Guhring Coating Services
P.O. Box 643
Brookfield, WI 53008
Phone: 262-784-6730
Fax: 262-784-9291
http://www.guhring.com

GUHRING

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

PRODUCT NAME: **Cemented Carbide Product with Cobalt Binder**

SIZES: As applied to all new and reconditioned cutting tools

EMERGENCY TELEPHONE NUMBER: 800-776-6170

Environmental Health & Safety Information: 262-784-6730

EDITION DATE: 06-28-2010 APPROVED BY: Don Rancic

2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
Tungsten Carbide	12070-12-1	30.0-97.7*	5 mg/m³ (as W)
Cobalt	7440-48-4	2.0-30.0*	0.1 mg/m³
Tantalum Carbide	12070-06-3	0-56.4*	5 mg/m³ (as Ta)
Chromium Carbide	12012-35-0	0-5.1*	5 mg/m³ (as Cr^3)
Chromium (+3)	*7440-47-3*	*0-4.5**	0.5 mg/m³
**Depends on grade specifications*			

3. PHYSICAL DATA

Boiling Point:	NA
Vapor Pressure (mm Hg)	NA
Vapor Density (Air = 1):	NA
Specific Gravity: (H^20=1)	9.5 to 15.5
Percent Volatile by Volume:	0
Evaporation Rate:	NA
Solubility in Water:	Insoluble
How Best Monitored:	Air Sample
Appearance and Odor:	Dark gray metal / no odor

4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA LOWER (LEL): NA

FLAMMABLE LIMITS IN AIR (%): NA UPPER (UEL): NA

EXTINGUISHING MEDIA: For powder fires, smother with dry sand, dry dolomite, ABC fie extinguisher or flood with water.

AUTO-IGNITION: NA

SPECIAL FIRE FIGHTING PROCEDURES: As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products from other materials involved.

SPECIAL HAZARDS: NONE

5. SPECIAL PROTECTION INFORMATION

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

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

PROTECTIVE GLOVES: Protective gloves or barrier cream are recommended when contact with dust or mist is likely. Prior to applying the Barrier cream or use of protective gloves, wash thoroughly.

EYE PROTECTION***:*** Wear approved eye protection whenever using machining tools. If particulates or metal pieces are released into the eyes get immediate medical attention immediately. Use good housekeeping and safe work practices when securing a tool to a machine.

OTHER PROTECTIVE EQUIPMENT: N/A

6. REACTIVITY DATA

STABLE OR UNSTABLE: Stable

INCOMPATIBILITY (MATERIALS TO AVOID): Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS: NA

DECOMPOSITION TEMPERATURE (0°F): NA

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: Avoid high heat grinding, crushing or melting

7. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Ventilate area of spill. Clean up using methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

WASTE DISPOSAL METHOD: Dispose of in accordance with appropriate government regulations. May be sold as scrap for reclaim.

8. HEALTH HAZARD DATA

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

Inhalation: Dust from grinding can cause irritation of the nose and throat. It also has the potential for causing transient or permanent respiratory disease including occupational asthma and interstitial fibrosis, in a small percentage of exposed individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Symptoms include productive cough, wheezing, shortness of breath, chest tightness and weight loss. Interstitial fibrosis (lung scarring) can lead to permanent disability or death. Certain pulmonary conditions maybe aggravated by exposure.

Skin Contact: Can cause an irritation or skin rash due to Cobalt sensitization. Certain skin conditions, such as dry skin, may be aggravated by exposure.

Eye Contact: Can cause irritation.

Ingestion: Reports outside the industry suggest that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems.

EMERGENCY AND FIRST AID PROCEDURES: Applicable for dusts or mists

Inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure and seek medical attention.

Skin Contact: If irritation or rash occurs, thoroughly wash affected area with soap and water and isolate from exposure. If irritation or rash persists, seek medical attention.

Eye contact: If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

Ingestion: If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

CARCINOGENIC ASSESSMENT (NTP Annual Report, IARC Monographs, other)
"Cobalt Metal Powder is identified on the CA Prop. 65 list of potential carcinogens."

9. SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Maintain good housekeeping procedures to prevent dust accumulation during grinding. 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 to prevent airborne dust levels which exceed PEL or TLV), wet dust mop or wet cleanup. If airborne dust is generated, use an appropriate NIOSH approved respirator. Wash hands thoroughly after handling, before eating or smoking. Wash exposed skin at the end of work shift. Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or vacuuming (with appropriate filters) the clothing, rags, or other items. Periodic medical examinations are recommended for individuals regularly exposed to dust or mist.

10. SARA 313

To our knowledge notification is not required because listed materials are in amounts below the threshold reporting value. Your individual facility or reporting practices may vary.

NOTICE: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Guhring Corporation makes no warranty expressed or implied.

Gurhing Coating Services
P.O. Box 643
Brookfield, WI 53008
Phone: 262-784-6730
Fax: 262-784-9291
http://www.guhring.com

GUHRING

MATERIAL SAFETY DATA SHEET

1. Guhring specialty coatings represent less than 1% of the total tool by weight. The Ingredients list below includes typical weight ranges for cutting tools to which the coatings are applied. The coating identified below is applied to the tool by Guhring.

1. IDENTIFICATION

PRODUCT NAME: Guhring "FIREX" (Titanium Aluminum Nitride-multilayer coating)

SIZES: As applied to all new and reconditioned cutting tools

EMERGENCY TELEPHONE NUMBER: 800-776-6170

Environmental Health & Safety Information: 262-784-6730

EDITION DATE: 01/25/2010 APPROVED BY: Don Rancic

2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
Titanium (In coating)	7439-98-7	0.2-1.0	10 mg/m^3 (I) 3 mg/m3 (R)
Aluminum (In coating)	7429-90-5	0.02-0.05	5mg/m3-Irritant
Other (tooling)		99-99.8	Not applicable

**Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents, 2003.*

3. PHYSICAL DATA

Boiling Point @ 760 mm Hg (°C):	NA
Vapor Pressure (mm Hg @ 25°C):	NA
Vapor Density (Air = 1):	NA
Density (grams/cc):	NA
Percent Volatile by Volume (%):	NA
Evaporation Rate (Butyl Acetate = 1):	NA
Physical State:	NA
Solubility in Water (% by Weight):	NA
pH:	NA
Appearance and Odor:	Red-violet colored coating on tool

NA = Not Applicable

4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA LOWER (LEL): NA

FLAMMABLE LIMITS IN AIR (%): NA UPPER (UEL): NA

EXTINGUISHING MEDIA: FIREX coating is not flammable. Fight fire normally based upon other materials involved.

AUTO-IGNITION: NA

SPECIAL FIRE FIGHTING PROCEDURES: As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products from other materials that may be involved.

SPECIAL FIRE EXPLOSION HAZARDS: None.

5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: "FIREX" coating forms a wear-resistant surface on the tooling to which it is applied. A small amount of coating may be released in particulate form during normal machining operations. Airborne concentrations at TWA are highly unlikely due to low coating amount and small surface area typically involved. (See section 2-aluminum-titanium)

EFFECTS OF OVEREXPOSURE: Irritation

EMERGENCY FIRST AID PROCEDURES:

Inhalation:
Remove individual from immediate work area to a supply of fresh air. At a minimum, use standard ventilation practices around operating machine tools. Consult physician if condition persists**.**

.

Eye:
Wear approved eye protection whenever using machining tools. Use good practices when securing tooling in a machine.

6. REACTIVITY DATA

STABLE OR UNSTABLE: Stable

INCOMPATIBILITY (MATERIALS TO AVOID): NA

HAZARDOUS DECOMPOSITION PRODUCTS: NA

DECOMPOSITION TEMPERATURE (0°F): NA

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: NA

7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS: Coating is applied to metal tooling. Pick up and properly store tooling to avoid trip hazard.

REPORTING PROCEDURE: Report all spills in accordance with Federal, State and Local reporting requirements. Guhring is not aware of any environmental reporting requirements for spilled tooling.

WASTE DISPOSAL METHOD: Used tooling may be re-coated several times before it reaches end of life. Guhring recommends returning the tooling for recoating as many times as practical and then recycling the metal tool appropriately at end-of-useful-life.

8. PROTECTION INFORMATION

RESPIRATORY PROTECTION:		General respiratory protection for dust/fumes
VENTILATION:	Local Exhaust:	General ventilation
	Mechanical (General):	May control or enclose work area if appropriate
	Special:	NA
	Other:	NA
PROTECTIVE GLOVES:		As needed for heat or metal slivers on tooling
EYE PROTECTION:		Use safety eye wear around operating machines
OTHER PROTECTIVE CLOTHING:		NA

9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store tooling in a dry place. Observe proper lifting techniques for bulk tooling.

TRANSPORTATION-SHIPPING: FIREX coating on tools do not classify the tooling for any hazard class per USDOT regulations. Normally the tooling to which the FIREX coating is applied is not a hazardous material. Always ship tools per 49 CFR, IATA, ICAO, UN regulation, or other local regulation that may be required for the base tool material.

10. SARA 313

Notification is not required because the aluminum content of the coating is below the threshold reporting value. Reporting requirements may vary based upon other facility requirements.

NOTICE: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Guhring Inc. makes no warranty expressed or implied.