



SAFETY DATA SHEET



Distributed by:
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CHEMICAL NAME: Titanium Dioxide
COMMON/TRADE NAME: Leucoxene, Rutile, Rutile "94", TiO₂

SECTION 1 - IDENTIFICATION

Product Identifier Titanium Dioxide
Other Name(s) Leucoxene, Rutile, Rutile "94", TiO₂
Recommended use Manufacturing and Welding
Restrictions for use Commercial use only, not for human consumption
Manufacturer Name Chemalloy Company LLC **Telephone** (610) 527-3700
Address PO Box 350 **Fax No.** (610) 527-3878
 Bryn Mawr, PA 19010 **Emergency Phone** (800) 424-9300 (Chemtrec)
Contract No. CCN 4453

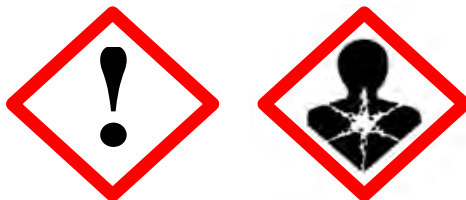
SECTION 2 - HAZARD(S) IDENTIFICATION

Hazardous Classification per 29CFR 1910.1200 (Rev. July 1, 2012)
 Carcinogenicity (Category 1B)
 Specific target organ toxicity - single exposure (Category 3 - Respiratory Organs)
 Specific target organ toxicity - repeated exposure (Category 2 - Respiratory)
 100% of ingredients consists of unknown acute toxicity

Other Hazards not classified None Known

Signal Word DANGER

Hazard pictograms



Hazard Statements
 May cause cancer by inhalation.
 May cause respiratory irritation
 May cause damage to respiratory systems

Precautionary Statements

Prevention Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Do Not breathe dust, fume, gas, mist, vapors or spray.
 Use only in a well-ventilated area or outdoors.

Response If inhaled: Move person to fresh air and keep comfortable.
 Seek medical advice/attention if feeling unwell, exposed or concerned.

Storage Store in a well-ventilated place in properly labelled, tightly sealed appropriate packaging.
 Prohibit access to unauthorized use.

Disposal Dispose of contents/container in accordance with local, state and federal regulations.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Formula	CAS No.	Concentration
Titanium Dioxide	TiO ₂	13463-67-7	> 92 % and < 98 %
Silicon Dioxide	SiO ₂	14808-60-7	> 1 % and < 5 %
Zirconium Oxide	ZrO ₂	1314-23-4	> 0.5 % and < 3 %

Common Names/Synonyms Leucoxene, Rutile, Rutile "94", TiO₂

SECTION 4 - FIRST AID MEASURES

In case of inhalation	If inhaled: Move person to fresh air and keep comfortable. Seek medical advice/attention if feeling unwell, exposed or concerned. If victim is not breathing, and if assistance is trained, administer CPR.
In case of skin contact	If after contact, skin becomes irritated, remove contaminated clothes from victim. Wash the contaminated area with plenty of warm water and soap (for 15 minutes). If symptoms persist, seek medical attention and report substance contacting skin.
In case of eye contact	Flush eyes immediately with plenty of flowing water for 15 minutes holding eyelids open. If symptoms persist, seek medical attention and report substance irritating eyes.
In case of ingestion	Obtain immediate medical attention and report substance ingested. Do not give an unconscious victim anything to eat or drink, or try to induce vomiting.
Symptoms & Effects -acute	May cause irritation of the respiratory system
Symptoms & Effects -chronic	Longtime overexposure may cause silicosis or cancer due to the silica content.
Immediate Medical Care	Treat symptomatically.

SECTION 5 - FIREFIGHTING MEASURES

Extinguishing media	Substance is not flammable or combustible, in case of fire use extinguishing media appropriate for the surrounding environment (i.e. ABC dry chemical)
Special hazards arising from substance or mixture	None Known
Special protective equipment & precautions for firefighters	Firefighters should wear full protective clothing and NIOSH approved self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures	For non-emergency personnel: keep unprotected people away, allow only well trained personnel wearing suitable protective clothing to respond to the incident. For emergency responders: Avoid eye and skin contact; Do not inhale dust particles, and avoid the formation of dust.
Methods and materials for containment and clean-up	Collect the spilled material in mechanical way, then place into a suitable, closed, properly labelled chemical waste container for disposal. During disposal wear suitable personal protective equipment.
Environmental precautions	Dispose of spillage and waste (product/packaging) in accordance with all applicable environmental laws.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling	Observe conventional hygiene precautions, and after work hours, wash hands thoroughly. Avoid the direct contact with the product. Do not eat or smoke in the workplace. Ensure adequate ventilation and avoid formation of dust. Use Personal Protective Equipment as detailed in Section 8. Emptied containers may contain residues of product, which may be hazardous.
Conditions for Safe Storage, including any incompatibilities	Keep product dry in suitable packaging, properly labeled and away from acids. Keep product away from food, beverages, luxury goods, feed, and pharmaceuticals. Follow all instructions on warning labels.
Precautions against fire and explosion	No special measures are required, substance will not burn.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Limits**

Hazardous Component	CAS NO.	OSHA PEL	ACGIH TLV
Titanium Dioxide	13463-67-7	10.0 mg/M ³ TWA (Total Dust)	10.0 mg/M ³ TWA
Silicon Dioxide	14808-60-7	0.1 mg/M ³ TWA (Respirable Dust)	0.025 mg/M ³ TWA (Respirable Particles)
Zirconium Oxide	1314-23-4	5 mg/M ³ TWA, 10 mg/M ³ STEL (as Zr)	5 mg/M ³ TWA, 10 mg/M ³ STEL (as Zr)

Personal Protection Requirements

Respiratory: NIOSH approved respirators should be used when mechanical controls are not feasible.

Hand: Protective gloves are recommended for handling this material.

Eye: ANSI approved eye protection is recommended when handling this material.

Other/ Clothing: Appropriate work place clothing should be worn when handling this material.

Engineering Controls: Local exhaust/ventilation should be used when feasible to control dust levels below acceptable occupational exposure limits.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE/APPEARANCE black to brownish red powder	ODOR No odor	ODOR THRESHOLD No data available
pH No data available	MELTING PT approx. 1649°C	INITIAL BOILING PT No data available
FLASH PT Not Applicable	EVAPORATION RATE Not Applicable	FLAMMABILITY (solid, gas) Non Flammable
UEL / LEL Not Applicable	VAPOR PRESSURE Not Applicable	VAPOR DENSITY Not Applicable
SPECIFIC GRAVITY/RELATIVE DENSITY 4.3 to 5.0 (H ₂ O=1)	SOLUBILITY (water) Insoluble	PARTITION COEFFICIENT Not Applicable
AUTO IGNITION TEMPERATURE Not Applicable	DECOMPOSITION TEMPERATURE No data available	VISCOSITY Not Applicable

SECTION 10 - STABILITY AND REACTIVITY

Reactivity None Known

Chemical Stability Stable at normal temperature & general work conditions

Possibility of Hazardous Reactions None Known

Conditions to Avoid None Known

Incompatible Materials None Known

Hazardous Decomposition Products None known

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY None Known	LD ₅₀ (inhalation-rat) No Data Available	LD ₅₀ (oral-rat) No Data Available	ATE CALCULATIONS Not Applicable
SKIN CORROSION/IRRITATION None Known	SERIOUS EYE DAMAGE/EYE IRRITATION None Known		SKIN SENSITIZATION None Known
GERM CELL MUTAGENICITY None Known	CARCINOGENICITY (IARC, NTP, OSHA, ACGIH) Category 1B: ACGIH classifies SiO ₂ as a suspected human carcinogen		REPRODUCTIVE TOXICITY None Known
STOT-SINGLE EXPOSURE Category 3 - Respiratory	STOT-REPEATED EXPOSURE Category 2 - Respiratory		ASPIRATION HAZARD None Known

SECTION 11 - TOXICOLOGICAL INFORMATION (cont.)

Likely Routes of Exposure Inhalation

Symptoms related to Physical, Chemical, Toxicological Characteristics May cause irritation of the respiratory system

Immediate and Delayed effects from short-term and long-term exposure Longtime overexposure may cause silicosis or cancer due to the silica content.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY	LC ₅₀ (fish)	EC ₅₀ (crustaceans)	NOEC (algae)
None Known	No Data Available	No Data Available	No Data Available

Persistence and Degradability No data available

Bioaccumulative potential No data available

Mobility in Soil No data available

Other Adverse Effects No data available

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in Sections 7 and 8.

Methods of Disposal Dispose of spillage and waste (product/packaging) in accordance with all local/regional national/ international regulations.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name This material is not regulated by 49 CFR.

UN Number none

Hazard Class none

Packing Group none

SECTION 15 - REGULATORY INFORMATION

TSCA Information

This chemical appears on the Toxic Substances Control Act (TSCA) inventory.

SARA Title III: Sec 302 Extremely Hazardous Substances, 40 CFR355

There are no extremely hazardous substances present in this material.

SARA Title III: Sec 311 and 312, MSDS Requirements

This material is subject to the reporting requirements for this regulation. Threshold planning quantity: 10,000 lbs.

SARA Title III: Sec 313, Toxic Chemicals Notification

This material is not subject to the annual reporting requirements for this regulation.

SECTION 16 - OTHER INFORMATION

Revision History 05/26/2015 - SDS formatted to 16-part GHS format, Supersedes 10/01/2012 MSDS revision

NOTE: The data contained in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information herein is based on technical data that Chemalloy believes to be reliable. It is intended to be used by persons with technical skill. Prior to use, users shall conduct their own investigation(s) to determine the suitability of the information for their particular purpose, and appropriate warnings and safe handling procedures should be provided to handlers and users. Any use of this data must be determined by the user to be in accordance with federal, state and local laws and regulations. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents. Since conditions of use and suitability are beyond Chemalloy's control, any risks of use and suitability are therefor assumed by the user, and Chemalloy expressly disclaims all warranties, including warranties of merchantability and fitness for a particular purpose, express or implied, in respect to the use or suitability of the material.



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