



MATERIAL SAFETY DATA SHEET

SECTION 1

COMPANY AND PRODUCT INFORMATION

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Product Name: All Seco Tools Inc.® Boring Bars, Cartridges, Milling Cutters and Tool Holders
Product Descriptions: Tool Steel
Company Name: Seco Tools Inc.
Date Prepared: March 21, 2007
Emergency Telephone: CHEMTREC: (800) 424-9300
Non-Emergency Telephone: (586) 497-5000 - Fax (586) 497-5362
NFPA Hazard Rating: HEALTH 0; FLAMMABILITY 0; REACTIVITY 0

SECTION 2

COMPOSITION, INFORMATION ON INGREDIENTS

Table with 4 columns: Material (CAS #), Percent by Weight, OSHA PEL-TWA (mg/m³), and ACGIH TLV-TWA (mg/m³). Rows include Base Metal (Iron), Alloying Elements (Aluminum, Carbon, Chromium, Cobalt, Copper, Lead, Manganese, Molybdenum, Nickel, Phosphorous, Silicon, Sulfur, Tungsten, Vanadium, Zinc).

Ceiling Limit is a concentration that should not be exceeded at any time during the workday.

NIC means notice of intent to change for 1999

Note: The above listing is a summary of elements used in alloying steel. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

Emergency Overview:

Boring bars, cartridges, milling cutters and tool holders in their natural state do not present an inhalation, ingestion, or contact health hazard. However, operations such as welding, burning, sawing, grinding and possibly machining, which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates may present hazards. The above operations should be performed in well-ventilated areas. The major exposure route is inhalation.

Primary Routes of Exposure: Inhalation, skin contact

Acute Health Effects:

Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose, and throat. High concentrations of fumes and dusts of iron oxide, manganese, copper, zinc, and lead may result in metal fume fever. Typical symptoms consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever. These symptoms may persist from 12 to 48 hours.

Chronic Health Effects:

Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed:

Chromium or nickel - various forms of dermatitis, inflammation and/or ulceration of the upper respiratory tract, and possibly cancer of nasal passages and lungs. Based on available information, there does not appear to be any evidence that exposure to welding fume induces human cancer.

Cobalt - Chronic exposure to dusts, fumes and mists containing cobalt carry the potential to cause permanent respiratory diseases, including occupational asthma, interstitial pneumonitis and fibrosis (hard-metal disease), and emphysema. Symptoms include productive cough, wheezing, dyspnea upon exertion, pleuritic chest pain, and weight loss. Skin sensitization is noted in a small percentage of cases.

Copper – irritation of the upper respiratory tract and metal fume fever, a flu-like illness.

Iron (as iron oxide) – prolonged exposure may produce pulmonary effects and/or siderosis.

Lead - prolonged exposures can cause behavioral changes, kidney damage, peripheral neuropathy characterized by decreased hand grip strength, and adverse reproductive effects.

Manganese - bronchitis, pneumonitis, lack of coordination

Tungsten - some evidence of pulmonary involvement such as cough

Vanadium (as vanadium pentoxide) –eye and respiratory tract irritant.

Carcinogenicity:

Cobalt is listed by IARC as Category 2B – possibly carcinogenic to humans. Cobalt is listed by ACGIH as an animal carcinogen. Cobalt is known to the State of California to cause cancer.

Chromium is listed by NTP as a human carcinogen. Chromium is listed by IARC as Category 3 – unclassifiable as to carcinogenicity in humans. Chromium is listed by ACGIH as A4 – not classifiable as a human carcinogen.

Lead is listed by NTP and IARC as a human carcinogen. Lead is listed by ACGIH as A3 – confirmed animal carcinogen with unknown relevance to humans. Lead is known to the State of California to cause cancer.

Nickel is listed by NTP and IARC as a human carcinogen. Nickel is listed by ACGIH as A1 – confirmed human carcinogen. Nickel is known to the State of California to cause cancer.

Inhalation:

If symptoms of pulmonary involvement develop (e.g., coughing, wheezing, dyspnea, etc.), remove to fresh air. If symptoms persist, seek medical attention.

Skin Contact:

If irritation or rash occurs, thoroughly wash affected area with soap and water. If irritation or rash persists, seek medical attention.

Eye Contact:

Remove contact lenses at once. Flush eyes with water for at least fifteen minutes. If irritation persists, seek medical attention.

Ingestion:

If swallowing of greater than trace amounts is suspected, drink large amounts of water.

SECTION 5

FIRE FIGHTING MEASURES

Flash Point: Not applicable **Lower Explosive Limit:** Not applicable **Upper Explosive Limit:** Not applicable

Tool steel products are not a fire hazard under normal conditions of use. Tool steel dust generated in grinding may be sensitive to static discharge or ignite if allowed to accumulate and be exposed to an ignition source.

Extinguishing Media:

For dust fires, smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.

Special Fire Fighting Procedures:

For a dust fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large tool steel fire, use a self-contained breathing apparatus. See Section 3 and 8 for specific hazard identification and exposure control measures.

Unusual Fire and Explosion Hazards:

Dusts may present a fire or explosion hazard under rare conditions of particle size, dispersion, concentration, and strong ignition source. This is not expected to be a hazard under normal handling conditions.

Hazardous Combustion Products:

Oxides (respirable particulates) of aluminum, cobalt, titanium, and tungsten; carbon dioxide, and carbon monoxide. See Section 3 for specific hazard identification.

SECTION 6

ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled:

Clean area using methods that avoid dust generation, such as a high-efficiency particulate air (HEPA) vacuum, wet dust mop, or wet clean-up. Use an appropriate National Institute of Occupational Safety and Health (NIOSH)-approved respirator whenever airborne concentrations of hazardous components exceed exposure limits listed in Section 2.

SECTION 7

HANDLING AND STORAGE

Under normal operating conditions, the use of tool steel products do not require special safety precautions beyond normal safety procedures for handling and using cutting tools, such as safety glasses with side shields and gloves.

Operations such as grinding, cutting, burning, and welding of tool steel products may generate dusts or fumes which may require special handling procedures.

Hygienic Practices:

Wash hands thoroughly after handling, and before eating or smoking. Wash exposed skin at the end of the work shift. Smoking and consumption of food or beverages should be restricted from areas where hazardous components may be present. Do not shake clothing, rags, or other items to remove dust. Do not use compressed air to remove dust. Dust should be removed by laundering or vacuuming (with appropriate filters).

Precautions to be Taken in Handling and Storage:

Maintain good housekeeping procedures to prevent dust accumulation during grinding. Avoid inhaling dust and direct skin contact with dust. See Section 3 for specific health hazards.

Other Precautions:

Other precautions not indicated.

Note:

Periodic medical monitoring is recommended for individuals regularly exposed to dust or fumes, with particular attention to any potential sensitization effects of alloy metals.

SECTION 8

EXPOSURE CONTROLS, PERSONAL PROTECTION

Personal Protection:

Wear safety glasses with side shields when grinding or cutting tool steel products. Use a NIOSH-approved respirator with a HEPA cartridge whenever airborne concentrations of hazardous components exceed exposure limits listed in Section 2. Wear protective gloves (leather or rubber) or barrier cream, and protective clothing to prevent skin contact with dusts. See Section 3 for specific health hazards.

Ventilation:

Use adequate local (preferably) or general exhaust ventilation to ensure that concentrations of dusts or fumes do not exceed exposure limits.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Gray-black solid with metallic luster, Odorless	Specific Gravity (H₂O=1):	Not applicable
Boiling Point:	Not applicable	Percent Volatile by Volume:	Not applicable
Vapor Pressure (mm Hg):	Not applicable	Evaporation Rate:	Not applicable
Vapor Density (Air=1):	Not applicable	Solubility in Water:	Insoluble

SECTION 10

STABILITY AND REACTIVITY

Stability: Stable

Conditions to Avoid: None known

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

Hazardous Decomposition Products: Respirable metal oxide fume.

Hazardous Polymerization: Will Not Occur

Cobalt: The International Agency for Research on Cancer (IARC) lists cobalt and cobalt compounds as Category 2B carcinogens (Possibly Carcinogenic to Humans).

Rat Oral LD_{Lo}: 1500 mg/kg

Rabbit Oral LD_{Lo}: 20 mg/kg

Rat Intraperitoneal LD_{Lo}: 250 mg/kg

Rabbit Intratracheal LD_{Lo}: 100 mg/kg

Rat Intravenous LD_{Lo}: 100 mg/kg

There is inadequate evidence for the carcinogenicity of chromium metal (7440-47-3) and most trivalent chromium compounds in experimental animals.

Lead is listed by IARC as Category 2B.

Rat Intraperitoneal LD_{Lo}: 1000 mg/kg

Pigeon Oral LD_{Lo}: 160 mg/kg

Nickel is listed by NTP and IARC as a human carcinogen.

Rat Intraperitoneal LD_{Lo}: 12 mg/kg

Dog Intravenous LD_{Lo}: 10 mg/kg

Mouse Intravenous LD_{Lo}: 50 mg/kg

Rabbit Intraperitoneal LD_{Lo}: 7 mg/kg

Guinea pig Oral LD_{Lo}: 5 mg/kg

Cat Subcutaneous LD_{Lo}: 12.5 mg/kg

Rabbit Subcutaneous LD_{Lo}: 7.5 mg/kg

Vanadium pentoxide is not listed by NTP.

Rat Oral LD₅₀: 10 mg/kg

Mouse Oral LD₅₀: 23 mg/kg

Rat Subcutaneous LD₅₀: 14 mg/kg

Mouse Subcutaneous LD₅₀: 10 mg/kg

Rat Intraperitoneal LD₅₀: 12 mg/kg

Rabbit Subcutaneous LD_{Lo}: 20 mg/kg

Guinea pig Subcutaneous LD_{Lo}: 20 mg/kg

Rabbit Intravenous LD_{Lo}: 10 mg/kg

Rat Intravenous LD_{Lo}: 25 mg/kg

SECTION 12

ECOLOGICAL INFORMATION

No data available.

SECTION 13

DISPOSAL INFORMATION

Waste Disposal Method:

Dispose of in accordance with appropriate government regulations. May be sold as scrap for reclamation.

SECTION 14

TRANSPORTATION INFORMATION

DOT Proper Shipping Name:

Not regulated by this mode of transportation

IMO Proper Shipping Name:

Not regulated by this mode of transportation

IATA Proper Shipping Name:

Not regulated by this mode of transportation

AFI Prop. Shipping Name:

Not regulated by this mode of transportation

OSHA:

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. Dust generated while using this product may be hazardous as noted in Sections 2 and 3.

TSCA:

Components of this product are listed on the TSCA inventory.

SARA:

Aluminum, chromium, cobalt, copper, lead, manganese, nickel, phosphorus, vanadium, and zinc are subject to the requirements of Section 313 of Title III of Superfund Amendment and Reauthorization Act of 1986.

State Regulatory Information:

This product contains chromium, cobalt, lead, and nickel, which are listed in California Proposition 65 as known cancer-causing chemicals.

SECTION 16

OTHER INFORMATION

Users Responsibilities:

This Material Safety Data Sheet provides information consistent with recommended applications of tool steel products and anticipated non-routine activities involving these products. It is the user's responsibility to identify and protect against health and safety hazards presented by modification of tool steel products after manufacture. Individuals handling tool steel products, should be informed of all relevant hazards and recommended safety precautions, and should have access to the information contained in this MSDS.

Disclaimer:

The information contained herein is based upon data provided by manufacturers and suppliers of raw materials used in the manufacture of tool steels. The information is offered in good faith as accurate and correct, but no representations, guarantees, or warranties of any kind are made as to its accuracy or completeness, suitability for particular applications, hazards connected with the use of the product, or the results to be obtained from the use thereof. User assumes all risk and liability of any use or handling of any material beyond Seco Tools Inc's. control. Variations in methods, conditions, equipment used to store, handle, or process the material, and hazards connected with the use of the tool steel products are solely the responsibility of the user and remain at its sole discretion.

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