



# GENERAL MATERIAL SAFETY DATA SHEET

## the GAMMONS Hoaglund Company

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### PRODUCT: Cemented Tungsten Carbide and High-Speed Steel Cutting Tools

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#### GENERAL COMMENTS:

We do not consider this product in the form it is sold to constitute a physical or health hazard. Subsequent operations such as heating, cutting or grinding may cause some ingredients to change to a form that could affect exposed workers. The GAMMONS Hoaglund Company does not manufacture or formulate any of the steel or carbide materials used in its products. The information set forth herein has been summarized from MSDS supplied to GAMMONS by its various steel and carbide suppliers. No threshold limit values (TLV's) exist for cutting tools. TLV may be applicable to constituent elements.

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#### HEALTH HAZARD DATA

##### Primary Route of Entry:

Eye Contact  
Skin Contact  
Ingestion

##### Emergency First Aid:

Flush well with running water to remove particulate, consult Doctor  
Brush off excess dirt, wash area well with soap and water  
Seek medical help if large quantities of material have been ingested  
(ingestion of significant amount of metal is unlikely)

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#### HAZARDOUS INGREDIENTS

Component Elements	CAS No.	PEL (mg/m <sup>3</sup> )	TLV (mg/m <sup>3</sup> )	Component Elements	CAS No.	PEL (mg/m <sup>3</sup> )	TLV (mg/m <sup>3</sup> )
Carbon (C)	7740-44-0	N/A	3.5	Molybdenum (Mo)	7439-98-7	15.0	10.0
Carbon Black	1333-86-4	3.5	3.5	Nickel (Ni)	7440-02-0	1.0	1
Chromium (Cr) (+3)	7440-47-3	1.0	.05	Silicon (Si)	7440-21-3	5.0	5.0
Chromium Carbide (+3)	12012-35-0	1.0	0.5	Tantalum (Ta)	7440-25-7	5.0	5
Cobalt (CO)	7440-48-4	0.1	.1	Tungsten (W)	7740-33-7	N/A	5
Copper (CU)	7440-50-8	0.1	0.1	Tungsten Carbide (WC)	12070-12-1	N/A	5
Iron (Fe) (Fume)	1309-37-1	10.0	5.0	Vanadium (V)	1314-62-1	0.1	.05
Manganese (Mn)	7439-96-5	5.0	5.0	Vanadium Carbide (VC)	11130-21-15	0.1	.05

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## FIRST AID MEASURES:

**Inhalation:** If symptoms of pulmonary involvement occurs (wheezing, coughing, impaired breathing, etc.), move to an area with fresh air. If symptoms persist seek out medical attention.

**Skin Contact:** If a rash or irritation occurs, thoroughly wash affected area with soap and water. Seek medical attention if rash or irritation continues.

**Eye Contact:** Flush eyes with water for a minimum of 15 minutes. Remove contact lenses at once. Seek medical attention if irritation continues.

**Ingestion:** If a substantial amount is swallowed seek medical attention.

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## FIRE, EXPLOSION AND REACTIVITY DATA:

<b>Flash Point:</b>	Not applicable
<b>Lower Exposure Limit:</b>	Not applicable
<b>Upper Exposure Limit:</b>	Not applicable
<b>Stability:</b>	Chemically Stable
<b>Conditions to Avoid:</b>	Avoid generation of air dust.
<b>Incompatibility:</b>	Reacts with strong acids to generate hydrogen gas.
<b>Fire Point:</b>	Not applicable
<b>Hazardous Decomposition Products:</b>	Metallic Oxides

Cemented carbide products are not a fire hazard under normal conditions of use. However, grinding generated dust may be sensitive to static discharge or ignite if allowed to accumulate and then exposed to an ignition source.

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## ACCIDENTAL RELEASE MEASURES:

### **In Case Material is Released or Spilled:**

Clean area up using methods that avoid dust generation such as high efficiency particulate air (HEPA) vacuum, wet dust mop, or wet clean up. Use an appropriate approved respirator by National Institute of Occupational Safety and Health (NIOSH) whenever airborne concentrations of hazardous components exceed exposure limits.

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## HANDLING AND STORAGE:

Under normal operating conditions, the use of cemented carbide products does not require special safety precautions beyond normal safety procedures for handling and using cutting tools, such as gloves and safety glasses. However, operations like cutting, grinding, burning and welding of cemented carbide products may generate dust or fumes which may require special handling procedures.

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## EFFECTS OF EXPOSURE:

No toxic effects would be expected from exposure to the solid form of high-speed or carbide cutting tools. Prolonged, repeated exposure to fumes or dust generated during subsequent operations involving heating, cutting, grinding or welding may or may not cause adverse health effects associated with the listed component elements in excess of OSHA permissible exposure limits established in 29CFR 1910.1200.

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## POSSIBLE SIGNS AND SYMPTOMS OF EXPOSURE

**Short-Term Exposure:** Metallic taste, nausea, tightness of chest, fever, irritation of eyes, nose, throat and skin.

**Long-Term Exposure:** Some studies would associate one (or more) of the component elements with the potential for neurological, pulmonary, respiratory, skin and other disease. None of the component elements of these materials have been identified as known or suspected carcinogens by NTP, IARC or OSHA, except chromium and nickel. We believe there are no reliable scientific studies which show that workers using high-speed or carbide cutting tools suffer increased incidence of lung cancer or other disease because of their exposure to the forms of chromium, nickel, or other elements in our product.

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## SPECIAL PROTECTION INFORMATION:

1. **Ventilation Requirements:** Use general or local exhaust ventilation to keep airborne concentrations of dust and fumes below the TLV. Consult with a professional hygienist.
2. **Personal Protection Equipment:** Always consult a professional hygienist.
3. **Respiratory Protection:** If fumes, misting or dust conditions occur, consult a professional hygienist. Provide NOISH approved respirators.
4. **Eye Protection:** Safety glasses should always be worn when grinding or cutting; face shields should be worn when welding or burning.
5. **Gloves:** Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis.
6. **Other Clothing or Equipment:** As required.

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## PHYSICAL DATA:

**Appearance and Odor:** Various shapes, solid, odorless metal

**Boiling Point:** N/A

**Vapor Density:** N/A

**Specific Gravity:** (H<sub>2</sub>O = 1):2

**Vapor Pressure:** N/A

**% Volatiles by Volume:** N/A

**Solubility in Water:** Insoluble

**How Best Monitored:** Air Sample

## INDUSTRY CHEMICAL ANALYSIS DATA (Percent by Weight)

### HIGH SPEED STEEL TOOLS

AISI	C	Co	Cr	Cu	Fe	Mn	Mo	Ni	Si	V	W
M-1	<1.0	<1.0	<5.0	-----	Bal.	<1.0	<10.0	<1.0	<1.0	<2.0	<3.0
M-2	<1.0	<1.0	<5.0	<1.0	Bal.	<1.0	<6.0	<1.0	<1.0	<3.0	<7.0
M-3 Class 1	<2.0	-----	<5.0	-----	Bal.	<1.0	<7.0	-----	<1.0	<3.0	<7.0
M-3 Class 2	<2.0	<1.0	<5.0	<1.0	Bal.	<1.0	<7.0	<1.0	<1.0	<4.0	<7.0
M-4	<2.0	-----	<5.0	-----	Bal.	<1.0	<5.0	-----	<1.0	<5.0	<7.0
M-7	<2.0	<1.0	<5.0	-----	Bal.	<1.0	<10.0	<1.0	<1.0	<3.0	<3.0
M-10	<2.0	<1.0	<5.0	<1.0	Bal.	<1.0	<9.0	<1.0	<1.0	<3.0	<2.0
M-41	<2.0	<6.0	<5.0	-----	Bal.	<1.0	<5.0	<2.0	<1.0	<3.0	<7.0
M-42	<2.0	<9.0	<5.0	<1.0	Bal.	<1.0	<10.0	<1.0	<1.0	<2.0	<3.0
M-48	<2.0	<10.0	<4.0	-----	Bal.	<1.0	<6.0	-----	<1.0	<4.0	<4.0
M-62	<2.0	-----	<4.0	-----	Bal.	<1.0	<11.0	-----	<1.0	<3.0	<3.0
T-15	<2.0	<6.0	<5.0	-----	Bal.	<1.0	<1.0	-----	<1.0	<6.0	<6.0
A-2	<1.5	-----	<6.0	-----	Bal.	<1.0	<1.5	-----	<1.0	<1.0	-----
D-2	<2.0	-----	<13.0	-----	Bal.	<1.0	<1.0	-----	<1.0	<1.0	-----
35 Spring Steel*	<1.0	-----	<1.0	-----	Bal.	<1.0	-----	<3.0	<1.0	-----	-----
TC*	<1.0	-----	<1.0	-----	Bal.	<1.0	-----	<2.0	<1.0	-----	-----

### SOLID OR BRAZED TUNGSTEN CARBIDE TOOLS

Co	Cr	Tantalum Carbide (TaC)	Tungsten Carbide (WC)	Chromium Carbide
3-30	0-5	0-50	56-97	0-6

\* Not AISI Steel Classification