SAFETY DATA SHEET

Issue Date 28-May-2015 **Revision Date** 05-Aug-2016 **Version** 6

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

1.1. Product identifier

Product Code PM009
Product Name Titanium Alloy Powder Flammable

UN/ID no 3089
Synonyms Titanium Alloy Powder Flammable: - CP Ti Powder, Ti-6Al-4V Powder, Ti-6Al-2Sn-4Zr-2Mo Powder, Ti-5Al-5v-5Mo-3Cr Powder, ATI 425 Powder, TI-48Al-2Cr-2Nb Powder, Ti-6Al-4V-1B Powder, TNM Powder

Contains Cobalt, Nickel

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

Recommended Use Titanium alloy product manufacture

Uses advised against

1.3. Details of the supplier of the safety data sheet

Manufacturer Address
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

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flammable solids	Category 1

2.2. Label elements

Emergency Overview

Danger

Hazard statements
Flammable solids

Appearance Powder **Physical state** Solid **Odour** Odourless

Precautionary Statements - Prevention

Wear protective gloves/protective clothing/eye protection/face 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
In case of fire: Use salt (NaCl) or class D dry powder 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 Alloy Powder Flammable: - CP Ti Powder, Ti-6Al-4V Powder, Ti-6Al-2Sn-4Zr-2Mo Powder, Ti-5Al-5v-5Mo-3Cr Powder, ATI 425 Powder, Tl-48Al-2Cr-2Nb Powder, Ti-6Al-4V-1B Powder, TNM Powder.

Chemical Name	EC No	CAS No	Weight-%
Titanium	231-142-3	7440-32-6	50-100
Aluminium	231-072-3	7429-90-5	0-40
Niobium	231-113-5	7440-03-1	0 - 27
Vanadium	231-171-1	7440-62-2	0-10
Tungsten	231-143-9	7440-33-7	0 - 10
Molybdenum	231-107-2	7439-98-7	0 - 10
Iron	231-096-4	7439-89-6	0-10
Chromium	231-157-5	7440-47-3	0-10
Zirconium	231-176-9	7440-67-7	0-5
Yttrium	231-174-8	7440-65-5	0-3
Tin	231-141-8	7440-31-5	0-3
Boron	231-151-2	7440-42-8	0 - 1

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: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media
Smother with salt (NaCl) or class D dry powder fire extinguisher.

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 grinding, buffing, polishing, or similar processes of this product may ignite spontaneously at room temperature WARNING: Fine particles resulting from grinding, buffing, polishing, or similar processes 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_2O_5) affects eyes, skin, respiratory system. Soluble molybdenum compounds such as molybdenum trioxide may cause lung irritation.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

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 up and shovel into suitable containers. Avoid creating uncontrolled dust.

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 resulting from grinding, buffing, polishing, or similar processes 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 chips, turnings, dust, and other small particles 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	-	-	-	-	-
Aluminium 7429-90-5	-	STEL: 30 mg/m³ STEL: 12 mg/m³ TWA: 10 mg/m³ TWA: 4 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 4 mg/m³ TWA: 1.5 mg/m³
Niobium 7440-03-1	-	-	-	-	-
Vanadium 7440-62-2	-	-	-	-	Skin
Tungsten 7440-33-7	-	STEL: 10 mg/m³ TWA: 5 mg/m³	-	STEL: 10 mg/m³ TWA: 5 mg/m³	-
Molybdenum 7439-98-7	-	-	-	TWA: 10 mg/m³ TWA: 3 mg/m³	-
Iron 7439-89-6	-	-	-	-	-
Chromium 7440-47-3	TWA: 2 mg/m³	STEL: 1.5 mg/m³ TWA: 0.5 mg/m³	TWA: 2 mg/m³	TWA: 2 mg/m³	TWA: 2 mg/m³
Zirconium 7440-67-7	-	TWA: 5 mg/m³	-	STEL: 10 mg/m³ TWA: 5 mg/m³	TWA: 1 mg/m³ Ceiling / Peak: 1 mg/m³
Yttrium 7440-65-5	-	STEL: 3 mg/m³ TWA: 1 mg/m³	TWA: 1 mg/m³	TWA: 1 mg/m³	-
Tin 7440-31-5	TWA 2 mg/m³ as Sn	TWA: 2 mg/m³	-	TWA: 2 mg/m³	-
Boron 7440-42-8	-	-	-	-	-
Chemical Name	**Italy**	**Portugal**	**Netherlands**	**Finland**	**Denmark**
Titanium 7440-32-6	-	-	-	-	-
Aluminium 7429-90-5	-	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 0.05 mg/m³	TWA: 1.5 mg/m³	TWA: 5 mg/m³ TWA: 2 mg/m³
Niobium 7440-03-1	-	-	-	-	TWA: 5 mg/m³ TWA: 0.5 mg/m³
Vanadium 7440-62-2	-	-	-	-	-
Tungsten 7440-33-7	-	STEL: 10 mg/m³ TWA: 5 mg/m³	-	TWA: 5 mg/m³	TWA: 5 mg/m³
Molybdenum 7439-98-7	-	TWA: 10 mg/m³ TWA: 3 mg/m³	-	TWA: 0.5 mg/m³	-
Iron	-	-	-	-	-

7439-89-6					
Chromium 7440-47-3	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³
Zirconium 7440-67-7	-	STEL: 10 mg/m³ TWA: 5 mg/m³	-	TWA: 1 mg/m³	TWA: 5 mg/m³
Yttrium 7440-65-5	-	TWA: 1 mg/m³	-	TWA: 1 mg/m³	TWA: 1 mg/m³
Tin 7440-31-5	-	TWA: 2 mg/m³	-	TWA: 2 mg/m³	TWA: 2 mg/m³
Boron 7440-42-8	-	-	-	-	-
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Titanium 7440-32-6	-	-	STEL: 30 mg/m³ TWA: 10 mg/m³	-	-
Aluminium 7429-90-5	STEL 20 mg/m³ TWA: 10 mg/m³	TWA: 3 mg/m³	TWA: 2.5 mg/m³ TWA: 1.2 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 1 mg/m³ TWA: 5 mg/m³
Niobium 7440-03-1	STEL 10 mg/m³ STEL 1 mg/m³ TWA: 5 mg/m³ TWA: 0.5 mg/m³	-	-	-	-
Vanadium 7440-62-2	STEL 1 mg/m³ TWA: 0.5 mg/m³	-	-	TWA: 0.2 mg/m³ Ceiling: 0.05 mg/m³ STEL: 0.6 mg/m³	-
Tungsten 7440-33-7	STEL 10 mg/m³ TWA: 5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³
Molybdenum 7439-98-7	STEL 20 mg/m³ TWA: 10 mg/m³	TWA: 10 mg/m³	STEL: 10 mg/m³ TWA: 4 mg/m³	-	TWA: 0.5 mg/m³
Iron 7439-89-6	-	-	-	-	-
Chromium 7440-47-3	TWA: 2 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	TWA: 2 mg/m³
Zirconium 7440-67-7	TWA: 5 mg/m³	TWA: 5 mg/m³	STEL: 10 mg/m³ TWA: 5 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³
Yttrium 7440-65-5	STEL 10 mg/m³ TWA: 1 mg/m³	-	TWA: 1 mg/m³	TWA: 1 mg/m³ STEL: 3 mg/m³	TWA: 1 mg/m³ STEL: 3 mg/m³
Tin 7440-31-5	STEL 4 mg/m³ TWA: 2 mg/m³	Skin STEL: 4 mg/m³ TWA: 2 mg/m³	TWA: 2 mg/m³	TWA: 2 mg/m³ STEL: 4 mg/m³	TWA: 2 mg/m³
Boron 7440-42-8	-	-	-	-	-

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 particulates.

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 Wear fire/flame resistant/retardant clothing.

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	**Odour**	Odourless
Colour	metallic grey Silver	**Odour threshold**	Not applicable

Property	**Values**	**Remarks • Method**
pH	-	
Melting point/freezing point	1320-1400 °C / 2560-2800 °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	8.0-8.5	
Water solubility	Insoluble	
Solubility(ies)		Not applicable
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	

9.2. Other information

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	-

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	None.

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

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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	-	-
Aluminium	15,900 mg/kg bw	-	> 1 mg/L
Niobium	> 10,000 mg/kg bw	> 2000 mg/kg bw	-
Vanadium	> 2000 mg/kg bw	-	-
Tungsten	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.4 mg/L
Molybdenum	> 2000 mg/kg bw	> 2000 mg/kg bw	> 5.10 mg/L
Iron	98,600 mg/kg bw	-	> 0.25 mg/L
Chromium	> 3400 mg/kg bw	-	> 5.41 mg/L
Zirconium	> 5000 mg/kg bw	-	>4.3 mg/L
Yttrium	> 5000 mg/kg bw	-	> 5.09 mg/L
Tin	> 2000 mg/kg bw	> 2000 mg/kg bw	> 4.75 mg/L
Boron	> 2000 mg/kg bw	-	> 5.08 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 Micro-organisms	Crustacea
Titanium	The 72 h EC50 of titanium dioxide to Pseudokirchnerella subcapitata was 61 mg of TiO2/L.	The 96 h LC50 of titanium dioxide to Cyprinodon variegatus was greater than 10,000 mg of TiO2/L. The 96 h LC50 of titanium dioxide to Pimephales promelas was greater than 1,000 mg of TiO2/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 Daphnia Magna was greater than 1000 mg of TiO2/L.
Aluminium	The 96-h EC50 values for reduction of biomass of Pseudokirchneriella subcapitata 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 Oncorhynchus mykiss 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 Ceriodaphnia dubia 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.
Niobium	-	-	-	-
Vanadium	The 72 h EC50 of vanadium pentoxide to Desmodesmus subspicatus was 2,907 ug of V/L.	The 96 h LC50 of vanadium pentoxide to Pimephales promelas 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 Daphnia magna was 2,661 ug of V/L.
Tungsten	The 72 h EC50 of sodium tungstate to Pseudokirchnerella subcapitata was 31.0 mg of W/L.	The 96 h LC50 of sodium tungstate to Danio rerio was greater than 106 mg of W/L.	The 30 min EC50 of sodium tungstate for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of sodium tungstate to Daphnia magna was greater than 96 mg of W/L.
Molybdenum	The 72 h EC50 of sodium molybdate dihydrate to Pseudokirchneriella subcapitata was 362.9 mg of Mo/L.	The 96 h LC50 of sodium molybdate dihydrate to Pimephales promelas 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 Ceriodaphnia dubia was 1,015 mg/L. The 48 h LC50 of sodium molybdate dihydrate to Daphnia magna was greater than 1,727.8 mg/L.
Iron	-	The 96 h LC50 of 50% iron oxide black in water to Danio rerio was greater than 10,000 mg/L.	The 3 h EC50 of iron oxide for activated sludge was greater than 10,000 mg/L.	The 48 h EC50 of iron oxide to Daphnia magna was greater than 100 mg/L.
Chromium	-	-	-	-
Zirconium	The 14 d NOEC of zirconium dichloride oxide to Chlorella vulgaris was greater than 102.5 mg of Zr/L.	The 96 h LL50 of zirconium to Danio rerio was greater than 74.03 mg/L.	-	The 48 h EC50 of zirconium dioxide to Daphnia magna was greater than 74.03 mg of Zr/L.
Yttrium	-	The 96 h LL50 of Yttrium oxide to Danio rerio was greater than 100 mg/L.	The 3 h NOEC of Yttrium oxide for activated sludge was greater than 1000 mg/L.	The 48 h LL50 of Yttrium oxide to Daphnia magna was greater than 100 mg/L.
Tin	The 72 h EC50 of tin chloride pentahydrate to Pseudokirchnerella subcapitata was 9,846 ug of Sn/L	The 7 d LOEC of tin chloride pentahydrate to Pimephales promelas was 827.9 ug of Sn/L	-	The 7 d LC50 of tin chloride pentahydrate to Ceriodaphnia dubia was greater than 3,200 ug of Sn/L.
Boron	The 72-h EC50 value for	The 96-hr LC50 for	The 3 h NOEC of boric	The 48-hr LC50 for

	reduction of biomass of Pseudokirchneriella subcapitata exposed to Boric acid at pH 7.5 to 8.3 was 40.2 mg/L.	Pimephales promelas exposed to Boric acid (82%)/borax (18%) mixture was 79.7 mg/L with water hardness of 91 mg/L and water pH of 8.0.	acid for activated sludge ranged from 17.5 to 20 mg/L.	Ceriodaphnia dubia exposed to Boric acid/borax mixture ranged from 91 to 165 mg/L with pH ranging from 6.7 to 8.4.

12.2. Persistence and degradability

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12.3. Bioaccumulative potential

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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

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

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN/ID no 3089
14.2 Proper shipping name Metal powders, flammable, n.o.s. (Titanium)
14.3 Hazard Class 4.1
14.4 Packing Group II
14.5 Marine pollutant Not applicable
14.6 Special Provisions IB8, IP2, IP4, T3, TP33
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

RID

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

ADR

14.1 UN/ID no 3089
14.2 Proper shipping name Metal powders, flammable, n.o.s. (Titanium)
14.3 Hazard Class 4.1
14.4 Packing Group II
14.5 Environmental hazard Not applicable

14.6 Special Provisions IB8, IP2, IP4, T3, TP33

ICAO (air)

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

IATA

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

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	-	-
Aluminium 7429-90-5	RG 32 RG 16,RG 16bis	-
Niobium 7440-03-1	-	-
Vanadium 7440-62-2	RG 66	-
Tungsten 7440-33-7	-	-
Molybdenum 7439-98-7	-	-
Iron 7439-89-6	RG 44,RG 44bis,RG 94	-
Chromium 7440-47-3	RG 10	-
Zirconium 7440-67-7	-	-
Yttrium 7440-65-5	-	-
Tin 7440-31-5	-	-
Boron 7440-42-8	-	-

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

DSL/NDSL Complies
EINECS/ELINCS Complies
ENCS Complies

IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	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.

Section 16: OTHER INFORMATION

Issue Date	28-May-2015
Revision Date	05-Aug-2016
Revision Note	Updated Section(s): 14.

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