



# SAFETY DATA SHEET

Issue Date 28-May-2015

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Version 5

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Code** SAC020  
**Product Name** Titanium Fines: Saw Fines, Saw Swarf, and Sponge (-20)

**UN/ID no** 3089  
**Synonyms** Titanium Fines: Saw Fines, Saw Swarf, and Sponge (-20): Includes all dry powder, fines, and dust products of titanium (Product #805RO) and titanium base alloys (Product #833)

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Alloy product manufacture

**Uses advised against**

### 1.3. Details of the supplier of the safety data sheet

**Manufacturer**  
ATI, 1000 Six PPG Place, Pittsburgh, PA 15222 USA

### 1.4. Emergency telephone number

**Emergency Telephone** Chemtrec: +1-703-741-5970

## Section 2: HAZARDS IDENTIFICATION

This material is classified per Regulation (EC) No 1272/2008.

### 2.1. Classification of the substance or mixture *Regulation (EC) No 1272/2008*

Flammable solids	Category 1
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### 2.2. Label elements

#### Emergency Overview

**Danger**

**Hazard statements**  
Flammable solids



<b>Appearance</b> Powder	<b>Physical state</b> Solid	<b>Odour</b> Odourless
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**Precautionary Statements - Prevention**

Wear protective gloves/protective clothing/eye protection  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 Ground/bond container and receiving equipment  
 If dust clouds can occur, use explosion-proof electrical/ ventilating/lighting/equipment

**Precautionary Statements - Response**

In case of fire: Use salt (NaCl) for extinction

**2.3 Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated:: Titanium dioxide, an IARC Group 2B carcinogen.

Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer.

Vanadium pentoxide (V2O5) affects eyes, skin, respiratory system.

Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

**Synonyms**

Titanium Fines: Saw Fines, Grinder Fines, Saw Swarf, and Sponge (-20): Includes all dry powder, fines, and dust products of titanium (Product #805RO) and titanium base alloys (Product #833).

Chemical Name	EC No	CAS No	Weight-%
Titanium	231-142-3	7440-32-6	50 - >99
Vanadium	231-171-1	7440-62-2	0 - 45
Molybdenum	231-107-2	7439-98-7	0 - 37
Zirconium	231-176-9	7440-67-7	0 - 35
Chromium	231-157-5	7440-47-3	0 - 18
Niobium	231-113-5	7440-03-1	0 - 15
Tin	231-141-8	7440-31-5	0 - 8
Aluminium	231-072-3	7429-90-5	0 - 8
Silicon	231-130-8	7440-21-3	0 - 3

**Section 4: FIRST AID MEASURES**

**4.1. Description of first aid measures**

**Inhalation** If excessive amounts of smoke, fume, or particulate are inhaled during processing, remove to fresh air and consult a qualified health professional.

**Skin Contact** None under normal use conditions.

**Eye contact** In the case of particles coming in contact with eyes during processing, treat as with any foreign object.

**Ingestion** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

**4.2. Most important symptoms and effects, both acute and delayed**

**Symptoms** None anticipated.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Note to doctors** Treat symptomatically.

**Section 5: FIREFIGHTING MEASURES**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Isolate large fires and allow to burn out. Smother small fires with salt (NaCl).

**Unsuitable extinguishing media**

Do not spray water on burning metal as an explosion may occur. This explosive characteristic is caused by the hydrogen and steam generated by the reaction of water with the burning material

**5.2. Special hazards arising from the substance or mixture**

Intense heat. Very fine, high surface area material resulting from processing this product may ignite spontaneously at room temperature WARNING: Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimise combustible dust hazard

**Hazardous combustion products** Titanium dioxide, an IARC Group 2B carcinogen. Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer. Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) affects eyes, skin, respiratory system. Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

**5.3. Advice for firefighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

**Section 6: ACCIDENTAL RELEASE MEASURES**

**6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions**

Use personal protective equipment as required.

**For emergency responders**

Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 170.

**6.2. Environmental precautions**

Collect spillage to prevent release to the environment.

**6.3. Methods and material for containment and cleaning up**

**Methods for containment**

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Sweep or shovel material into dry containers using non-sparking tools. Avoid creating uncontrolled dust. Skin and eye protection should be used during cleanup.

**6.4. Reference to other sections**

See Section 12: ECOLOGICAL INFORMATION.

**Section 7: HANDLING AND STORAGE**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Very fine, high surface area material resulting from grinding, buffing, polishing, or similar processes of this product may ignite spontaneously at room temperature. WARNING: Fine particles of this product may form combustible dust-air mixtures. Keep particles away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimise combustible dust hazard.

**General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). For long-term storage, keep sealed in argon-filled steel drums.

**Incompatible materials**

Dissolves in hydrofluoric acid. Ignites in the presence of fluorine. When heated above 200°C, reacts exothermically with the following: Chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, and freon.

**7.3. Specific end use(s)**

**Risk Management Methods (RMM)**

The information required is contained in this Safety Data Sheet.

**Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1. Control parameters**

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Titanium 7440-32-6	-	-	-	-	-
Vanadium 7440-62-2	-	-	-	-	Skin
Molybdenum 7439-98-7	-	-	-	TWA: 10 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>	-
Zirconium 7440-67-7	-	TWA: 5 mg/m <sup>3</sup>	-	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> Ceiling / Peak: 1 mg/m <sup>3</sup>
Chromium 7440-47-3	TWA: 2 mg/m <sup>3</sup>	STEL: 1.5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Niobium 7440-03-1	-	-	-	-	-
Tin 7440-31-5	TWA 2 mg/m <sup>3</sup> as Sn	TWA: 2 mg/m <sup>3</sup>	-	TWA: 2 mg/m <sup>3</sup>	-
Aluminium 7429-90-5	-	STEL: 30 mg/m <sup>3</sup> STEL: 12 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 4 mg/m <sup>3</sup> TWA: 1.5 mg/m <sup>3</sup>
Silicon 7440-21-3	-	STEL: 30 ppm STEL: 12 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	-	-
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Titanium 7440-32-6	-	-	-	-	-
Vanadium 7440-62-2	-	-	-	-	-
Molybdenum 7439-98-7	-	TWA: 10 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>	-	TWA: 0.5 mg/m <sup>3</sup>	-
Zirconium 7440-67-7	-	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-	TWA: 1 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>
Chromium 7440-47-3	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Niobium	-	-	-	-	TWA: 5 mg/m <sup>3</sup>

7440-03-1					TWA: 0.5 mg/m <sup>3</sup>
Tin 7440-31-5	-	TWA: 2 mg/m <sup>3</sup>	-	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Aluminium 7429-90-5	-	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 1.5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>
Silicon 7440-21-3	-	-	-	-	TWA: 10 mg/m <sup>3</sup>
<b>Chemical Name</b>	<b>Austria</b>	<b>Switzerland</b>	<b>Poland</b>	<b>Norway</b>	<b>Ireland</b>
Titanium 7440-32-6	-	-	STEL: 30 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	-	-
Vanadium 7440-62-2	STEL 1 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	-	-	TWA: 0.2 mg/m <sup>3</sup> Ceiling: 0.05 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup>	-
Molybdenum 7439-98-7	STEL 20 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	STEL: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>	-	TWA: 0.5 mg/m <sup>3</sup>
Zirconium 7440-67-7	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	STEL: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>
Chromium 7440-47-3	TWA: 2 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Niobium 7440-03-1	STEL 10 mg/m <sup>3</sup> STEL 1 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	-	-	-	-
Tin 7440-31-5	STEL 4 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>	Skin STEL: 4 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> STEL: 4 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Aluminium 7429-90-5	STEL 20 mg/m <sup>3</sup> TWA: 10 mg/m <sup>3</sup>	TWA: 3 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup> TWA: 1.2 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>
Silicon 7440-21-3	-	TWA: 3 mg/m <sup>3</sup>	-	TWA: 10 mg/m <sup>3</sup> STEL: 20 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 4 mg/m <sup>3</sup>

**Derived No Effect Level (DNEL)** No DNELs are available for this product as a whole

**Predicted No Effect Concentration (PNEC)** No PNECs are available for this product as a whole.

## 8.2. Exposure controls

**Engineering Controls** Avoid generation of uncontrolled particles.

### Personal protective equipment

#### Eye/face protection

When airborne particles may be present, appropriate eye protection is recommended. For example, tight-fitting goggles, foam-lined safety glasses or other protective equipment that shield the eyes from particles.

#### Skin and body protection

Fire/flame resistant/retardant clothing may be appropriate during hot work with the product. Cut-resistant gloves and/or protective clothing may be appropriate when sharp surfaces are present.

#### Respiratory protection

When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminate concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Environmental exposure controls** Section 6: ACCIDENTAL RELEASE MEASURES.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

#### Physical state

Solid

#### Appearance

Powder

#### Colour

metallic grey or Silver

#### Odour

Odourless

#### Odour threshold

Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	-	Not applicable
Melting point / freezing point	1600 °C / 2900 °F	
Boiling point / boiling range	-	
Flash point	-	
Evaporation rate	-	Not applicable
Flammability (solid, gas)	-	Flammable
Flammability Limit in Air		
Upper flammability limit:		-
Lower flammability limit		-
Vapour pressure	-	Not applicable
Vapour density	-	Not applicable
Specific Gravity	4.5	
Water solubility	Insoluble	
Solubility(ies)		
Partition coefficient	-	Not applicable
Autoignition temperature	-	Not applicable
Decomposition temperature	-	Not applicable
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidising properties	Not applicable	
<b>9.2. Other information</b>		
Softening point	-	
Molecular weight	-	
VOC Content (%)	Not applicable	
Density	-	
Bulk density	140lb/ft <sup>3</sup>	

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Not applicable

### 10.2. Chemical stability

Stable under normal conditions.

#### Explosion data

Sensitivity to Mechanical Impact   None.

Sensitivity to Static Discharge       May be ignited by heat, sparks or flames.

### 10.3. Possibility of hazardous reactions

#### **Hazardous polymerisation**

Hazardous polymerisation does not occur.

#### **Possibility of Hazardous Reactions**

None under normal processing.

### 10.4. Conditions to avoid

Dust formation and dust accumulation.

### 10.5. Incompatible materials

Dissolves in hydrofluoric acid. Ignites in the presence of fluorine. When heated above 200°C, reacts exothermically with the following: Chlorine, bromine, halocarbons, carbon tetrachloride, carbon tetrafluoride, and freon.

**10.6. Hazardous decomposition products**

When product is subjected to welding, burning, melting, sawing, brazing, grinding, buffing, polishing, or other similar heat-generating processes, the following potentially hazardous airborne particles and/or fumes may be generated: Titanium dioxide, an IARC Group 2B carcinogen. Hexavalent Chromium (Chromium VI) may cause lung, nasal, and/or sinus cancer. Vanadium pentoxide (V2O5) affects eyes, skin, respiratory system. Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

**Section 11: TOXICOLOGICAL INFORMATION**

**11.1. Information on toxicological effects**

**Product Information**

**Inhalation** Product not classified.  
**Eye contact** Product not classified.  
**Skin Contact** Product not classified.  
**Ingestion** Product not classified.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium	> 5000 mg/kg bw	-	-
Vanadium	> 2000 mg/kg bw	-	-
Molybdenum	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.10 mg/L
Zirconium	> 5000 mg/kg bw	-	>4.3 mg/L
Chromium	> 3400 mg/kg bw	-	> 5.41 mg/L
Niobium	> 10,000 mg/kg bw	> 2000 mg/kg bw	-
Tin	> 2000 mg/kg bw	> 2000 mg/kg bw	> 4.75 mg/L
Aluminium	15,900 mg/kg bw	-	> 1 mg/L
Silicon	> 5000 mg/kg bw	> 5000 mg/kg bw	> 2.08 mg/L

**Information on toxicological effects**

**Symptoms** None known.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Acute toxicity** Product not classified.  
**Skin corrosion/irritation** Product not classified.  
**Serious eye damage/eye irritation** Product not classified.  
**Sensitisation** Product not classified.  
**Germ cell mutagenicity** Product not classified.  
**Carcinogenicity** Product not classified.

Chemical Name	ACGIH	IARC	NTP	OSHA
Chromium 7440-47-3		Group 3		

**Reproductive toxicity** Product not classified.  
**STOT - single exposure** Product not classified.  
**STOT - repeated exposure** Product not classified.  
**Aspiration hazard** Product not classified.

**Section 12: ECOLOGICAL INFORMATION**

**12.1. Toxicity**

This product as shipped is not classified for aquatic toxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Titanium	The 72 h EC50 of titanium dioxide to <i>Pseudokirchnerella subcapitata</i> was 61 mg of TiO <sub>2</sub> /L.	The 96 h LC50 of titanium dioxide to <i>Cyprinodon variegatus</i> was greater than 10,000 mg of TiO <sub>2</sub> /L. The 96 h LC50 of titanium dioxide to <i>Pimephales promelas</i> was greater than 1,000 mg of TiO <sub>2</sub> /L.	The 3 h EC50 of titanium dioxide for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of titanium dioxide to <i>Daphnia Magna</i> was greater than 1000 mg of TiO <sub>2</sub> /L.
Vanadium	The 72 h EC50 of vanadium pentoxide to <i>Desmodesmus subspicatus</i> was 2,907 ug of V/L.	The 96 h LC50 of vanadium pentoxide to <i>Pimephales promelas</i> was 1,850 ug of V/L.	The 3 h EC50 of sodium metavanadate for activated sludge was greater than 100 mg/L.	The 48 h EC50 of sodium vanadate to <i>Daphnia magna</i> was 2,661 ug of V/L.
Molybdenum	The 72 h EC50 of sodium molybdate dihydrate to <i>Pseudokirchnerella subcapitata</i> was 362.9 mg of Mo/L.	The 96 h LC50 of sodium molybdate dihydrate to <i>Pimephales promelas</i> was 644.2 mg/L.	The 3 h EC50 of molybdenum trioxide for activated sludge was 820 mg/L.	The 48 h LC50 of sodium molybdate dihydrate to <i>Ceriodaphnia dubia</i> was 1,015 mg/L. The 48 h LC50 of sodium molybdate dihydrate to <i>Daphnia magna</i> was greater than 1,727.8 mg/L.
Zirconium	The 14 d NOEC of zirconium dichloride oxide to <i>Chlorella vulgaris</i> was greater than 102.5 mg of Zr/L.	The 96 h LL50 of zirconium to <i>Danio rerio</i> was greater than 74.03 mg/L.	-	The 48 h EC50 of zirconium dioxide to <i>Daphnia magna</i> was greater than 74.03 mg of Zr/L.
Chromium	-	-	-	-
Niobium	-	-	-	-
Tin	The 72 h EC50 of tin chloride pentahydrate to <i>Pseudokirchnerella subcapitata</i> was 9,846 ug of Sn/L.	The 7 d LOEC of tin chloride pentahydrate to <i>Pimephales promelas</i> was 827.9 ug of Sn/L.	-	The 7 d LC50 of tin chloride pentahydrate to <i>Ceriodaphnia dubia</i> was greater than 3,200 ug of Sn/L.
Aluminium	The 96-h EC50 values for reduction of biomass of <i>Pseudokirchnerella subcapitata</i> in AAP-Medium at pH 6, 7, and 8 were estimated as 20.1, 5.4, and 150.6 µg/L, respectively, for dissolved Al.	The 96 h LC50 of aluminum to <i>Oncorhynchus mykiss</i> was 7.4 mg of Al/L at pH 6.5 and 14.6 mg of Al/L at pH 7.5.	-	The 48-hr LC50 for <i>Ceriodaphnia dubia</i> exposed to Aluminium chloride increased from 0.72 to greater than 99.6 mg/L with water hardness increasing from 25 to 200 mg/L.
Silicon	The 72 h EC50 of sodium metasilicate pentahydrate to <i>Pseudokirchnerella subcapitata</i> was greater than 250 mg/L.	-	-	-

**12.2. Persistence and degradability****12.3. Bioaccumulative potential****12.4. Mobility in soil****12.5. Results of PBT and vPvB assessment**



The PBT and vPvB criteria do not apply to inorganic substances.

**12.6. Other adverse effects**

**Section 13: DISPOSAL CONSIDERATIONS**

**13.1. Waste treatment methods**

<b>Waste from residues/unused products</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.
<b>Contaminated packaging</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Section 14: TRANSPORT INFORMATION**

**IMDG**

<b>14.1 UN/ID no</b>	3089
<b>14.2 Proper shipping name</b>	Metal powders, flammable, n.o.s. (Titanium)
<b>14.3 Hazard Class</b>	4.1
<b>14.4 Packing Group</b>	II
<b>14.5 Marine pollutant</b>	Not applicable
<b>14.6 Special Provisions</b>	IB8, IP2, IP4, T3, TP33
<b>14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code</b>	Not applicable

**RID**

<b>14.1 UN/ID no</b>	3089
<b>14.2 Proper shipping name</b>	Metal powders, flammable, n.o.s. (Titanium)
<b>14.3 Hazard Class</b>	4.1
<b>14.4 Packing Group</b>	II
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	IB8, IP2, IP4, T3, TP33

**ADR**

<b>14.1 UN/ID no</b>	3089
<b>14.2 Proper shipping name</b>	Metal powders, flammable, n.o.s. (Titanium)
<b>14.3 Hazard Class</b>	4.1
<b>Subsidiary hazard class</b>	6.1
<b>14.4 Packing Group</b>	II
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	IB8, IP2, IP4, T3, TP33

**ICAO (air)**

<b>14.1 UN/ID no</b>	3089
<b>14.2 Proper shipping name</b>	Metal powders, flammable, n.o.s. (Titanium)
<b>14.3 Hazard Class</b>	4.1
<b>14.4 Packing Group</b>	II
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	IB8, IP2, IP4, T3, TP33

**IATA**

<b>14.1 UN/ID no</b>	3089
<b>14.2 Proper shipping name</b>	Metal powders, flammable, n.o.s. (Titanium)
<b>14.3 Hazard Class</b>	4.1
<b>14.4 Packing Group</b>	II

<b>Description</b>	.
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	IB8, IP2, IP4, T3, TP33 170 ERG Code

## Section 15: REGULATORY INFORMATION

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Name	French RG number	Title
Titanium 7440-32-6	-	-
Vanadium 7440-62-2	RG 66	-
Molybdenum 7439-98-7	-	-
Zirconium 7440-67-7	-	-
Chromium 7440-47-3	RG 10	-
Niobium 7440-03-1	-	-
Tin 7440-31-5	-	-
Aluminium 7429-90-5	RG 32 RG 16, RG 16bis	-
Silicon 7440-21-3	-	-

### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

#### Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

#### International Inventories

<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Not Listed
<b>AICS</b>	Complies

#### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

### 15.2. Chemical safety assessment

No chemical safety assessment has been performed for this product.

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**Section 16: OTHER INFORMATION**

**Issue Date** 28-May-2015  
**Revision Date** 01-Jul-2020  
**Revision Note** SDS sections updated: 1, 2, 3, 5, 6, 7, 9, 10, 15, 16.

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**Note:**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**

**Additional information available from:** Safety data sheets and labels available at [ATImetals.com](http://ATImetals.com)