

# MATERIAL SAFETY DATA SHEET

## I. PRODUCT IDENTIFICATION

North American Tool Corporation  
215 Elmwood Avenue  
P.O. Box 116  
South Beloit, IL 61080-0116  
815-389-2300

Trade Name: HIGH SPEED STEEL TAPS  
Grade Specification Date: June 7, 2006

**PRODUCT:** High Speed Steel Cutting Tools

### 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 of the ingredients to change to a form which could affect exposed workers.

North American Tool Corporation does not manufacture or formulate any of the steel used in its products. The information set forth herein has been summarized from MSDS supplied North American Tool Corporation by its steel suppliers.

No threshold limit values (TLV's) exist for cutting tools. TLV may be applicable to constituent elements.

## II. HAZARDOUS INGREDIENTS

Components Elements	CAS NO.	PEL (mg/m <sup>3</sup> )	TLV (mg/m <sup>3</sup> )
Carbon (C)	7740-44-0	N/A	3.5
Carbon Black	1333-86-4	3.5	3.5
Chromium (cr) (+3)	7440-47-3	1.0	.05*
Cobalt (Co)	7440-48-4	0.1	.1
Copper (Cu)	7440-50-8	0.1	0.1
Iron (Fe) (Fume)	1309-37-1	10.0	5.0
Manganese (Mn)	7439-96-5	5.0	5.0
Molybdenum (Mo)	5439-98-7	15.0	10.0
Nickel (Ni)	7440-02-0	1.0	1
Silicon (Si)	7440-21-3	5.0	5.0
Tungsten (W)	7440-33-7	N/A	5
Vanadium (V)	7440-62-2	0.1	.05*

\* REGULATED AS A TOXIC CHEMICAL UNDER SECTION 313, SARA TITLE III AND 40 CFR 372

## III. PHYSICAL DATA

BOILING POINT:  $\geq 5000^{\circ}\text{F}$  Melting Point: Approximately  $2500^{\circ}\text{F}$   
Specific Gravity (H<sub>2</sub>O=1): Approx. 7.8-8.2 ( $60^{\circ}\text{F}$ ) Vapor Pressure: N/A  
Vapor Density (Air=1): N/A Solubility in H<sub>2</sub>O: Insoluble  
%Volatiles by Volume: N/A Evaporation  
(Butylacetate = 1): N/A  
Appearance and Odor: Various Shapes,  
Solid Odorless Metal

## IV. FIRE AND EXPLOSION DATA

Flash Point: None

Fire Point: None

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## V. HEALTH HAZARD INFORMATION

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We do not consider this product in the format 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 that causes a release of dust or fume may cause some of the ingredients to change to a form which could affect exposed workers.

### PRIMARY ROUTES OF ENTRY:

Inhalation - Eye Contact -  
Skin Contact - Ingestion

### EMERGENCY FIRST AID:

Remove to fresh air, if condition continues - consult physician, flush area well with running water to remove particulate. Get medical attention. Brush off excess dust. Wash area well with soap and water. Seek medical help if large quantities of material have been ingested.

### EFFECTS OF OVEREXPOSURE:

**ACUTE:** Short term overexposure to the dust, fumes and / or oxides of certain components of steel products may cause irritation of the eyes, nose or throat; or may result in metal fume fever characterized by a metallic or sweet taste, dryness and irritation of the throat, wheezing, discoloration of the tongue and flu-like symptoms.

**CHRONIC:** Excessive and prolonged overexposure to the dust fumes and / or oxide of certain components of steel products may result in chronic interstitial pneumonitis, discoloration of the skin and hair; allergic bronchitis, neoplasms or loss of coordination and balance.

### ACUTE:

CARBON (C) - Irritation of eyes and mucous membranes.  
MANGANESE (Mn) - Irritation of eyes, nose and throat; metallic taste in the mouth; acute pneumonia and pneumonitis (respiratory disease).  
IRON(Fe) - Irritation of eyes, nose and throat; metal fume fever.  
CHROMIUM(Cr) - Irritation of eyes and mucous membranes, dermatitis, skin ulcers and nasal septum perforation.  
NICKEL(Ni) - Irritation of eyes and mucous membranes, dermatitis, "nickel itch", pulmonary edema, asthma, headache and vomiting.  
MOLYBDENUM (Mo) - Irritation of eyes and mucous membranes.  
VANADIUM (V) - As vanadium pentoxide dust or fumes, it may cause irritation of eyes, nose and respiratory tract.  
ALUMINUM (Al) - Possible irritation of eyes and mucous membranes.  
COBALT (Co) - Irritation of eyes and mucous membranes.  
COPPER (Cu) - Irritation of eyes, nose and throat; metal fume fever.  
BORON (B) - Irritation of nose and throat.  
TITANIUM (Ti) - Considered a physiologically inert dust, however, high concentrations may cause irritation of eyes and mucous membrane.  
TUNGSTEN (W) - No adverse health effects have been reported in humans.

### CHRONIC:

CARBON (C) - Irritation of eyes and mucous membranes.  
MANGANESE (Mn) - Inhalation of fumes and dust can cause central nervous system disturbances, increased upper respiratory disorders and infections, cumulative lung damage, psychiatric disorders, liver cirrhosis and anemia.  
IRON (Fe) - Inhalation of iron oxide fumes and dust may cause bronchitis, conjunctivitis, choroiditis, retinitis and siderosis of tissues.  
CHROMIUM (Cr) - The toxicity and health hazards of chromium are heavily dependent upon its oxidation state. Trivalent and devalent chromium, as in chromium metal and chromium-containing alloys have a low order of toxicity. The hexavalent form (chromates and chromic acids) may cause irritant and allergic contact dermatitis, skin ulcers and nasal irritation varying from rhinitis to perforation of the nasal septum. Reported carcinogen.

NICKEL (Ni) - Nickel dust or fume can cause sensitization dermatitis, "nickel itch", and may cause cancer of the paranasal sinuses and lungs.  
 MOLYBDENUM (Mo) - Human industrial poisoning by molybdenum has yet to be reported.  
 VANADIUM (V) - As vanadium pentoxide dust or fumes, it may cause irritation of eyes, nose and respiratory tract (more severe than acute exposure), chronic bronchitis and allergic skin rash.  
 COBALT (Co) - May cause allergic skin rashes and respiratory disease.  
 COPPER (Cu) - Skin irritation; discoloration of the skin or the hair and metal fume fever.  
 BORON (B) - Possible irritation of the respiratory tract and nose bleeds.  
 TANTALUM (Ta) - Dust may be slight irritant to eyes, nose and throat.  
 TITANIUM (Ti) - Considered a physiologically inert dust; however, high concentrations may cause irritation of eyes and mucous membranes.  
 TUNGSTEN (W) - No adverse health effects have been reported in humans.

**CARCINOGENICITY:**

	<b>NTP</b>	<b>IARC MONOGRAPHS</b>	<b>OSHA REGULATED</b>
CHROMIUM (Cr)	Yes	Yes	Yes, PEL established
NICKEL (Ni)	Yes	Yes	Yes, PEL established

**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  
 Dust, etc. - Follow Federal, State and local regulations regarding disposal

**VII. SPECIAL PROTECTION INFORMATION**

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

**VIII. TRANSPORTATION INFORMATION**

**HAZARD CLASS:**

This product is not hazardous as defined by the Department of Transportation. (USA) This product is "Not Regulated" under the Transportation of Dangerous Goods Act. (CAN)