



MATERIAL SAFETY DATA SHEET

Form WI04-11A Rev. 1

Part Number(s):
03-XXX-XX



Product Name: Resolve Wire

Release Date: November 27,
2006

1. Product and Company Identification

Trade Name & Synonyms BIII CNA™	MSDS Code Number Refer to part number
Chemical Name Titanium Alloy	Manufacture / Distributor GAC International Inc.
C.A.S. Number 7440-32-6	Address 355 Knickerbocker Ave. Bohemia, NY USA 11716
Grades or Minor Variant Identities NA	Information Telephone Number 1-631-419-1700
Product Use (for Canada) NA	Emergency Telephone Number 1-631-419-1700

2. Composition of Ingredients

Hazardous Components	THRESHOLD LIMIT	C.A.S. Number	Exposure Limits	%
Beta 3 Alloy: Ti 70-80% Zr 5-10% Sn 4-8% Mo 10-20%				
Titanium Ti	10	7440-32-6	5*	NA
Zirconium Zr	5	7440-67-7	5	NA
Tin Sn	2	7440-31-5	2	NA
Molybdenum Mo	10◇	7439-98-7	5*	NA
◇ = Exposure limit for metal or oxide of the metal				
* = Respirable fraction of dust				

3. Hazard Identification

Emergency Overview

Articles made from titanium or titanium alloys are not ignitable, corrosive, or reactive. Dust and powders are a moderate fire and explosive hazard when exposed to heat, flame, electric current, or static electricity.

For purpose of this MSDS, occupational exposure to alloys is taken to mean dusts, fumes, or solutions containing metals than become airborne or can spill on skin or in the eye. Occupational exposure to alloys does not include solid products, (i.e., ingots or castings) provided no particle generating operations, such as grinding or cutting, occur. In most industrial situations, the significant routes of exposure would include inhalation, skin & eye contact. Titanium is considered relatively nontoxic.

Routes of Exposure	Signs and Symptoms	Single, Repeated, or Lifetime Exposure	Severity (Mild, Moderate, Severe)	Acute and Chronic Health Effect(s)	Target Organ(s)
Eye	NA	NA	NA	NA	NA
Skin	NA	NA	NA	NA	NA
Inhalation	NA	NA	NA	NA	NA
Ingestion	NA	NA	NA	NA	NA
Other	NA	NA	NA	NA	NA

Medical Conditions Aggravated by Exposure

NA

Carcinogenicity (IARC, NTP)

NA

Potential Environmental Effects

NA



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4. First Aid Measures

Routes of Exposure	First Aid Instructions	Immediate Medical Attention	Delayed Effects
Eye	Flush eyes with water.	NA	NA
Skin	Exposure or repeated contact may irritate the skin. Avoid frequent and prolonged contact. Wear suitable protective clothing and gloves. In case of contact: Brush off skin and clothing. Wash with soap and water. Remove metallic particles and cleanse wounds.	NA	NA
Inhalation	Use local ventilation and / or respiratory protective equipment to limit exposure to airborne dusts.	If sudden overexposure does occur: Remove victim to fresh air. Begin artificial respiration if victim is not breathing.	NA
Ingestion	Seek prompt medical help.	NA	NA
Other	NA	NA	NA
Note to Physicians (Treatment, Testing, and Monitoring) NA			

5. Fire and Explosion Data

Flashpoint & Method: °C / °F NA	Flammable (Explosive) Limits in Air LEL: NA UEL: NA	Autoignition Temperature NA	Other Solid metal: Not ignitable.
Flame Propagation or Burning Titanium fines can ignite if airborne. They are a moderate fire and explosive hazard when exposed to heat, flame, electric current or static electricity.	Properties Contributing to Fire Intensity NA	Flammability Classification Health- , Flammability- , Reactivity- NA	
Extinguishing Media Sand, dolomite, graphite powder or sodium chloride work best.		Extinguishing Media to Avoid Do not use water or CO2 extinguishers	
Protection and Procedures for Firefighters NA			
Unusual Fire and Explosion Hazards NA			

6. Accidental Release Measures

Containment Techniques Solid form: Return to the original container and recycle.
Spill/Leak Clean-Up Procedures and Equipment Dust: Clean up personnel should wear protective clothing and equipment: Gloves, goggles, aprons, respirators, etc. Keep airborne dust to a minimum. Avoid dry sweeping of fines. Sweep or vacuum up spilled materials. Wet down area if necessary, but do not flush into drains or waterways. Place in a metal or plastic drum, seal and save for reclamation.
Evacuation Procedures NA
Special Instructions NA
Reporting Requirements NA



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7. Handling and Storage

Handling Practices and Warnings

Use good housecleaning practices to prevent accumulation of dust, and follow cleaning techniques (vacuuming and wet sweeping) that will keep dusting to a minimum. Do not eat, drink, or smoke in areas where metal dusts or fumes are generated.

Storage Practices and Warnings

(°C / °F). NA

8. Exposure Control/Personal Protection

Ventilation

Provide local exhaust ventilation in areas where metal fumes or dusts are.

Other Engineering Controls

NA

Routes of Entry:

Personal Protective Equipment (PPE) for Normal Use:

PPE for Emergencies:

Eye/Face

NA

NA

Skin

Special protective clothing is not normally needed.

NA

Inhalation

NA

NA

General Hygiene Considerations and Work Practices

NA

Protective Measures During Repair and Maintenance of Contaminated Equipment

NA

Other Protective Measures and Equipment

NA

9. Physical and Chemical Characteristics

Appearance

The alloy is sold as dark gray ingots or castings.

Odor

No odor.

Normal Physical State:

- Liquid Gas
- Solid _____ (Other)

Boiling Point °C / °F NA

Melting Point °C / °F NA

Freezing Point °C / °F NA

Specific Gravity or Density (H₂O=1)

NA

Solubility in Water

Insoluble

pH

NA

Vapor Pressure (mm Hg @ 20°C)

NA

Vapor Density (AIR= 1)

NA

Evaporation Rate (Butyl Acetate = 1)

NA

Other

NA

10. Stability and Reactivity Data

Incompatibility (Materials to Avoid)

Titanium and titanium alloys are not reactive.

Hazardous Products Produced During Decomposition

NA

Hazardous Polymerization?

May Occur May Not Occur NA

Conditions to Avoid

°C / °F NA

Stability?

Stable Unstable NA

Conditions to Avoid

°C / °F NA



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11. Toxicological Information

Toxicity Data, Epidemiology Studies, Carcinogenicity, Neurological Effects, Genetic or Reproductive Effects, or Structure Activity Data

NA

12. Ecological Information

Toxicity, Environmental Fate, Physical/Chemical Data, or Other Data Supporting Environmental Hazard Statements

NA

13. Disposal Considerations

Regulations

NA

Properties (Physical/Chemical) Affecting Disposal

NA

14. Transport Information

Regulated for shipping?

Yes No

Proper Shipping Name

Resolve wire

Packing Group

NA

Do changes in quantity, packaging, or shipment method change product classification?

Yes No

Hazard Class

NA

Identification Number

NA

Other

NA

15. Regulatory Information

Federal Regulations

NA

International Regulations

NA

Other

NA

16. Other Information

Supplier Number: 22 /3

Supplier Release: NA

N/A = not applicable. NA = not available, N/E = not established. N/D = not determined.