



000439500010



MATERIAL SAFETY DATA SHEET

COMPANY NAME: ROGERS TOOL WORKS, INC.
P.O. Box 9
ROGERS, ARKANSAS 72757-0009

TELEPHONE NO: 501-636-1515

43-950

REV. DATE: 4/27/95

CHEMICAL NAME: Refractory Metal Carbide Product with cobalt/nickel binder and brazed Carbide Products

TRADE NAME: All RTW Carbide Grades, tube rods, brazed tools and sludges

CHEMICAL FAMILY: N/A

MOLECULAR WEIGHT: N/A

SECTION 1. PHYSICAL DATA

APPEARANCE & ODOR: Grey Metal/No Odor

BOILING POINT: N/A

MELTING POINT: N/A

VAPOR PRESSURE: N/A

VAPOR DENSITY(AIR=1): N/A

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY:(H₂O=1) 11 to 15.5

% VOLATILE BY VOLUME: N/A

EVAPORATION RATE: N/A

HOW BEST MONITORED: Air Sample

SECTION 2. HAZARDOUS INGREDIENTS AND SECTION 313 SUPPLIER NOTIFICATION

These products may contain some or all of the following materials. Materials marked by an asterisk are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

MATERIAL	CAS NUMBER	% BY WEIGHT	OSHA TLV-TWA (mg/m ³)	ACGIH TLV-TWA (mg/m ³)	HMIS @				
					H	F	R	PPI	
<u>Cemented carbide; Cobalt binder</u>									
Tungsten Carbide	12070-12-1	40-97	5	5	1	0	0	#	
*Cobalt	7440-48-4	3-30	.05	.05	2	0	0	#	
Tantalum Carbide	12070-06-3	0-30	5	5	1	0	0	#	
Titanium Carbide	12070-08-5	0-15	10	10	1	0	0	#	
*Vanadium Carbide	12070-10-9	0-.5	.05**	.05	2	0	0	#	
Niobium Carbide	12069-94-2	0-5	5	5	1	0	0	#	
<u>Cemented carbide; Nickel binder</u>									
May contain any of the above, except cobalt, plus:									
*Nickel	7440-02-0	3-20	1	1	2	0	0	#	
<u>Cemented Carbide; coated</u>									
May contain any of the above plus:									
Aluminum Oxide	1344-28-1	0-.5	10	10	1	0	0	#	
Titanium Nitride	25583-20-4	0-.5	10	10	1	0	0	#	
<u>Cemented Carbide; brazed products</u>									
May contain any of the above plus:									
*Silver	7440-22-4	1-20	.01	.1	2	0	0	#	
*Cadmium	7440-43-9	0-16	.1(.3**)	.05	2	0	0	#	
Copper	7440-50-8	1-10	1	1	2	0	0	#	
*Zinc	7440-66-6	1-10	5	5	1	0	0	#	
<u>Cemented Carbide Product; tube rod</u>									
Same as Cemented Carbide, Cobalt Binder, plus:									
*Silicomanganese	12743-28-1	1-6	5**	5**	2	0	0	#	
Iron	7439-89-6	25-50	10	5	1	0	0	#	

** ceiling

@ The HMIS health(H) ratings are for the fume/dust/powder form of the materials. In solid form, these materials are not believed to be a significant health or fire hazard. However, any concentrated airborne metal fume/dust/powder can be a health/fire/explosion hazard.

See section 8 for personal protection.



000439500010

④ 43-950

SECTION 3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	N/A	EXPLOSION LIMITS:	N/A
FLAMMABLE LIMITS:	N/A	TEST METHOD USED:	N/A

Hard Cemented Carbide products are not a fire hazard. Tungsten Carbide Products, except as powder and dust, are not expected to present a fire or explosion hazard under normal handling conditions.

EXTINGUISHING MEDIA:

Use ABC type fire extinguisher, sodium chloride, soda ash, dry sand, or dry dolomite.

SPECIAL FIRE FIGHTING PROCEDURES:

For a fire confined to a container or small area, cool containers exposed to flame with water on the container side until fire is out; use a respirator approved for toxic dusts and fumes. For large fires, fire fighters should use self contained breathing apparatus, and consider use of unmanned hose holder or monitor nozzles, or let fire burn.

Avoid breathing fumes from burning materials.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Powder and dust may present a fire or explosion hazard under a condition of appropriate particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal conditions.

SECTION 4. REACTIVITY DATA

STABILITY:	Stable	CONDITIONS TO AVOID:	N/A
INCOMPATIBILITY:	Contact of dust with strong oxidizers may cause fire or explosions.	MATERIALS TO AVOID:	Strong acids and oxidizers
HAZARDOUS POLYMERIZATION:	Will not occur	HAZARDOUS PRODUCTS FROM DECOMPOSITION:	None

SECTION 5. HEALTH HAZARD DATA**PRIMARY ROUTES OF ENTRY: INHALATION AND SKIN CONTACT OF DUST/FUMES GENERATED DURING USE:**

Tungsten Carbide Product dust/fumes resulting from cutting, grinding, burning, brazing or welding may contain hazardous ingredients which can be inhaled, or come in contact with the skin or eyes. Hypersensitivity to nickel is common and can cause allergic contact dermatitis and conjunctivitis.

EFFECTS OF OVEREXPOSURE; EMERGENCY & FIRST AID PROCEDURES:

INHALATION: Tungsten Carbide Product dust and fumes can cause irritation of the nose and throat.

ACUTE: Overexposure may cause shortness of breath, pulmonary asthma, wheezing, coughing, soreness in the chest, bronchitis, weight loss, hemoptysis, interstitial fibrosis and radiological changes.

CHRONIC: Overexposure may cause symptoms listed in acute overexposure, pneumoconiosis, sensitization, interstitial lung disease and radiological changes. Both sensitization and interstitial fibrosis are permanent. Chronic cobalt exposure is a potential cause of blood, heart, and other non-respiratory organ problems. Chronic overexposure to manganese compounds can affect the central nervous system. Symptoms are similar to Parkinson's Disease; handwriting and behavior changes may also occur. For early detection of manganese induced health problems, periodic medical examinations of employees who are chronically exposed to manganese is recommended.

FIRST AID: If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.) remove from exposure area to fresh air immediately. Keep affected person warm and at rest. If breathing has stopped, perform artificial respiration and seek medical attention immediately.



000439500010

Ⓜ 43-950

EYE CONTACT: Dust may irritate eyes.
ACUTE: May cause irritation, redness, pain, itching or conjunctivitis. Existing eye problems may be aggravated by exposure.
CHRONIC: Same as ACUTE.
FIRST AID: If irritation occurs, seek medical attention.

INGESTION: Not expected to occur. Seek medical attention if ingestion should occur.

CARCINOGENIC ASSESSMENT: Nickel metal has been determined to be carcinogenic (IARC & NIOSH).
 Cadmium dust/fume has been identified as probably carcinogenic to humans (IARC).
 No other material in this product has been identified as a known or suspected carcinogen.

SECTION 6. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: N/A

WASTE DISPOSAL METHOD: Tungsten Carbide Product is a valuable material that may be sold as scrap for reclamation purposes. If reclamation is not feasible, it is the responsibility of the consumer to dispose of this product in accordance with all federal, state or local laws or regulations regarding disposal.

SECTION 7. WARNING LABEL INFORMATION

WARNING: GRINDING OR OTHER UNINTENDED USE OF THIS PRODUCT MAY PRODUCE HAZARDOUS DUST AND FUMES WHICH MAY DAMAGE THE LUNGS. TO AVOID ADVERSE HEALTH EFFECTS, READ THE MATERIAL SAFETY DATA SHEET FOR THIS PRODUCT AS WELL AS FOR ANY OTHER MATERIAL COMING INTO CONTACT WITH THIS PRODUCT. WEARING OF EYE PROTECTION IS STRONGLY ADVISED IN THE VICINITY OF THIS PRODUCT'S USE.

SECTION 8. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use an appropriate NIOSH/MSHA approved respirator if airborne dust/fume concentrations exceed the appropriate PEL or TLV. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

VENTILATION: Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust/fume levels which do not exceed the PEL or TLV. If such equipment is not available, use respirators as specified above.

PROTECTIVE GLOVES: Protective gloves are recommended when welding to avoid burns.

EYE PROTECTION: Appropriate glasses, face shield, or goggles are recommended.

SECTION 9. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid dispersion of powder and dust in air. Maintain good housekeeping procedures to prevent dust accumulation. Avoid dust inhalation and direct skin contact with dust.

OTHER PRECAUTIONS: Clean up using methods which avoid dust generation (such as vacuum with appropriate filter or wet mop/cloth) to prevent airborne dust levels which exceed the PEL or TLV. If airborne dust is generated, use an appropriate NIOSH/MSHA approved respirator.
 Wash hands thoroughly before eating or smoking. Wash exposed skin at the end of work shift. Do not shake clothing, rags, etc. to remove dust; remove by washing or vacuuming.

Although ROGERS TOOL WORKS, INC (RTW) has attempted to provide current and accurate information herein, RTW makes no representation regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from or arise out of the use of or reliance on the information by any person. The product(s) described herein is considered to be an "article" within the meaning of Title 29 of the Code of Federal Regulations(C.F.R.), Section 1910.1200. This MSDS is provided to users and suppliers of RTW carbide products only to meet the informational requirements of Section 1910.1200.



000439500010

Ⓜ 43-950

IN CASE OF QUESTIONS, PLEASE CALL:

COMPANY NAME:	Rogers Tool Works, INC.	ISSUE DATE:	4/27/95
TELEPHONE NUMBER:	(501) 636-1515	SUPERSEDES:	Previous MSDS dated 1/8/93 for this product