VERSAlloy® 75, 76, PWA 996 Brazing Rods

Section 1: Identification

Product Name:	VERSAlloy® 75, 76, PWA 996 Brazing Rods
Issue Date:	July 3, 2001
Revision Date:	May 28, 2020 (supersedes all previous issues)
Synonyms:	AWS A5.8 BNi-1, AWS A5.8 BNi-1a, AMS 4775 Rev. K, AMS 4776 Rev. J, PWA 996 Rev. AV
CAS Number(s):	See section 3
Product Usage:	Brazing Rods

Manufacturer: **Rankin Industries / PMA Division**
400 S. Rockefeller Ave.
Ontario, CA 91761

Phone: **909-483-3222**
Fax: **909-483-3233**
E-Mail: **sales@rankin.com**
Web Site: **www.broco-rankin.com**

Transportation Emergency Number: Emergency Response & Training Solutions
1-800-924-6804 1-440-349-2700 CIN #: 3730

Section 2: Hazard(s) Identification

Health – Environmental - Physical		
Respiratory and Skin Sensitization	GHS Category 1	 **Danger**
Target Organ Systemic Toxicity (single exposure)	GHS Category 2 (respiratory apparatus, kidney)	
Target Organ Systemic Toxicity (repeated exposure)	GHS Category 1 (respiratory apparatus)	
Carcinogenicity	GHS Category 2 (suspected of causing cancer)	
Aquatic Toxicity (chronic)	GHS Category 4 (may cause long lasting harmful effects to aquatic life)	

This product is intended for industrial use by trained individuals. Keep away from children.

Section 3: Composition / Information on Ingredients

Components of mixture*	CAS Number	Weight percentage**
Nickel	7440-02-0	60 – 100
Chromium	7440-47-3	10 – 30
Boron	7440-42-8	1 – 5
Iron	7439-89-6	3 – 7
Silicon	7440-21-3	3 – 7

*This material is a homogenous metallic alloy of the components listed above.
**This is a general reporting range and is not a product specification.

Exposure limits: See Section 8.

Section 4: First Aid Measures

Exposure Route	Acute	Chronic (delayed)
Eye contact	Eye irritation. Flush with water for 15 minutes or until all particles are removed.	If irritation persists, seek medical attention.
Skin contact	Itching, irritation or rash. Remove contaminated clothing. Wash skin with mild soap and water.	If irritation or rash persists, seek medical attention.
Inhalation	Difficulty breathing, coughing, metal fume fever. Remove exposed person to fresh air. If not breathing administer CPR.	If symptoms persist seek medical attention.
Ingestion	Rinse mouth. If large amount, induce vomiting. Seek medical advice.	Seek medical attention.

Never give anything by mouth to an unconscious person. Treat symptomatically and supportively.

Section 5: Firefighting Measures

Suitable Extinguishing Media: Material is not readily combustible. Do not use water on metal fires, use dry chemical, dry sand or carbon dioxide to smother fire.

Specific Hazards during a Fire: Material may break down in fire and may produce toxic decomposition products associated with ingredients. Extreme oxidizing conditions may cause formation of metal oxides. These oxides may be carcinogens.

Protective Equipment: SCBA and full protective gear is recommended for firefighting.

Section 6: Accidental Release Measures

- Stay out of spill, floor may be slippery.
- Do not create airborne dust.
- Do not allow spill to enter floor drains or storm drains.
- Wear PPE: Respirator and Safety Goggles.
- Take up with damp sweeping compound or vacuum. Vacuum should be equipped with HEPA filter on exhaust. Transfer into disposal container(s). Dispose by recycling.
- A spill of greater than 100 lbs. (Nickel RQ 100 lbs., <106µm) which enters the environment requires reporting per OSHA CFR Title 40 Part 372 paragraph 372.4 CERCLA hazardous substance release.

Section 7: Handling and Storage

- General and/or point ventilation system with dust collection is recommended to ensure exposure to airborne dust is maintained below allowable exposure limits.
- Wear PPE such as work gloves (or vinyl/latex gloves), safety glasses/goggles. Respiratory protection is recommended, but is required only when exposure limits have been exceeded.
- Wash hands after use before eating or smoking.
- Do not eat or smoke in area where material is being used.
- Store in tightly closed container. For best results, keep product above the ambient dew point temperature.
- Not a shelf life limited material.

Section 8: Exposure Controls / Personal Protection

Exposure Limits:

Components of mixture	CAS Number	OSHA PEL	ACGIH TLV
Nickel	7440-02-0	1.0 mg/m³	1.5 mg/m³
Chromium	7440-47-3	1.0 mg/m³	0.5 mg/m³
Boron	7440-42-8	15 mg/m³ (5 mg/m³ respirable)	10 mg/m³ as boron oxide
Iron	7439-89-6	10 mg/m³ as oxide fume	5 mg/m³ as respirable oxide
Silicon	7440-21-3	15 mg/m³ (5 mg/m³ respirable)	10 mg/m³

Engineering Controls:

- Local exhaust ventilation may be necessary to control air contaminants to their exposure limits.
- Provide mechanical ventilation for confined spaces or if method of use warrants.

Personal Protective Equipment:

- Gloves – work gloves or non-permeable gloves such as vinyl or latex.
- Eyes – safety glasses/goggles or face shield.
- Clothing – Cover-all, lab coat or normal work clothing.
- Respirator – NIOSH N-95 or N-100 filtering face-piece (dusk mask) or equivalent alternative is recommended for up to 10 times the exposure limits.

Section 9: Physical and Chemical Properties

Physical State	Silver / Grey metallic rod
Odor	None
Odor Threshold	Not available
PH	Not applicable
Melting Point / Freezing Point	1780 - 1970°F
Brazing Range	1950 - 2200°F
Flash Point	None
Evaporation Rate (butyl acetate = 1)	None
Flammability	Not applicable
LFL (LEL) lower flammability (explosive) limit	Not applicable
UFL (UEL) upper flammability (explosive) limit	Not applicable
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Specific Gravity (Bulk Density)	4
Solubility	Not water soluble
Partition Coefficient (n-octanol/water)	Not available
Autoignition Temperature	Not available
Decomposition Temperature	Not available
% VOC's	0%

Section 10: Stability and Reactivity

- **Chemical Stability:** This material is stable.
- **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- **Conditions to Avoid:** None
- **Incompatible Materials:** Strong acids and/or oxidizers.
- **Hazardous Decomposition Products:** Intense heat may produce carbon monoxide and/or carbon dioxide and oxidizing conditions may produce oxides of the ingredients shown in Section 3. Oxides of these ingredients may be carcinogenic.

Section 11: Toxicological Information

Electric arc welding or oxy fuel welding may create one or more of the following health hazards:

FUMES AND GASES: can be dangerous to your health. COMMON ENTRY IS BY INHALATION.

SHORT TERM (ACUTE): over exposure to welding fumes may result in discomforts such as: dizziness, nausea, dryness or irritation of nose, throat, or eyes.

Chromates present in the fume can cause irritation of the respiratory system, damage to lungs and asthma-like symptoms.

Nickel compounds in the fume can cause metallic taste, nausea, tightness in the chest, fever and allergic reactions.

Fluorides can cause pulmonary edema bronchitis.

LONG TERM (CHRONIC): over exposure to welding fumes can lead to siderosis (iron deposits in the lung) and affect pulmonary function.

Long term over exposure to manganese compounds may affect the central nervous system. Symptoms include muscular weakness and tremors similar to Parkinson's disease. Behavioral changes and changes in handwriting may also appear. Employees exposed to manganese compounds should get quarterly medical examinations for early detection of manganism.

Studies have shown that production workers exposed to hexavalent chromium compounds have an increased incidence of lung cancers. Chromates may cause an ulceration and perforation of the nasal septum. Liver damage and allergic skin rash have been reported. Chromium VI compounds are required by OSHA to be considered carcinogenic.

Long term over exposure to nickel compounds may cause lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers. Nickel and its compounds are considered as carcinogenic as required by OSHA.

Repeated over exposure to fluoride fumes may cause serious bone erosion and excessive calcification of the bones and ligaments of the ribs, pelvis and spinal column. Fluorides may also cause skin rash.

Shielding gases such as argon, helium and carbon dioxide are asphyxiates and adequate ventilation must be provided.

THRESHOLD LIMIT VALUE – The ACGIH 1985-86 recommended limit for welding fumes not otherwise classified (NOC) is 5 mg/m^3. TLV-TWA's should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents that may modify this TLV-TWA.

ARC RAYS - can injure eyes and burn skin.

HEAT RAYS – (infrared radiation from flame or hot metal) can injure eyes.

ELECTRICAL SHOCK – can kill.

NOISE – can damage hearing.

CARCINOGENICITY – Chromium and nickel and their compounds are on the IARC (International Agency for Research on Cancer) list and the NTP (National Toxicology Program) list as posing a carcinogenic risk to humans.

***This product contains a chemical known to the State of California to cause cancer.**

Section 12: Ecological Information

- **Aquatic Toxicity:** Acute – None, Chronic – GHS Category 4

Section 13: Disposal Consideration

- Material should be recycled to reclaim scrap metal value.
- If recycling is not possible, dispose of in accordance with local, state, and federal regulations for industrial wastes of this form.

Section 14: Transport Information

DOT Classification	Not regulated unless greater than 100 lbs. per inner container.
UN Identification Number	Not regulated unless greater than 100 lbs. per inner container.
DOT Shipping Description	Not applicable unless greater than 100 lbs. per inner container.

Section 15: Regulatory Information

Toxic Substances Control Act (TSCA)	All ingredients are listed on the TSCA inventory of chemical substances.
Superfund Amendments & Reauthorization Act (SARA)	This product contains Nickel and Chromium.
Resource Conservation & Recovery Act (RCRA)	This material is not a hazardous waste. It is Recyclable.
RoHS & REACH	None

Hazard Codifications & Labeling Requirements
H317 – May cause an allergic skin reaction (nickel).
H351 – Suspected of causing cancer (nickel, chromium).
H370 – Target organ (acute), respiratory apparatus, kidney.
H372 – Target organ (chronic), respiratory apparatus.

Section 16: Other Information

NFPA Numbers (estimated)	**Health: 1**	**Flammability: 0**	**Reactivity: 1**

WHMIS Category: Class D, Division 2: Nickel and Chromium

The information supplied herein follows the guidelines of WHMIS, GHS, OSHA Hazard Communication Standard 29 CFR 1910.1200 and California Proposition 65, to the best of our knowledge, is accurate and complete. The recommended hygiene and handling practices are believed to be appropriate for the use of this material. However, it is up to the end user to review this information and establish their own procedures and guidelines, based upon their particular application(s). Rankin Industries assumes no responsibility for damage or injury resulting from the end use of this product.