Titanium

ACTIO MSDS ID: 776550

View Section: 1 2 3 4 5 6 7 8 9 10

Kurt J. Lesker Company

HMIS

Titanium Metal, Powder and Pieces (> 75 Microns)

REACTIVITY	0
PPE	E

KJLC Product Code:
,EJTALCUTI4A4,EJTCOTI10

SECTION 1 : Chemical Product and Company Identification

MSDS Name: Titanium Metal, Powder and Pieces (> 75 Microns)
Manufacturer Name:Kurt J. Lesker Company
Address:

P.O. Box 10
1925 Route 51
Clairton, PA 15025

For emergencies in the US, call CHEMTREC: 800-424-9300
Manufacturer MSDS Revision Date:

06/30/2008

Synonyms:

Titanium metal; contimet 30; C.P. titanium; IMI 115; NCI-CO4251; oremet; titanium alloy.

Chemical Family: Metal
Chemical Formula: Ti
Molecular Weight: 47.88
HMIS

Health Hazard: 1
Fire Hazard: 0
Reactivity: 0
Personal Protection: E

UPC/EAN: 231-142-3

DOT HAZARD LABEL: No data.

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OTHER HAZARD RATINGS:
Health: 1
Flammability: 0
Reactivity: 0
Special Hazard: E

HAZARD RATINGS:
Minimal: 0
Slight: 1
Moderate: 2
Serious: 3
Extreme: 4

SECTION 2 : Hazardous Ingredients/Identity Information

Chemical Name	CAS#	Percent
Titanium	7440-32-6	0.0 - 100.0%

OSHA PEL TWA: Not Established
ACGIH TLV TWA: Not Established
Hazardous: Yes
SARA Section 302: No
SARA Section 313: No
Other Exposure Guidelines:
Not Established
SEC.304 RQ: No

CAS#	Percent
Not Applicable	0.0 - 100.0%

OSHA PEL TWA: No data.
ACGIH TLV TWA: No data.
Hazardous: Yes
SARA Section 302: No
SARA Section 313: No
Other Exposure Guidelines:
No data.
NAME: See SECTION 16-Other Information

SEC.304 RQ: No

SECTION 3 : Physical And Chemical Characteristics

Physical State/Appearance:
Pieces
Color:
Dark gray powder or silver-gray
Odor:
No odor.

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Physical State:
Solid
pH:
No data.
Vapor Pressure:
(VS. AIR OR MM HG): 0 at 20.0 deg C (68.0 deg F)
Vapor Density:
(VS. AIR = 1): No data.
Boiling Point:
3287.00 deg C (5948.6 deg F)
Melting Point:
1650.00 deg C (3002.0 deg F) to 1670.00 deg C (3038.0 deg F)
Solubility:
IN WATER: Insoluble
Specific Gravity:
(WATER = 1): 4.5 at 20.0 deg C (68.0 deg F)
Density:
No data.
Evaporation Point:
(VS BUTYL ACETATE=1): No data.
Percent Volatile:
Not Applicable
FlashPoint:
Not Applicable
Auto Ignition Temp:
1200.00 deg C (2192.0 deg F)
Upper Flammable Explosive Limit:
Not Applicable
Lower Flammable Explosive Limit:
Not Applicable
OTHER SOLUBILITY NOTES: Decomposes steam at 700-800 deg C

SECTION 4 : Fire And Explosion Hazards

Flash Point:
Not Applicable
Flash Point Method:
No data.
Upper Flammable or Explosive Limit: Not Applicable
Lower Flammable or Explosive Limit: Not Applicable
Auto Ignition Temperature: 1200.00 deg C (2192.0 deg F)
Extinguishing Media:
AUTOIGNITION POINT: 1200 deg C for solid metal in air 250 deg C for powder in air
USE: Class D, inert gas (argon or helium) or other metal extinguishing agent.
DO NOT USE: Water or carbon dioxide. Water applied to hot titanium may evolve

hydrogen, causing an explosion.

Fire Fighting Instructions:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire Hazards:

May burn in an atmosphere of carbon dioxide, nitrogen or air.
May react violently with BrF3; CuO; PbO; (Ni + KClO3), metaloxy salts; halocarbons; halogens; CO2 metal carbonates; Al; AgF; O2; nitryl fluoride; HNO3; O2; KClO3; KNO3; KMnO4; steam at 704F; trichloroethylene; trichlorotri-fluoroethane. Titanium, in the absence of moisture, burns slowely, but evolves much heat.
Water applied to hot titanium may evolve hydrogen, causing an explosion.

SECTION 5 : Health Hazards

Applies to all ingredients:

Route of Exposure:

Inhalation: Yes
Skin: No
Eyes: No
Ingestion: No
Other: No

Potential Health Effects:

Eye Contact:

Acute: May cause abbrasive irritation.

Skin Contact:

Acute: May cause abbrasive irritation.

Inhalation:

Acute: Prolonged inhalation may cause mild irritation to the lungs and respiratory tract.

Ingestion:

Acute: Relatively non-toxic, poorly absorbed from the ailmentary tract.

Chronic Eye Contact:a

No chronic health effects recorded.

Chronic Skin Contact:

No chronic health effects recorded.

Chronic Inhalation:

May cause fibrotic lung changes.

Chronic Ingestion:

No chronic health effects recorded.

Carcinogenicity:

OSHA Designation: Regulated: No

NTP Designation: No

IARC Designation: Monographs: No

Target Organs:

No target organs recorded.

Signs/Symptoms:

INHALATION: Prolonged exposure may cause a red, dry, throat, coughing and

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shortness of breath.

INGESTION: No acute or chronic health effects recorded.

SKIN: May cause redness and itching.

EYE: May cause redness, itching and watering.

Aggravation of Pre-Existing Conditions:

None recorded.

CARCINOGENICITY/OTHER INFORMATION:
Questionable carcinogen with experimental tumorigenic data. Experimental reproductive effects.

Orl-rat TDLO: 158 mg/kg multi: Reproductive effects
Intramuscular-rat TDLO: 114 mg/kg/77W-I: Equivocal Tumorigenic Agent
Intramuscular-rat TD: 360 mg/kg/69W-I: Equivocal Tumorigenic Agent

RECOMMENDED EXPOSURE LIMITS: See "Section 2"

LD50/LC50: See "Carcinogenicity/Other Information"

Titanium:

Potential Health Effects:

(ACUTE AND CHRONIC):
TITANIUM: This material is generally considered to be physiologically inert. There are no reported cases in the literature where titanium as such has caused human intoxication. The dusts of titanium or most titanium compounds such as titanium oxide may be placed in the nuisance category. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

SECTION 6 : Emergency And First Aid Procedures

Eye Contact:

Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Skin Contact:

Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

Inhalation:

Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist.

Ingestion:

Give 1-2 glasses of milk or water and induce vomiting; Never induce vomiting or give anything by mouth to an unconscious person.

Note to Physicians:

No data available.

SECTION 7 : Reactivity Data

Chemical Stability:

Stable

Conditions to Avoid:

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INSTABILITY: Dispersion in air

Incompatibilities with Other Materials:

MATERIALS TO AVOID: TITANIUM: Air, BrF3, CuO, PbO, (Ni + KClO3), metaloxy salts, halocarbons, halogens. CO2, metal carbonates, Al, AgF, O2 nitryl fluoride, HNO3, KClO3, KNO3, KMnO4, steam (> 700 deg C), trichloroethylene, trichlorotrifluoroethane, oxygen, carbon black, carbon dioxide and nitrogen, sodium chlorate. Water applied to hot titanium may evolve hydrogen, causing an explosion.

Hazardous Polymerization:

Will not occur

CONDITIONS TO AVOID: None

Hazardous Decomposition Products:

Metal fumes and titanium oxides

SECTION 8 : Precautions For Safe Handling

Spill Cleanup Measures:

Wear appropriate respiratory and protective equipment specified in section 9-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Other Precautions:

None

Handling:

Wash thoroughly after handling

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not disperse powder or dust in air.

Storage:

Store in cool, dry area

Store in tightly sealed container

PRECAUTIONS TO BE TAKEN IN STORING: None

Hygiene Practices:

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

Waste Disposal:

Dispose of in accordance with local, state and federal regulations.

DOT Shipping Name:

Titanium Metal Powder Dry

DOT UN Number:

UN2546

DOT Subpart E Labeling Requirement: No data.

SECTION 9 : Control Measures

Ventilation System:

Use process enclosures, local exhaust ventilation, or other engineering controls to

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control airborne levels.

Powders under 74 microns are flammable.

Personal Protective Equipment

Routine Handling:

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:
NIOSH approved respirator
Impervious gloves
Safety glasses

Hand Protection Description:

PROTECTIVE GLOVES: Rubber gloves

Eye/Face Protection:

Safety glasses

Protective Clothing/Body Protection:

Protective gear suitable to prevent contamination

Respiratory Protection:

(SPECIFY TYPE): NIOSH approved respirator

Exposure Limits:

RECOMMENDED EXPOSURE LIMITS: See "Section 2"

WORK/HYGIENIC/MAINTENANCE PRACTICES:
Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION 10 : Other Information

Applies to All Ingredients:

Section 302 (Yes/No): No

Section 304 CERCLA RQ: No

Section 313 Toxic Release Form (Yes/No): No

Titanium:

Section 302 (Yes/No): No

Section 304 CERCLA RQ: No

Section 313 Toxic Release Form (Yes/No): No

HMIS:

Health Hazard: 1 - Slight

Fire Hazard: 0 - Minimal

Reactivity: 0 - Minimal

Personal Protection: E

MSDS Revision Date:

06/30/2008

Disclaimer:

Kurt J. Lesker Company ("KJLC") believes the information contained in this Material Safety Data Sheet is accurate as of the "Date of Last Revision" specified. The information relates only to typical properties of the product. Do not use the information for product performance or specification purposes. The information is

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OTHER HAZARD RATINGS:
Health: 1
Flammability: 0
Reactivity: 0
Special Hazard: E

HAZARD RATINGS:
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Slight: 1
Moderate: 2
Serious: 3
Extreme: 4

Control of Substances Hazardous to Health Regulations
EH40 Occupational Exposure Limits

Maximum Exposure Limit: Not Established
Occupational Exposure Standard: Not Established

Abbreviations used:
NA = Not Applicable
NE: Not Established

Notes: . EJTALCUTI4A4, EJTCOTI10&3A, EJTCOTI5&1.5, EJTCOTI15&3A, EJTCOTI20&3A, EJTNBTI4A2+, EJTNBTI303A4, EJTNITI403A6, EJTNITI751.5, EJTNITI3A1*, EJTNITI251.5, EJTNITI302A4, EJTNITI302A2, EJTNITI303A4, EJTTINI303A2, EJTTINI2.99+, EJTTI50NI3A4, EJTTINI302A2, EJTNITI754MM, EJTNITI453A1, EJTNITISN1+, EJTNITI403A2, EJTNITI403A+, EJTNI49TI3A4, EJTNITI60MM+, EJTNI, EJTNITIPT1.5, EJTTI14X10.5, EJTTI2511.75, EJTTI25VTI