



For Chemical Emergency call Infotrac @ 1-800-535-5053

Material Safety Data Sheet

Section 1 - Product Information	
Product Name:	Titanium
Chemical Name:	See Section 2

Section 2 - Ingredients	
<u>Chemical Name</u>	<u>CAS#</u>
Aluminum	7429-90-5
Carbon Black	1333-86-4
Chlorine	7782-50-5
Hydrogen	1333-74-0
Iron	7439-89-6
Lithium	7439-93-2
Nitrogen	7727-37-9
Oxygen	7782-44-7
Magnesium	7439-95-4
Potassium	7440-09-7
Silicon	7440-21-3
Sodium Metal	7440-23-5
Titanium	7440-32-6
Water	7732-18-5

Section 3 - Physical/Chemical Characteristics			
Boiling Point	5930 F	Solubility in Water	Insoluble
Vapor Pressure (mm Hg)	N/A	Specific Gravity (H2O = 1)	4.5
Vapor Density (Air = 1)	N/A	Melting Point	3050 F
Appearance and Odor / Odor threshold	Matte-gray sponge or granules, no odor		
Evaporation Rate (Butyl Acetate = 1)	N/A	PH	N/A
Freezing Point	N/A		

Section 4 - Fire and Explosion Data				
Lower Explosive/Flammability Limit		N/A	Flash Point	N/A
Upper Explosive/Flammability Limit		N/A	Autoignition Temperature	N/A
Extinguishing Media	Regular dry chemical, table salt, sand, lime, soda ash, or type D fire extinguisher.			
Fire Fighting Measures	<i>Large Fires:</i> Keep unnecessary people away, isolate hazard area and deny entry.			
	Let fire burn.			
	Do not get water inside container. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks.			
	<i>For fires in cargo or storage area:</i> Cool containers with water from an unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.			
	Severe fire hazard. Finely divided material may ignite spontaneously.			
	Fire or Explosion Hazards			

Section 5 - Reactivity Data	
Chemical Stability	Stable at normal temperature and pressure. Water may react explosively with molten material.
Conditions to Avoid	Avoid contact with air, heat, flames, sparks, and other sources of ignition. Dangerous gases may accumulate in confined spaces. Keep out of water supplies and sewers.
Incompatibility	Acids, metal salts, metals, bases, halogens, halo carbons, metal oxides, oxidizing materials
Titanium Reactions	ACIDS (STRONG): Attacks ALUMINUM: Incompatible
	ALKALI-METAL CARBONATES: Vivid incandescence.
	BASES (STRONG): Incompatible
	BROMINE TRIFLUORIDE: Incandescence and violent reaction.
	CARBON BLACK: May form pyrophoric mixtures.
	CARBON DIOXIDE: Ignitable and explosive.
	CARBON DIOXIDE + NITROGEN: Ignited on heating.
	HALOCARBONS: Incompatible.
	HALOGENS: Incandescence and ignition when heated.
	METAL CARBONATES: Explosive reaction.
	METAL OXIDES: Violent reaction when heated.
	METAL OXY SALTS: Incompatible.
	MINERAL ACIDS: Incompatible.
	NITROGEN: Burns vigorously above 802 C
	NITRIC ACID (RED FUMING): Violent explosion when touched.
	NITRYL FLUORIDE: Ignition upon mild warming.
	OXIDIZERS (STRONG): Incompatible.
	OXYGEN (LIQUID): Forms detonable mixture.
	POTASSIUM COMPOUNDS: Vivid incandescence and explosion upon heating.
	POTASSIUM PERCHLORATE + NICKEL: May ignite.
SILVER FLUORIDE: Incandescent at 320 C	
TRICHLOROETHYLENE: Will flash or spark on heavy impact.	
TRICHLOROTRIFLUOROETHANE: Will flash or spark on heavy impact.	

Section 6 - Health Hazard Data	
Routes of Entry	Inhalation, eye contact.
Health Hazards	See Signs and Symptoms of exposure.
Carcinogenicity	None listed.
Signs and Symptoms of Exposure	<p><i>Inhalation:</i> Short Term Exposure: Irritation, chest pain, difficulty breathing. Long Term Exposure: Irritation, difficulty breathing, lung damage, blood disorders.</p> <p><i>Skin Contact:</i> Short Term Exposure: Irritation Long Term Exposure: no info. On significant adverse effects.</p> <p><i>Eye Contact:</i> Short Term Exposure: Irritation Long Term Exposure: no info. On significant adverse effects.</p> <p><i>Ingestion:</i> Short/Long Term Exposure: No information on significant adverse effects.</p>
Medical conditions generally aggravated by exposure	N/A
Emergency and First Aid Procedures	<p><i>Eye Contact:</i> In case of contact, wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no chemical remains. Get medical attention immediately.</p> <p><i>Skin Contact:</i> If irritation develops, remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.</p> <p><i>Inhalation:</i> In case of overexposure, immediately move from contaminated area. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.</p> <p><i>Ingestion:</i> If vomiting occurs, keep head lower than hips to help prevent aspiration. If a large amount is swallowed, get medical attention.</p>
Section 7 - Precautions for Safe Handling and Use	
Spill or Release Data	Remove spills immediately by sweeping, and avoid contact with sparks or ignition sources.
Waste Disposal Method	Dispose in accordance with all applicable regulations.
Handling and Storage	Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.
Other Precautions	See Control Measures.

Section 8 - Control Measures	
Respiratory Protection	Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from min. to max. Consider warning properties before use.
	Any dust, mist and fume respirator.
	Any air-purifying respirtator with a high-efficiency particulate filter.
	Any powered, air-purifying respirator with a dust, mist, and fume filter.
	Any powered, air-purifying respirator with a high-efficiency particulate filter.
	For unknown concentrations or immediately dangerous to life or health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
	Any self-contained breathing apparatus with a full facepiece.
Protective Gloves	Recommended when handling.
Eye Protection	Safety glasses with sideshields should be worn. Eye wash provided.
Other Protective Equip.	Shop coat is recommended when handling.
Ventilation	Provide adequate ventilation. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

To the best of our knowledge, the information contained above is accurate. However, neither the above named supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained above.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described above, we cannot guarantee that these are the only hazards that exist.

Prepared: November 2007