TIMETAL CP Grade Titanium
Safety Data Sheet (SDS)

Section 1 – Identification

1(a) Product Identifier used on Label: TIMETAL CP Grade Titanium

1(b) Other means of identification: TIMETAL 35A-TIMETAL 100A, TIMETAL Code 12 (CP grades)

1(c) Recommended use of the chemical and restrictions on use: Steel and alloy productions use, casting, welding, sieving, stamping, forging, extrusion, hot and cold rolling, drawing, cutting, pressing and powder processing.

1(d) Name, address, and telephone number:

TIMET
100 Titanium Way
Toronto, OH 43964

Phone number : 740-537-5616 and/or 740-537-5672

1(e) Emergency phone number: Chemtrec: 1-800-424-9300 *(within United States) or +* **703-527-3887** *(outside United States)*

NOTE: Chemtrec emergency numbers should be used only in the event of chemical emergencies involving spills, leaks, fire, exposure, or in the event of an accident involving chemicals.

Section 2 – Hazard(s) Identification

2(a) Classification of the chemical: TIMETAL CP Grade Titanium is considered an article under Reach regulation (REACH REGULATION (EC) No 1907/2006) and is not subject to classification under CLP regulation (REGULATION (EC) No 1272/2008). This Safety Data Sheet is written for Titanium alloys supplied in solid form as articles. To fulfill the requirements of REACH the titanium sponge and alloying substances that are supplied into the EU or manufactured in the EU are registered separately in accordance with their obligated band deadlines.

However, **TIMETAL CP Grade Titanium** is not exempt as an article under OSHA's Hazard Communication Standard (29 CFR 1910.1200) due to its downstream use, thus this product is considered a mixture and a hazardous material. Therefore, the categories of Health Hazards as defined in "GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal word, hazard statement(s), symbols and precautionary statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
NA	Combustible Dust	**Warning**	If converted to small particles during further processing, handling, or by other means, may form combustible dust concentrations in air.

Precautionary Statement(s): NA

2(c) Hazards not otherwise classified: None Known

2(d) Unknown acute toxicity statement (mixture): None Known

Section 3 – Composition/Information on Ingredients

3(a-c) Chemical name, common name (synonyms), CAS number and other identifiers, and concentration:

Chemical Name	CAS Number	EC Number	% weight
Titanium	7440-32-6	231-142-3	100

EC - European Community
CAS - Chemical Abstract Service

Section 4 – First-aid Measures

4(a) Description of necessary measures:

- **Inhalation: TIMETAL CP Grade Titanium** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if inhaled: Get medical advice/attention if you feel unwell.
- **Eye Contact: TIMETAL CP Grade Titanium** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. Get medical advice/attention if you feel unwell.
- **Skin Contact: TIMETAL CP Grade Titanium** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), Get medical advice/attention if you feel unwell.
- **Ingestion: TIMETAL CP Grade Titanium** as sold/shipped is not a likely form of exposure. However during further processing (welding, grinding, burning, etc.), if swallowed: Get medical advice/attention if you feel unwell.

4(b) Most important symptoms/effects, acute and delayed (chronic):

- **Inhalation: TIMETAL CP Grade Titanium** as sold/shipped is not likely to present an acute or chronic health effect.
- **Eye: TIMETAL CP Grade Titanium** as sold/shipped is not likely to present an acute or chronic health effect.
- **Skin: TIMETAL CP Grade Titanium** as sold/shipped is not likely to present an acute or chronic health effect.
- **Ingestion: TIMETAL CP Grade Titanium** as sold/shipped is not likely to present an acute or chronic health effect.

Section 4 – First-aid Measures (continued)

However during further processing (welding, grinding, burning, etc.) individual components may illicit an acute or chronic health effect. Refer to Section 11-Toxicological Information.

4(c) Immediate Medical Attention and Special Treatment: None Known

Section 5 – Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Not Applicable for **TIMETAL CP Grade Titanium** as sold/shipped. Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards arising from the chemical: Not Applicable for **TIMETAL CP Grade Titanium** as sold/shipped. When burned, toxic smoke, fume and titanium oxides may be emitted. Titanium dust, fines, turnings and small pieces may ignite more easily under favorable conditions. Finely divided dusts may be explosive. Do not use water; treat as a Class "D" fire.

5(c) Special protective equipment and precautions for fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Not Applicable for **TIMETAL CP Grade Titanium** as sold/shipped. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust.

6(b) Methods and materials for containment and clean up: Not Applicable for **TIMETAL CP Grade Titanium** as sold/shipped. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Section 7 - Handling and Storage

7(a) Precautions for safe handling: Not Applicable for **TIMETAL CP Grade Titanium** as sold/shipped, however further processing (welding, burning, grinding, etc.) with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Do not breathe metal fumes and/or dust. Cut resistant gloves and sleeves should be worn when working with CP Grade Titanium.

7(b) Conditions for safe storage, including any incompatibilities: Store away from open flames or sparks.

Section 8 - Exposure Controls / Personal Protection

8(a) Occupational Exposure Limits (OELs): TIMETAL CP Grade Titanium as sold/shipped in its physical form does not present an inhalation, ingestion or contact hazard, nor would any of the following exposure data apply. However, operations such as burning, welding (high temperature), sawing, brazing, machining, grinding, etc. may produce fumes and/or particulates. The following exposure limits are offered as reference for an experienced industrial hygienist to review.

Ingredients	OSHA PEL [1]	ACGIH TLV [2]	NIOSH REL [3]	IDLH [4]
Titanium	15 mg/m³ (as TiO_2, total dust)	10 mg/m³ (as TiO_2)	LFC[5] (as TiO_2)	5,000 mg/m³ (as TiO_2)

NE - None Established

1. OSHA Permissible Exposure Limits (PELs) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A (C) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. A "skin" notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLVs are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL) - Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.
5. LFC – Lowest Feasible Concentration, Refer to Section 11, Toxicological Information.

8(b) Appropriate Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust is necessary for use in enclosed or confined spaces. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits.

Section 8 - Exposure Controls / Personal Protection (continued)

8(c) Individual Protection Measures:

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

  Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.
- **Eyes**: Wear appropriate eye protection to prevent eye contact. For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use safety glasses to prevent eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.
- **Skin**: Wear appropriate personal protective clothing to prevent skin contact. Cut resistant gloves and sleeves should be worn when working with products. For operations which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, and gloves to prevent skin contact. Protective gloves should be worn as required for welding, burning or handling operations. Contaminated work clothing must not be allowed out of the workplace.
- **Other protective equipment**: An eyewash fountain and deluge shower should be readily available in the work area.

Section 9 - Physical and Chemical Properties

9(a) Appearance (physical state, color, etc.): Solid metal

9(b) Odor: Odorless

9(c) Odor Threshold: NA

9(d) pH: NA

9(e) Melting Point/Freezing Point: >2800°F

9(f) Initial Boiling Point and Boiling Range: ND

9(g) Flash Point: NA

9(h) Evaporation Rate: NA

9(i) Flammability (solid, gas): Non-flammable

9(j) Upper/lower Flammability or Explosive Limits: NA

9(k) Vapor Pressure: NA

9(l) Vapor Density (Air = 1): NA

9(m) Relative Density: 5-6 (H_20 = 1)

9(n) Solubility(ies): Water Insoluble

9(o) Partition Coefficient n-octanol/water: ND

9(p) Auto-ignition Temperature: NA

9(q) Decomposition Temperature: ND

9(r) Viscosity: NA

NA - Not Applicable
ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND) for product in a solid form. Do not use water on molten metal.

10(b) Chemical Stability: Stable under normal storage and handling conditions.

10(c) Possibility of hazardous reaction: None Known

10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite.

10(e) Incompatible Materials: Molten metal may react violently with water. Contact with water or steam above 704°C also will cause a violent reaction.

10(f) Hazardous Decomposition Products: Thermal oxidative decomposition of product can produce fumes containing metal oxides.

Section 11 - Toxicological Information

11(a-e) Information on Toxicological Effects: The toxicological data listed below are presented regardless to classification criteria.

a. No LC_{50} or LD_{50} has been established for **TIMETAL CP Grade Titanium**. The following data has been determined for the component:

- **Titanium Dioxide:** LD_{50} > 10,000 mg/kg (Oral/Rat); LC_{50} > 6.82 mg/l (Inhalation/Rat)

b. No Skin (Dermal) Irritation data available for **TIMETAL CP Grade Titanium** as a as a mixture or its component.

c. No Eye Irritation data available for **TIMETAL CP Grade Titanium** as a mixture or its components.

d. No Skin (Dermal) Sensitization data available for **TIMETAL CP Grade Titanium** as a mixture or its component.

e. No Respiratory Sensitization data available for **TIMETAL CP Grade Titanium** as a mixture or its component.

f. No Germ Cell Mutagenicity data available for **TIMETAL CP Grade Titanium** as a mixture or its component.

Section 11 - Toxicological Information (continued)

11 Information on toxicological effects (continued):

g. Carcinogenicity: IARC, NTP, and OSHA do not list **TIMETAL CP Grade Titanium** as carcinogens. The following Carcinogenicity information was found for the component:

- **Welding Fumes -** IARC Group 2B carcinogen, a mixture that is possibly carcinogenic to humans.
- **Titanium Dioxide -** According to the experimental studies and reviewed IUCLID toxicological data, Rats (but not mice) exposed to ultrafine TiO_2 particles at 10 mg/m3 developed lung tumors; probably results from inhibited particle clearance from lung. Titanium and titanium compounds, for the most part, have been considered virtually inert and not highly toxic to man. Titanium dioxide has recently been considered a potential occupational carcinogen based on inhalation studies on rats. Results indicated increases in bronchioloalveolar adenomas and squamous cell carcinomas. As a result, NIOSH recommends exposure to titanium dioxide be reduced to the lowest feasible concentration (LFC).

h. No Toxic Reproduction data available for **TIMETAL CP Grade Titanium** as a mixture or its component.

i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **TIMETAL CP Grade Titanium** as a mixture or its components.

j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **TIMETAL CP Grade Titanium** as a whole. The following STOT following Repeated Exposure data was found for the component:

- **Titanium Dioxide:** Inflammatory lesions in rat lungs produced by 3-month exposures to either 22.3 mg/m^3 of ultrafine TiO2; lesions "regressed" during a 1-year period following cessation of exposure.

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s) and potential resultant components from further processing:

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract.
- **Eye:** Excessive exposure to high concentrations of metal dust may cause irritation to the eyes.
- **Skin:** Skin contact with metal dusts may cause irritation. Skin contact with metallic fumes and dusts may cause physical abrasion.
- **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of metal dust may cause nausea or vomiting.

Acute Effects by component:

- **Titanium and titanium dioxides:** Not Reported / Not Classified

Delayed (chronic) Effects by component:

- **Titanium and titanium dioxides:** Titanium Oxide accumulates in the lungs – and over time mostly in alveoli and macrophages. Exposure by inhalation route should be reduced to lowest levels to reduce accumulation in lungs. This accumulation is apparently responsible for carcinogenesis in rats only (no such response in mouse or hamster).

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No Data Available for **TIMETAL CP Grade Titanium** as sold/shipped. However, individual components of the product when processed have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

12(b) Persistence & Degradability: No Data Available for **TIMETAL CP Grade Titanium** as sold/shipped or individual components.

12(c) Bioaccumulative Potential: No Data Available for **TIMETAL CP Grade Titanium** as sold/shipped or individual components.

12(d) Mobility (in soil): No data available for **TIMETAL CP Grade Titanium** as sold/shipped. However, individual components of the product have been found to be absorbed by plants from soil.

12(e) Other adverse effects: None Known

Additional Information:

Hazard Category: Not Reported **Signal Word:** No Signal Word

Hazard Symbol: No Symbol

Hazard Statement: No Statement

Section 13 - Disposal Considerations

Disposal: Scrap should be recycled whenever possible. Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state or local regulations.

Container Cleaning and Disposal: This product as supplied does not possess characteristics which qualify as hazardous waste. Following processing and use, resulting titanium powders, fines and/or swarf will impact cleaning and disposal and should be evaluated by a competent environmental professional.

Please note this information is for TIMETAL CP Grade Titanium in its original form. Any alterations can void this information.

Section 14 - Transport Information

14 (a-g) Transportation Information:

US Department of Transportation (DOT) under 49 CFR 172.101 **does not** regulate **TIMETAL CP Grade Titanium** as a hazardous material. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Not Applicable (NA) **Shipping Symbols:** NA **Hazard Class:** NA **UN No.:** NA **Packing Group:** NA **DOT/ IMO Label:** NA **Special Provisions (172.102):** NA	**Packaging Authorizations** **a) Exceptions:** NA **b) Group:** NA **c) Authorization:** NA	**Quantity Limitations** **a) Passenger, Aircraft, or Railcar:** NA **b) Cargo Aircraft Only:** NA **Vessel Stowage Requirements** **a) Vessel Stowage:** NA **b) Other:** NA **DOT Reportable Quantities**: NA

International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Regulations Concerning the International Carriage of Dangerous Goods by Road (ADR): does not regulate **TIMETAL CP Grade Titanium** as a hazardous material.

Shipping Name: Not Applicable (NA) **Classification Code:** NA **UN No.:** NA **Packing Group:** NA **ADR Label:** NA **Special Provisions:** NA **Limited Quantities:** NA	**Packaging** **a) Packing Instructions:** NA **b) Special Packing Provisions:** NA **c) Mixed Packing Provisions:** NA	**Portable Tanks & Bulk Containers** **a) Instructions:** NA **b) Special Provisions:** NA

International Air Transport Association (IATA) does not regulate **TIMETAL CP Grade Titanium** as a hazardous material.

Shipping Name: Not Applicable (NA) **Class/Division:** NA **Hazard Label (s):** NA **UN No.:** NA **Packing Group:** NA **Excepted Quantities (EQ):** NA	**Passenger & Cargo Aircraft Limited Quantity (EQ)**		**Cargo Aircraft Only** **Pkg Inst:** NA **Max Net Qty/Pkg:** NA	**Special Provisions:** NA **ERG Code:** NA
	Pkg Inst: NA **Max Net Qty/Pkg:** NA	**Pkg Inst:** NA **Max Net Qty/Pkg:** NA		

Pkg Inst – Packing Instructions Max Net Qty/Pkg – Maximum Net Quantity per Package ERG – Emergency Response Drill Code

Transport Dangerous Goods (TDG) Classification: TIMETAL CP Grade Titanium does not have a TDG classification.

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to a TIMET product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product, **TIMETAL CP Grade Titanium**, and/or its constituent is subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product, **TIMETAL CP Grade Titanium** as a whole is not listed. However, the individual component of the product is listed: Refer to Section 8, Exposure Controls and Personal Protection.

EPA Regulations: The product, **TIMETAL CP Grade Titanium** is not listed as a whole or its component.

SARA 311/312 Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Regulations Key:

CAA	Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)
CWA	Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])
RCRA	Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)
SARA	Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and Section 313 Toxic Chemicals (42 USC Secs. 11023, 13106; 40 CFR Sec. 372.65 [as of 6/30/05])
TSCA	Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])
SDWA	Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

Section 313 Supplier Notification: The product, **TIMETAL CP Grade Titanium does not** contain toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act and 40 CFR part 372.

State Regulations: The product, **TIMETAL CP Grade Titanium** as a whole are not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: None

California Prop. 65: Does not contain elements known to the State of California to cause cancer or reproductive toxicity.

Section 15 - Regulatory Information (continued)

State Regulations (continued):

New Jersey: Contains regulated material in the following categories:

- Hazardous Substance: Titanium.

Minnesota: None

Massachusetts: None

Other Regulations:

WHMIS Classification (Canadian): The product, **TIMETAL CP Grade Titanium** is not listed as a whole or its component.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: AM Health and Safety, Inc., rev by TIMET

Original Issue Date: 2/29/2008 **Revised Date:** 10/1/2014

Additional Information:

Hazardous Material Identification System (HMIS) Classification

Health Hazard	1
Fire Hazard	0
Physical Hazard	0

HEALTH= **1**, Denotes possible chronic hazard if airborne dusts or fumes are generated Irritation or minor reversible injury possible.

FIRE= **0**, Materials that will not burn.

PHYSICAL HAZARD= **0**, Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.

National Fire Protection Association (NFPA)

HEALTH = **1**, Exposure could cause irritation but only minor residual injury even if no treatment is given.

FLAMMABILITY = **0,** Materials that will not burn.

INSTABILITY = **0**, Normally stable, even under fire exposure conditions, and are not reactive with water.

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	**NIF**	No Information Found
BEIs	Biological Exposure Indices	**NIOSH**	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	**NTP**	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	**ORC**	Organization Resources Counselors
CFR	Code of Federal Regulations	**OSHA**	Occupational Safety and Health Administration
CNS	Central Nervous System	**PEL**	Permissible Exposure Limit
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	**PNOR**	Particulate Not Otherwise Regulated
HMIS	Hazardous Materials Identification System	**PNOC**	Particulate Not Otherwise Classified
IARC	International Agency for Research on Cancer	**PPE**	Personal Protective Equipment
LC50	Median Lethal Concentration	**ppm**	parts per million
LD50	Median Lethal Dose	**RCRA**	Resource Conservation and Recovery Act
LD_{Lo}	Lowest Dose to have killed animals or humans	**RTECS**	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	**SARA**	Superfund Amendment and Reauthorization Act
LOEL	Lowest Observed Effect Level	**SCBA**	Self-contained Breathing Apparatus
LOAEC	Lowest Observable Adverse Effect Concentration	**SDS**	Safety Data Sheet
$\mu g/m^3$	microgram per cubic meter of air	**STEL**	Short-term Exposure Limit
mg/m^3	milligram per cubic meter of air	**TLV**	Threshold Limit Value
mppcf	million particles per cubic foot	**TWA**	Time-weighted Average
MSHA	Mine Safety and Health Administration	**UEL**	Upper Explosive Limit
NFPA	National Fire Protection Association		

Disclaimer: Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. This information relates to the specific material designed and may not be valid for such material used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date complied. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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This information is taken from sources or based upon data believed to be reliable. However, TIMET and AM Health and Safety, Inc. makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.