




Ranomatic R100, R101, BU, BUG, DDG, 969G, BX2, 23, D

Section 1: Identification

Product Name:	Ranomatic R100, R101, BU, BUG, DDG, 969G, BX2, 23, D		
MSDS Issue Date:	February 21, 2022		
Synonyms:	N/A		
CAS Number(s):	See section 3		
Product Usage:	Fabricated tubular wire, metal and flux cored, for open arc and gas metal arc welding.		
Manufacturer:	Rankin Industries 400 S. Rockefeller Ave. Ontario, CA 91761 USA	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

Classification of the substance or mixture	
NFPA 704 diamond	
	
Note: The hazard category numbers found in GHS classification in section 2 of this SDS are NOT to be used to fill in the NFPA 704 diamond. Blue = Health, Red = Fire, Yellow = Reactivity, White = Special (Oxidizer or water reactive substances).	
Classification:	Acute Toxicity (Inhalation) Category 4, Carcinogenicity Category 2
Label Elements	
Hazard pictogram(s):	 
Signal Word:	Warning
Hazard statement(s)	
H332	Harmful if inhaled
H351	Suspected of causing cancer
Hazard(s) not otherwise specified	
Not Applicable	
Precautionary statement(s) Prevention	
P201	Obtain special instructions before use
P271	Use only outdoors or in a well-ventilated area
P281	Use personal protective equipment as required
P261	Avoid breathing dust/fumes
Precautionary statement(s) Response	
P308+P313	IF exposed or concerned: Get medical advice/attention
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Section 2: Hazard(s) Identification cont.

Precautionary statement(s) Storage	
P405	Store locked up
Precautionary statement(s) Disposal	
P501	Dispose of contents/container in accordance with local regulations

Section 3: Composition / Information on Ingredients

Components of mixture*	CAS Number	Weight percentage**
Titanium Dioxide	13463-67-7	0 – 10
Magnesium	1309-48-4	0 – 6.5
Manganese	7439-96-5	.5 - 25
Silicon	7440-21-3	0 – 3
Tungsten	7440-33-7	0 – 65
Chromium	7440-47-3	0 – 40
Nickel	7440-02-0	0 – 20
Molybdenum	7439-98-7	0 – 8
Vanadium	7440-62-2	0 – 18
Graphite	7782-42-5	0 – 3
Fluoride	7789-75-5	0 – 2
Calcium Carbonate	1317-65-3	0 – 5
Iron	7439-89-6	35 – 95
Zirconium	7440-67-7	0 - 8

IMPORTANT: This section covers the materials from which these products are manufactured. The fumes and gases produced when welding with normal use of these products are covered in Section 11.

Section 4: First Aid Measures

EMERGENCY AND FIRST AID PROCEDURES - Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

Section 5: Firefighting Measures

(Nonflammable) Welding arc and sparks can ignite combustibles and flammables. Refer to American National Standard Z49.1, for fire prevention during the use of welding and allied procedures.

Section 6: Accidental Release Measures

Metal scrap should be picked up using normal procedures, avoiding contact with sharp edges. Metal particulates, shavings, powders and granules should be cleaned up. Use a wet, sweeping action, taking care to avoid creating dust. Vacuum only with HEPA filtered equipment. Do not use compressed air for clean-up. Some fine metal powders may ignite or explode under specific conditions. Trained personnel using pre-planned procedures should respond to uncontrolled releases. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel. For exposure to particulate levels above regulated levels, use rubber or nitrile gloves, chemically resistant suit and boots, and air purifying respirator with a HEPA filter. Sweep-up the spilled solid and place all spill residues in a double plastic bag and seal.

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.
- To prevent rust of wire, make sure a desiccant pack is in with the wire.

Section 8: Exposure Controls / Personal Protection

Exposure Limits:			
Components of mixture	CAS Number	OSHA PEL mg/m ³	ACGIH TLV mg/m ³
Titanium Dioxide	13463-67-7	5.0 (respirable)	10.0 (dust)
Magnesium	1309-48-4	15.0	10.0 (Oxide fume)
Manganese	7439-96-5	1.0 (fume)	1.0 (fume), 3.0 (Stel)
Silicon	7440-21-3	5.0 (respirable)	10.0 (dust)
Tungsten	7440-47-3	None	5.0 (insoluble), 1.0 (soluble)
Chromium	7440-47-3	0.005 (metal)	0.5 (metal), 0.05 (Cr VI)
Nickel	7440-02-0	1.0 (metal)	1.0 (metal), 0.1 (soluble)
Molybdenum	7439-98-7	5.0 (soluble)	5.0 (soluble)
Vanadium	7440-62-2	0.5 (dust)	.05 as V ₂ O ₅ (as fume)
Graphite	7782-42-5	5.0 (respirable)	2.0 (respirable)
Fluoride	7789-75-5	2.5	2.5 as F
Calcium Carbonate	1317-65-3	5.0 (respirable)	10.0 (dust)
Iron	7439-89-6	10.0	5.0 (oxide fume)
Zirconium	7440-67-7	5.0	5.0

CLG: Ceiling Limit
STEL: Short Term Exposure Limit

Ventilation – Use enough ventilation, local exhaust at the arc, or both, to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

Respiratory Protection – Use respirable fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV.

Eye Protection – Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to the next lighter shade which gives sufficient view of the weld zone. Provide protective screens and flash goggles, if necessary, to shield others.

Protective Clothing – Wear head, hand and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

Section 9: Physical and Chemical Properties

Physical State	Continuous Fabricated Dark Grey Metallic Wire
Odor	Not applicable
Odor Threshold	Not applicable
PH	Not applicable
Melting Point / Freezing Point	2150°F - 2710°F
Boiling Point	Not determined
Flash Point	Not determined
Evaporation Rate (butyl acetate = 1)	None
Flammability	Non-flammable
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)	Not available
Solubility	Not soluble
Partition Coefficient (n-octanol/water)	Not determined
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/m³. 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.

Section 12: Ecological Information

ENVIRONMENTAL STABILITY: Most of the metals elements are naturally present (in low concentrations) in the soil and water. Individual metal's transport in the environment depends upon the exact compound, the pH, the soil type, and the salinity. All work practices should be aimed at eliminating environmental contamination.

Section 13: Disposal Consideration

Procedure For Cleanup Of Spills Or Leaks – Not applicable.

Waste Disposal Method – Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state and local regulations.

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 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

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.
- IDLH: Immediately Dangerous to Life or Health Concentrations
- OSF: Odor Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit of Detection
- OTV: Odor Threshold Value
- BCF: Bioconcentration Factors
- BEI: Biological Exposure Index

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.