



# The David J. Joseph Company

## Metals Group

### Ferrotitanium, 70%, 10-50 mm, Std.Gr.

Date issued: December 28, 2015

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#### SECTION 1: PRODUCT & COMPANY IDENTIFICATION

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<b>Product name:</b>	<b>Ferrotitanium</b>	The David J. Joseph Company
<b>Chemical family:</b>	Group 4 (IVB), transition metal	<b>Address:</b> 300 Pike St.
<b>Recommended use:</b>	Alloy additive for steel and iron	Cincinnati, OH 45202

**Non-Emergency Contact:** DJJ Safety Department    **Non-Emergency Phone:** (513) 419-6200  
**Emergency Contact:** DJJ    **Emergency Phone:** (513) 562-1699

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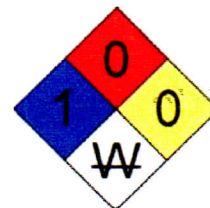
#### SECTION 2: HAZARD IDENTIFICATION

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**GHS classification:** None

**NFPA 704 rating:**

**HMIS rating:** None



**Label elements:**

**Signal word:** None

**Precautionary statements:** P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. NO SMOKING.  
P264: Wash hands thoroughly after handling.

**Health statements:** **Medical condition aggravated by exposure**  
Powder or dust may aggravate preexisting respiratory conditions.  
**Potential health effects**  
Powder may irritate the respiratory tract, eyes, mucus membranes, or dermal surfaces.

P370+378: In case of fire: Use table salt, dry sand, or Class D Fire Extinguisher to contain fire.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

**Target organs**

Mucus membranes

**Relevant route(s) of exposure**

Inhalation: Yes; Skin contact: Yes

Ingestion: Yes; Eye contact: Yes

**Potential environmental effects**

No information available.

This material is considered **NOT HAZARDOUS** according to the criteria of Canada's federal Hazardous Products Act and the United States' OSHA Hazard Communication Standard. However, this SDS constitutes a primary source of information for safe handling, emergency response, and proper use of **lumpy ferrotitanium**.



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### SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name: **Ferrotitanium (FeTi)** Common name: **70% FerroTi 10-50, standard grade, regular size / lumpy**  
CAS number: 12719-9

Principal components	CAS number	Concentration (% by weight)	TLV * (ACGIH), mg/m <sup>3</sup> , 8h TWA	PEL * (OSHA) mg/m <sup>3</sup> , 8h TWA
Titanium, Ti	7440-32-6	70	10	15 (total) 5 (respiratory)
Aluminum, Al	7429-90-5	6	10 (total) 5 (respiratory)	15 (total) 5 (respiratory)
Vanadium, V	7440-62-2	2.5	N/A	0.5 (dust) 0.1 (fume)
Iron, Fe	7439-89-6	20.5	5 (as iron oxide, dust)	10 (as iron oxide, fume)

(\*) See Section 8

### SECTION 4: FIRST-AID MEASURES

#### Most important symptoms and effects (acute or delayed)

Inhalation:	May irritate passages of nose and throat. Long term exposure to excessive dusts from this material may lead to fibrotic diseases of the lung.	Skin contact:	Not anticipated to have adverse effect but may cause slight Irritation
Eye contact:	May cause irritation through mechanical action	Ingestion:	May cause gastro intestinal irritation. Very low toxicity.

#### First-aid measures by route of exposure

Inhalation:	Remove patient to fresh air. Loosen tight clothing and allow to rest. Treat for shock if required. Rinse mouth and nose with water. Provide artificial respiration if breathing stops. Unless recovery is prompt, seek urgent medical advice	Skin contact:	Remove contaminated clothing (under deluge shower if necessary). Wash affected area for 5 minutes with soap and water. Do not rub hard. Rinse well and pat dry. If symptoms persist, or if burns are present, seek prompt medical advice
Eye contact:	Hold eyelids open and flush eyes with water for 15 minutes. Ensure that the underside of the eyelids is carefully flushed clean. If symptoms persist, or if burns are present, seek urgent medical advice	Ingestion:	Rinse mouth out with water. Give water to drink. Allow to rest. If symptoms persist, seek medical assistance.





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### SECTION 5: FIRE-FIGHTING MEASURES

#### Suitable extinguishing media

Use ONLY Class D fire extinguishers (NFPA-10 compliant); table salt; dry sand; dry ground dolomite, or dry powder extinguishing agents based on sodium chloride (preferred), lithium chloride or soda ash.

#### Unsuitable extinguishing media

DO NOT SPRAY WATER ON BURNING FERROTITANIUM. Water on molten or burning ferrotitanium may result in an explosion. Do NOT use carbon dioxide, as it is ineffective as an extinguisher. Do NOT use halogenated extinguishers. If moisture is present within burning metal fines, an explosion may occur. Personnel should evacuate and not attempt to extinguish the fire.

#### Specific hazards

**Flammable properties:** Product in itself is stable. Lump stocks will eventually burn if introduced to fire. Fines and particulate matter can be ignited but will not usually combust unless accumulated in high concentrations and under a spark. Poisonous gases are produced in fire. Containers may explode in fire. Fire may reignite after extinguishing. Fire may produce significant heat.

**Decomposition by-products:** Small amounts of arsine, phosphine and hydrogen gases (toxic and flammable) may evolve in the presence of moisture. Reaction with acids can evolve silanes, which may spontaneously ignite.

#### Special protective equipment and precautions for fire-fighters

**Precautions:** If caught by fire, lump stocks will not burn immediately unless moisture is introduced. Fight surrounding fires first. Small fires can be smothered with table salt, sand or by use of NFPA-10, class D, extinguishing material. DO NOT USE WATER directly on fires from this material. For large fires, it is advisable to allow the material, if contained, to burn out. If containment is not possible, call 911.

**Protection:** Ferrotitanium fires have intense heat. Wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH, and full protective gear. Irritating and highly toxic gases may be generated in fire.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Use personal protective equipment recommended in Section 8. Remove all ignition sources.

**Methods for containment:** Keep fines from becoming airborne. DO NOT USE COMPRESSED AIR. If ferrotitanium fines become airborne, ventilate properly to reduce air density.

**Environmental precautions:** Not thought to be an environmental threat unless large amounts are released at a single site. Dispose of in accordance to local, state, and federal regulations.

**Methods for cleanup:** Use non-sparking tools. Do not push powder long distances across the floor. Keep in small piles away from each other. Place material into non-sparking or anti-static containers. Use only static-free vacuums for cleaning.

Spills of this material do not need to be reported to the Canadian Transport Emergency Centre (CANUTEC) or the United States' National Response Center (NRC).



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### SECTION 7: HANDLING & STORAGE

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#### Precautions for safe handling

Mixing, blending, milling or grinding of dry powder should be performed under argon or helium.  
Keep away from open flames and other sources of ignition.

#### Conditions for safe storage

Store indoors to maintain product integrity.  
Store in a cool, dry, well-ventilated area.  
Store away from excessive heat, welding, grinding, or torching operations.  
Use non-sparking/anti-static containers, tools, and equipment.  
Maintain a supply of table salt and/or Class D fire extinguisher near the processing and storage areas.

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### SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

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#### Exposure Guidelines

Permissible Exposure Limits (PEL) according to the United States' Occupational Safety and Health Administration (OSHA), and Threshold Limit Values (TLV) according to the American Conference of Governmental Industrial Hygienists (ACGIH®), have been set for titanium powder and dust only.

OSHA PEL, for an 8-hour total weight average (TWA), is 15 mg/m<sup>3</sup> (total dust) and 5 mg/m<sup>3</sup> (respiratory dust).

ACGIH TLV, for an 8-hour total weight average (TWA), is 10 mg/m<sup>3</sup> (total dust).

Not listed by IARC, NIOSH, or NTP.

#### Appropriate Engineering Controls

Facility should be equipped with an eyewash and safety shower. Use adequate ventilation if grinding, cutting, welding, etc.

#### Personal Protective Equipment (PPE)

Skin protection:	Leather cut or puncture resistant gloves.	Respiratory protection:	Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN149. Use NIOSH approved respirator if exposure limits listed above are exceeded or if irritation or other symptoms are experienced.
	Wear appropriate clothing to prevent skin exposure. Cotton coveralls fastened at the neck and wrists are recommended.		
General hygiene considerations:	Wash hands after handling.	Eye/face protection:	Wear safety glasses with side shields or dust goggles as appropriate. Contact lenses may pose a hazard. Contact lenses may absorb irritants.
	Wear recommended PPE. Avoid transfer of material from hands to mouth while eating, drinking, or smoking.		





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### SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: Silver/gray metallic lumps (solid)	Flammability: Dust explosion hazard	Ignition temperature: 1200 °C (solid metal) 480 °C (powder/dust)
Odour/ Odour threshold: Odourless	Lower flammable/explosive limit: N/A	Partition coefficient n-octanol/water: N/A
pH: N/A	Upper flammable/explosive limit: N/A	Solubility: Insoluble
Melting point: 1135°C ± 10 °C	Vapour pressure: Not volatile	Decomposition temperature N/A
Initial boiling point: 3287 °C	Vapour density: N/A	Viscosity N/A
Flash point: Solid pieces will not flash	Relative density: ~5.6 – 6.8	Evaporation rate N/A

### SECTION 10: STABILITY & REACTIVITY

Chemical stability:	Stable	Incompatible materials:	When heated, it reacts with strong acids, aluminum, halogens, interhalogens, oxygen, chlorinated solvents, carbon dioxide, oxidizing agents, bromine trifluoride, nitric acid, silver fluoride, sodium chlorate, halocarbons, and metal oxides.
Possibility of hazardous reactions:	May react violently with interhalogens, oxidizing agents, strong acids or halogenated compounds. Reactions with incompatible materials may result in irritating or toxic gas.	Hazardous decomposition products:	When heated, it may react violently with interhalogens, oxidizing agents and mineral oxides, strong acids or halogenated compounds. Reactions with incompatible materials may result in irritating or toxic gas.
Conditions to avoid:	Keep away from sparks and flames, incompatible materials, extremes of temperatures and prolonged direct sunlight.		

### SECTION 11: TOXICOLOGICAL INFORMATION

#### Acute Effects

Oral:	May cause irritation of the digestive tract. Poorly absorbed from the alimentary tract.	Inhalation:	May cause irritation of the respiratory tract. May exacerbate preexisting conditions.
Dermal:	Irritant to skin and mucous membranes.	Eyes:	Dust or fines may cause irritation.
		Other:	No other acute effects have been noted



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### Chronic Effects

Carcinogenicity:	Tumorigenic effects have been observed in experiments with laboratory animals.	Reproductive effects:	Reproductive effects have been observed in experiments with laboratory animals.
Mutagenicity:	Properties have not been thoroughly evaluated.	Developmental effects:	Properties have not been thoroughly evaluated.
		Sensitization:	Sensitization is not believed to occur.

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## SECTION 12: ECOLOGICAL INFORMATION

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Ecotoxicity:	Persistence and degradability:	Bioaccumulative potential:
N/A	N/A	N/A
Mobility in soil:	Other adverse effects:	
N/A	N/A	

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## SECTION 13: DISPOSAL CONSIDERATIONS

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Dispose according to local, provincial, state, and/or federal regulations.

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## SECTION 14: TRANSPORT INFORMATION

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Ferrotitanium is not included by its nature or by the regulations in any of the classes listed in the schedule of the Canadian Transportation of Dangerous Goods Act of 1992, nor is it listed in the United States' Department of Transportation's Code of Federal Regulations, Title 49.

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## SECTION 15: REGULATORY INFORMATION

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### Canada

Components on the federal Hazardous Products Act's Ingredient Disclosure List: Aluminum, elemental; Chromium, elemental; Molybdenum, elemental; Tin, elemental; Vanadium, elemental; and Zirconium, elemental.

DSL/NDL: Titanium is listed on Canada's DSL List

Workplace Hazardous Materials Information System (WHMIS): Classification B4, B6

Toxic Substances Control Act (TSCA): Components that may be found in this product listed on the TSCA Inventory are: Aluminum (CAS 7429-90-5); Chromium (CAS 7440-47-3); Molybdenum (CAS 7439-98-7); Silicon (CAS 7440-21-3); Tin (CAS 7440-31-5); Titanium (CAS 7440-32-6); Vanadium (CAS 7440-62-2); Zirconium (CAS 7440-67-7); Niobium (CAS 7440-03-1).

To the best of our knowledge, this product does not contain hazardous substances, priority pollutants, or toxic pollutants as defined by the federal Canada Water Act or the provincial Clean Water Act of Ontario.



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### United States

Section 313 Supplier Notification: This product contains the following chemicals considered toxic and subject to the reporting requirements of SARA Title III Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372): Aluminum (dust/fume) CAS 7429-90-5, Chromium CAS 7440-47-3, and Vanadium (exempt when contained in alloy) CAS 7440-62-2.

In addition to the ingredients listed, there are certain chemicals considered by the State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as causing cancer or reproductive toxicity and for which warnings are now required: To the best of our knowledge, this product does not contain materials listed under Proposition 65.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) specifies certain emergency planning and notification requirements if extremely hazardous substances (EHS) are present in concentrations of greater than 1% at a facility, in amounts greater than the threshold planning quantity: To the best of our knowledge, this product does not contain materials listed as EHS under SARA.

If this product is discarded as a waste, it would be identified with the following hazardous waste classification under the Resource Conservation and Recovery Act (RCRA). The act specifies requirements for the management and disposal of hazardous wastes: To the best of our knowledge, this product is not a RCRA regulated material.

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## SECTION 16: OTHER INFORMATION

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### Disclaimer

The information provided in this document is believed to be accurate, but does not purport to be all inclusive and shall be used for reference purposes only. We make no warranty of merchantability or any other warranty, expressed 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 event shall Metalliage Inc. 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 Metalliage Inc. has been advised of the possibility of such damages.