MATERIAL SAFETY DATA SHEET

LEXINGTON CUTTER, INC.
2951 63rd Avenue East
Bradenton, Florida 34203
Phone (941) 739-2726 FAX (941) 739-2827

Chemical Name: Cemented Carbide Product with Cobalt Binder
Trade Name and Synonyms:
Carbide Tips (in Carbide Tipped Cutting Tools)
Chemical Family: Refractory Metal Carbide
Molecular Weight: N/A

PHYSICAL DATA

Appearance and Odor.....Dark gray metal/no odor
Boiling Point.....N/A
Vapor Pressure (mm Hg).....N/A
Vapor Density (Air=1).....N/A
Solubility in Water.....Insoluble
Specific Gravity (H_2O=1).....9.5 to 15.5
Percent Volatile by Volume.....0
Evaporation Rate.....N/A
How Best Monitored.....Air sample

HAZARDOUS INGREDIENTS

Material (CAS#)	Percent by Weight	OSHA PEL	ACGIH TLV
Tungsten Carbide (12070-12-1)	30.0-97.7*	---	5 mg/m³(asW)
Cobalt (7440-48-4)	2-30*	0.1 mg/m³	0.1 mg/m³
Tantalum Carbide (12070-06-3)	0.0-56.4*	5 mg/m³(as Ta)	5 mg/m³(as Ta)
Chromium Carbide (12012-35-0)	0.0-5.1*	1 mg/m³(as Cr^3)	5 mg/m³(as Cr^3)
Chromium (+3) (7440-47-3)	0.0-4.5*	1 mg/m³	0.5 mg/m³

Cadmium and/or Nickel may be present in brazed tools - see applicable Material Safety Data Sheet
**Depends on grade specifications*

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 or eyes.

Effects of Overexposure:

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 may be 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):
None of the components of this material have been identified as known or suspected carcinogens by NTP, IARC or OSHA

FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A **Test Method Used:** -- **Flammable Limits:** N/A **LEL:** -- **UEL:** --

Hard Cemented Carbide Product is not a fire hazard. Dusts generated in grinding operations may ignite if allowed to accumulate and subjected to an ignition source.

Extinguishing Media: For powder fires, smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.

Special Fire Fighting Procedures: For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire involving this material, fire fighters should use self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

REACTIVITY DATA

Stability.....Unstable
Stable X

Conditions to Avoid.....N/A

Incompatibility.....Contact of dust with strong oxidizers may cause fire or explosions.

Materials to Avoid.....Strong acids

Hazardous Decomposition Products..... None

Hazardous Polymerization.....May Occur
Will not occur X

Conditions to Avoid..... N/A

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 wet cleanup. 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.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use an appropriate NIOSH approved respirator if airborne dust 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 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: Safety glasses with side shields or goggles are recommended.

Other Protective Equipment: N/A

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 elvels which exceed PEL or TLV), wet dust mop or 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.

In case of questions please call:
LEXINGTON CUTTER, INC.
(941) 739-2726

Issue Date: December, 1988
Supersedes: 11/25/85
Revised: December, 1997

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Manufacturer's Name: Lexington Cutter, Inc.
Telephone No.: (941) 739-2726
Address: 2951 63rd Avenue East, Bradenton, Florida 34203
Date Prepared: December, 1988
Trade Name: (Label Identity):
Steel Bodies (in Carbide - Tipped Cutting Tools)
Chemical Name (Generic): Ferrous or Nonferrous Alloys
Common Name: High Speed, Tool & Die, Maraging, Vacuum Melted, and High Strength Steels

II. HAZARDOUS INGREDIENTS

The terms "hazardous" and "hazardous materials" as used within this MSDS should be interpreted as defined by, and in accordance with, the OSHA Hazard Communication Standard (29 CFR Part 1910, 1200) including cited Appendices, Lists, References, etc., all of which are hereby incorporated by reference.

Material or Component	CAS No.	OSHA PEL (Mg/M^3)	ACGIH TLV (Mg/M^3)
Cobalt	7440-48-4	0.1	0.1
Chromium	7440-47-3	1.0	.50
Iron	1309-37-1	10	5
Manganese	7439-96-5 (Dust)	5 (Ceiling)	5 (Ceiling)
	(Fume)	---	1
Molybdenum	7439-98-7	15	10
Nickel	7440-02-0	1	1
Vanadium	1314-62-1 (Dust)	.5 (Ceiling)	.05
	(Fume)	.1 (Ceiling)	.05
Titanium	13463-67-7	15	5
Carbon	1333-86-4	3.5 5	3.5 (As Carbon Black)
Tungsten	7440-33-7	--- ---	5
Silicon	7440-21-2 (Dust)	---	5.0
Aluminum	7429-90 (Dust)	--- ---	10
	(Fume)	--- ---	5

**Components determined by grade of material used.*

III. PHYSICAL DATA

Boiling Point..... 5000°F
Melting Point.....Approx. 2500°F
Specific Gravity (H^2O=1).....Approx. 7.8-8.2 (60°F)
Vapor Pressure.....N/A
Vapor Density (Air=1)..... N/A
Solubility in H^2O.....Insoluble
% Volatiles by Volume..... N/A
Evaporation (Butyl Acetate=1)..... N/A
Appearance & Odor.....Various shapes, solid, odorless metal

IV. FIRE AND EXPLOSION DATA

Flash Point.....None
Fire Point.....None

V. HEALTH HAZARD INFORMATION

We do not consider this product in the form it is sold to constitute a physical hazard or a health hazard. Subsequent operations such as abrading, melting, welding, cutting or processing in any other fashion may produce potentially hazardous dust or fumes which can be inhaled, swallowed, or come in contact with the skin or eyes.

Primary Routes of Entry:	Emergency First Aid:
Inhalation	Remove to fresh air, if condition continues, consult physician.
Eye Contact	Flush well with running water to remove particulate. Get medical attention.
Skin Contact	Brush off excess dust. Wash area well with soap and water.
Ingestion	Seek medical help if large quantities of material have been ingested.

Effects of Exposure: No toxic effects would be expected from exposure to the solid form of specialty steel. Prolonged, repeated exposure to fumes or dusts generated during heating, cutting, brazing or welding may or may not cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits established in 29 CFR Subpart Z.

V. HEALTH HAZARD INFORMATION (cont.)

Exposure limits: Section II lists specific ingredients and permissible exposure limits.
IMPORTANT: Determine actual exposure by industrial hygiene monitoring.
Possible Signs and Symptoms of Exposure to Dust, Welding Fumes and Gases:
Short-Term Exposure: Metallic taste; nausea, tightness of chest; fever; irritation of eyes, nose, throat and skin; loss of consciousness/death due to welding gases or lack of oxygen.
Long-Term Exposure: There are no adverse effects from the products in their solid form. Adverse effects may or may not result from long-term (chronic) exposure to dust, fume, gases, etc. that occur by way of subsequent operations on the product. Some studies would associate one (or more) of the constituents (per Section II) with the potential for neurologic, pulmonary, respiratory, skin or other disease. Chromium, cobalt and nickel in various chemical compounds have been identified as suspect human carcinogens by the I.A.R.C., N.T.P. Annual Report. We believe there are no reliable scientific studies which show that workers exposed to operations upon our alloys suffer increased incidence of lung cancer or other disease because of their exposure to the forms of chromium, nickel or other elements in our products.
Aggravation of pre-existing respiratory or allergic conditions may occur in some workers.

VI. REACTIVITY DATA

Stability.....Chemically stable
Incompatibility.....Reacts with strong acids to generate hydrogen gas
Hazardous Decomposition Products.....Metallic oxides

VII. SPILL OR LEAK PROCEDURES

Steps to be Taken in case of Release or Spill.....N/A
Waste Disposal Method.....Solids - sale as scrap for reuse
Dust, etc. - Follow Federal, State and Local regulations regarding disposal

VIII. SPECIAL PROTECTION INFORMATION

Ventilation Requirements.....General - recommended (to keep airborne concentration of dust and fumes below ACGIH TLV's)
Local - as required

PERSONAL PROTECTIVE EQUIPMENT:
Respiratory Protection.....If fumes, misting or dust condition occurs and T.L.V. as indicated is Section II is exceeded, provide NIOSH approved respirators.
Eye Protection.....Recommend approved safety glasses or goggles when working with dusty material.
Gloves.....As required
Other Clothing or Equipment.....As required

IX. SPECIAL PRECAUTIONS

Use good housekeeping practices to prevent accumulations of dusts and to keep airborne dust concentrations at a minimum. This material is potentially contaminated with coatings such as oils for preservatives and other contaminants. If the material is contaminated, special precaution (such as process control and personal protective equipment appropriate to the nature of the suspected contaminates should be taken to avoid resulting exposures when handling, cutting (thermal or mechanical) and .or heating or melting.

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