Section 1: Product and Company Identification

Product Name: All Ultra-met Cemented Tungsten Carbide and Cermet products.

Synonyms: Cemented carbide, Sintered carbide, Tungsten carbide, Cermet, Hard metal

Intended Uses: Cutting tools, Wear parts

Manufacturer: The Ultra-met Company
120 Fyffe Street
Urbana, OH 43078
www.ultra-met.com
(937) 653-7133

Emergency Phone: (937) 653-7133

Section 2: Hazards Identification

Classification: Within the meaning of the OSHA Hazardous Communication Standard (29 CFR 1910:1200) this product is considered a manufactured article and is not considered a hazard when used under normal conditions.

Signal Word: Warning

Hazard Statement: Grinding this product will produce dust which may be harmful in contact with eyes or skin, if inhaled, or swallowed.

Emergency Overview: Sintered Tungsten Carbide with Cobalt and/or Nickel Binder is a dark gray solid metal with no odor. During normal operation and usage, cemented carbide products do not present inhalation or ingestion hazards. However grinding this material will generate dusts and mists that are considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential Health Effects:

Eye Contact	May cause eye irritation.
Skin Contact	May cause skin irritation or allergic skin rash.
Inhalation	May cause irritation of the upper respiratory system.
Ingestion	May cause systemic effects or chronic effects.

Potential Environmental Effects: No data available at this time.

Section 3: Composition / Information on Ingredients

Chemical Family: Refractory Metal Carbide

Material	Weight %	CAS Number	GHS Classification
Tungsten Carbide (WC)	30% - 97%	12070-12-1	Not classified
Cobalt (Co)	0% - 25%	7440-48-4	Acute Oral 4 (H302) Acute Dust/Mist 1 (H330) Eye damage 2 (H319) Resp. Sens. 1B, H334 Skin Sens. 1 (H317)

			Carc. 2 (H351) Repr. 2 (H361) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Tantalum Carbide (TaC)	0.1% - 15%	12070-06-3	Not classified
Titanium Carbide (TiC)	0.1% - 20%	12070-08-5	Not classified
Niobium Carbide (NbC)	0.1% - 15%	12069-94-2	Not classified
Chromium Carbide (Cr3C2)	0.2%-3%	12012-35-0	Not classified
Vanadium Carbide (VC)	0.2%-3%	12070-10-9	Not classified
Nickel (Ni)	0% - 20%	7440-02-0	Skin Sens. 1 (H317) Carc. 2 (H351) STOT RE 1 (H372) Aquatic Chronic 3 (H412)
Molybdenum (Mo)	< 2%	7439-98-7	Comb. Dust (H232)

Full text of H-phrases: See Section 16

Section 4: First Aid Measures

Grinding cemented tungsten carbide product will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes.

First Aid Procedures:

Eye Contact	Flush eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. If irritation persists, seek medical attention.
Skin Contact	Wash thoroughly with soap and water and isolate from exposure. If irritation persists, seek medical attention.
Inhalation	Move to fresh air. If symptoms of pulmonary involvement develop (i.e. coughing, wheezing, shortness of breath), remove from exposure and seek medical attention
Ingestion	If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting, and seek medical attention.

Note to Physicians: Medical Conditions aggravated by long term exposure include chronic pulmonary, upper respiratory tract, and skin disorders. Target Organs are the respiratory system, skin, bladder, kidneys, and eyes. Primary Routes of Entry are through skin contact, eye contact, inhalation, or ingestion.

Section 5: Fire-fighting Measures

Flammable Properties:
Cemented carbides are not a fire hazard. However dusts and mists generated in grinding operations may present a fire or explosion hazard if allowed to accumulate and are exposed to high temperatures or ignition sources. Particle size and dispersion in air determine reactivity. However, this is not expected to be a problem under normal handling conditions.

Flash Point: Not applicable

Suitable Extinguishing Media: Remove oxygen by sealing container or by smothering with dry sand, dry dolomite, use an ABC type fire extinguisher or flood with water. Move container from fire area if possible.

Protection of Firefighters

Specific Hazards Arising from Chemicals: May generate toxic metal fumes when heated.
Protective Equipment and Precautions for Firefighters: For a fire contained to a small area, use a respirator approved for toxic dust and fumes. For a large fire, firefighters should use self-contained breathing apparatus.

Section 6: Accidental Release Measures

Personal Precautions: If airborne dust is present, ventilate area and use personal protection recommended in Section 8.

Environmental Precautions: Material is not hazardous to the environment.

Methods for Clean-Up: Clean up using methods that avoid dust generation such as a vacuum with HEPA filter, wet mop, or wipe. If airborne dust is generated use an appropriate NIOSH approved respirator. Place in suitable clean, dry container for later disposal or reclamation.

Section 7: Handling and Storage

Handling: Maintain good housekeeping practices to prevent dust accumulation during grinding. Avoid dispersion of grinding dust and mist into the air. Do not breathe dust. If airborne dust is generated use an appropriate NIOSH approved respirator. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling, before eating or smoking. Do not shake clothing, rags, or other items to remove dust. Dust should be removed by washing or vacuuming with appropriate filters.

Storage: There is no specific storage requirement for end-user products.

Section 8: Exposure Controls / Person Protection

Exposure Guidelines

Material	OSHA PEL [1]	ACGIH TLV [2]
Tungsten Carbide (insoluble compounds)	5 mg/m^3	5 mg/m^3
Cobalt (dust and fume)	0.1 mg/m^3	0.02 mg/m^3
Tantalum Carbide (metal and oxide dust)	5 mg/m^3	5 mg/m^3
Titanium Carbide (TiC)	5 mg/m^3	None established
Niobium Carbide (NbC)	None established	None established
Chromium Carbide (Cr_2C_3)	1 mg/m^3	0.5 mg/m^3
Vanadium Carbide (VC)	None established	None established
Nickel (metal and insoluble compounds)	1 mg/m^3	1.5 mg/m^3
Molybdenum (Mo)	Not available	10 mg/m^3

(1) The OSHA PEL is the employee's time-weighted average exposure in any 8 hour work shift of a 40 hour week which may not be exceeded.
(2) The ACGIH TLV is the time-weighted average concentration for an 8 hour workday in a 40 hour week to which nearly all workers may be repeatedly exposed with adverse effect.

Engineering Controls:
Use local exhaust ventilation that is adequate to limit personal exposure to airborne dust to levels that do not exceed the PEL or TLV.
If such equipment is not available, use respirators as specified in 8.3.3.
Avoid contact with skin, eyes, and clothing. Wash hands thoroughly after handling and before eating or smoking.

Personal Protective Equipment (PPE)

Eye Contact	Safety glasses with side shields are recommended.
Skin Contact	Protective apron and gloves or barrier creams are recommended when contact with dust or mist is likely. Prior to donning gloves, wash hands thoroughly.
Inhalation	Use an appropriate NIOSH approved respirator when airborne dust concentrations exceed the appropriate PEL or TLV. All applicable requirements set forth in 29 CFR 1910.134 should be met.
Ingestion	Not applicable

Section 9: Physical and Chemical Properties

Appearance:	Dark gray metal	Vapor Density:	Not applicable
Physical State:	Solid	Viscosity:	Not applicable
Odor:	None	Specific Gravity:	11.0-15.5
Odor Threshold:	None	Auto ignition Temperature:	None
Solubility in Water:	Insoluble	Flash Point:	None
pH:	Not applicable	Flammability:	None
Freezing/Melting Point:	Not applicable	Upper Explosive Limit:	None
Boiling Point:	Not applicable	Lower Explosive Limit:	None
Evaporation Rate:	Not applicable	Decomposition Temperature:	None
Vapor Pressure:	Not applicable	Partition Coefficient:	Not applicable

Section 10: Stability and Reactivity

Chemical Stability: Stable under normal conditions of temperature and pressure.

Conditions to Avoid: Contact of dust with strong oxidizers may cause fire or explosion.

Incompatible Materials: Acids, strong oxidizers.

Hazardous Decomposition Products: Not applicable

Possibility of Hazardous Reactions: Will not occur under normal conditions.

Section 11: Toxicological Information

Eye Contact	Can cause irritation or conjunctivitis.
Skin Contact	Can cause irritation or allergic skin rash due to cobalt or nickel sensitization. Certain skin conditions, such as dry skin, may be aggravated by exposure.
Inhalation	Cobalt: Dusts or mists can cause irritation of the nose and throat. Inhalation can results in an allergic reaction in individuals previously sensitized, causing difficult breathing. Dusts or mists also have the potential for causing transient or permanent respiratory or pulmonary diseases, including occupational asthma, pulmonary fibrosis, and interstitial pneumonitis in some individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Reports have also indicated a lack of correlation between onset of symptoms, length of exposure, and the development of interstitial pneumonitis. Symptoms may include a productive cough, wheezing, shortness of breath, chest tightness, dyspnea, and retrosternal pain.

	Nickel: Acute toxicity from nickel inhalation can cause headache, sore throat, and hoarseness. Nickel is also suspected of causing nasal and lung cancer. Symptoms may include pain, bleeding, nasal obstruction, vision impairment, weight loss, and voice resonance change.
Ingestion	Ingestion of significant amounts of cobalt has the potential of causing blood, heart, and other organ problems. The LD50 for cobalt is 6,171 mg/kg (oral, rat). Current scientific information indicates no adverse effects are likely from ingestion of small amounts of nickel dust generated from this product. The LD50 for nickel is 5 g/kg (oral, rat).
Conditions Aggravated by Exposure	Lung and other pulmonary and skin conditions may be aggravated by exposure.

Carcinogenicity. Metallic cobalt and metallic nickel are listed as an IARC Group 2B (possibly carcinogenic to humans). Metallic nickel is also listed under NTP as reasonably expected to be a carcinogen.

Section 12: Ecological Information
No data available.

Section 13: Disposal Considerations
Ensure disposal in compliance with all applicable federal, state, and local regulations. Contact the manufacturer for additional Information. May be sold for recycling.

Section 14: Transportation Information
Basic Shipping Information: U.S. Department of Transportation (49 CFR 171 to 180)
No classifications assigned.

Section 15: Regulatory Information
OSHA 29 CFR 1910.1200: Covered under the OSHA “Hazard Communication” standard.
Toxic Substances Control Act: All components are on the TSCA inventory.

CERCLA 40 CFR 302: There is no reportable quantity for cobalt. Reportable Quantity is one hundred pounds for nickel.

SARA Title III: Hazard categories are Chronic.

Clean Water Act. This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Section 16: Other Information
CERCLA Ratings (Scale 0-3): Health 0 Fire 0 Reactivity 0 Persistence 0

Date Prepared: December 2015
Replaces prior MSDS-Cemented Tungsten Carbide Product with Cobalt Binder (February 2010).

GHS Full Text Phrases:

Acute Dust/Mist 1	Acute toxicity (inhalation: dust, mist) Category 1
Acute Oral 4	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
Repr. 2	Reproductive toxicity Category 2
Resp. Sens. 1B	Respiratory sensitization Category 1B
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H232	May form combustible dust concentrations in air
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

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