified

SECTION 12 : ECOLOGICAL INFORMATION

Titanium dioxide :

Persistence and degradability:	
Biodegradation:	Persistence and degradability: Biodegradability [BD = (BOD5: COD) • 100 %]: < 10% (practically nonbiodegradable) Chemical oxygen demand (COD): Nonoxidizable. Biological oxygen demand (BOD): Nonoxidizable. The substance half life: > 30 days. Persistence and biodegradability-is resistant to degradation and isn't subject to biodegradation.
Bioaccumulative potential:	
Bioaccumulation:	Cumulativeness: Weak. Not a persistent bioaccumulative substance.
Mobility in soil:	
Mobility In Environmental Media:	Toxic effect on soil invertebrates: bacterial toxicity: EC0> 5000 mg/l (Pseudomonas fluorescens, Escherichia coli; 24 hours).
Other adverse effects:	
Effect of Material On Aquatic Life:	LC50 1000 mg/l 48h Fish(Leuciscus idus): OECD 203 Evaluation: Not Applicable Remarks: Not Applicable EC50 2.0 mg/l 96h Daphnia magna(Scenedesmus obliquus): OECD 202 Evaluation: Not Applicable Remarks: Not Applicable EC50 N/A 96h Algae: OECD 201 Evaluation: Not Applicable Remarks: Not Applicable

SECTION 13 : DISPOSAL CONSIDERATIONS

Description of waste:	
Waste Disposal:	The product is not hazardous for waste dumping in industrial or sanitary retention ponds. Disposal of the waste in correspondence with the state and local regulations.
Contaminated Packaging:	Product/Packaging disposal: Contaminated packages are not considered hazardous. If recycling is not

practicable, dispose of in compliance with local regulations.

SECTION 14 : TRANSPORT INFORMATION

DOT Pictograms:	
IATA Shipping Name:	Not regulated
IATA UN Number:	Not regulated
IATA Packing Group:	Not regulated
IATA Pictograms:	
IMDG UN NUmber :	Not regulated
IMDG Shipping Name :	Not regulated
IMDG Hazard Class :	Not regulated
IMDG Packing Group :	Not regulated
RID UN Number :	Not regulated
RID Shipping Name :	Not regulated
RID Hazard Class :	Not regulated
RID Packing Group :	Not regulated
ICAO UN Number :	Not regulated
ICAO Shipping Name:	Not regulated
ICAO Hazard Class :	Not regulated
ICAO Packing Group :	Not regulated

SECTION 15 : REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product:

Titanium dioxide :

TSCA Inventory Status:	All components of this product are listed in the TSCA inventory of Chemicals Substances.
Section 311/312 Hazard Categories:	Under Title III, Section 311/312 this product is classified as an Acute material.
EC Number:	236-675-5

SECTION 16 : ADDITIONAL INFORMATION

HMIS Ratings:

HMIS Health Hazard:	1
HMIS Fire Hazard:	0
HMIS Reactivity:	0
HMIS Personal Protection:	J

Health Hazard	**1**
Fire Hazard	**0**
Reactivity	**0**
Personal Protection	**J**

SDS Revision Date:	June 24, 2015
MSDS Revision Notes:	Indication of changes: Amended by EU No 453/2010
Notes :	Important Note: This information relates to the specific product described herein and may not be valid for this material when used in combination with other raw materials. The information provided is without warranty regarding its accuracy or completeness. The information may not be valid under all conditions. The user has the final responsibility for determining the suitability of the product in a given application.