

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product name:	High Speed Steel Cutting Tools
Chemical name (Generic):	Ferrous Alloy
Synonyms:	Tool Steel
Product Use:	Metalworking Tools
Supplier Address:	Drillco Cutting Tools 13011 South Choctaw Drive Baton Rouge, LA 70815 USA
Emergency phone number:	CHEM-TEL INC 1-800-255-3924
General Information:	800-851-3821

SECTION 2 – HAZARDS IDENTIFICATION

Emergency Overview:	During normal operation and usage, high speed steel products do not present inhalation, ingestion, or other chemical hazards. However, operations such as grinding, cutting, machining, burning, and welding of such products may release dusts, fumes, or vapors which may present health hazards, if the exposure limits described in Section 2 are exceeded. The above operations should be performed in well ventilated areas. The health hazards described below relate to these non-routine operations, as well as exposure to component materials.
Primary route(s) of entry:	Grinding steel products will produce a dust of potentially hazardous ingredients that can be inhaled, swallowed or come in contact with skin or eyes.
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.
Carcinogen listed in: NTP (National Toxicology Program) IARC (International Agency for Research on Cancer) Monographs OSHA (Occupational Safety and Health Administration)	Chromium and Nickel Cobalt listed as Group 2B by IARC. Chromium listed as Group 3. Nickel listed as Group 2B. Chromium and Nickel
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:	Prolonged exposure may produce pulmonary effects and/or siderosis.
Manganese:	Bronchitis, pneumonitis, lack of coordination
Tungsten:	Some evidence of pulmonary involvement such as cough
Vanadium:	Eye and respiratory tract irritant.

Signs and symptoms of exposure

Inhalation:	Dust from grinding may cause irritation of the nose and throat. It also
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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, and 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 irritation or an allergic skin rash due to cobalt sensitization. Certain skin conditions, such as dry skin, may be aggravated by exposure.

Eye contact:

May cause eye irritation

Ingestion:

None expected during normal use conditions. Swallowing large pieces may cause obstruction of the gastrointestinal tract.

SECTION 3 - COMPOSITION, INFORMATION ON INGREDIENTS

Material	% by Weight	CAS NUMBER	OSHA PEL	ACGIH TLV
Carbon	.01-3	7440-44-0	3.5 mg/m ³	3.5 mg/m ³
Chromium	0.01-20	7440-47-3	0.5 mg/m ³	0.5 mg/m ³
Cobalt	0-15	7440-48-4	0.1 mg/m ³	0.02 mg/m ³
Copper	0-2	7440-50-8	1 mg/m ³	1 mg/m ³
Iron	70-90	7439-89-6	10 mg/m ³	5 mg/m ³
Manganese	0.04-3	7439-96-5	5 mg/m ³	0.2 mg/m ³
Molybdenum	0.01-12	7439-98-7	15 mg/m ³	10 mg/m ³
Nickel	0-10	7440-02-0	1 mg/m ³	1.5 mg/m ³
Silicon	0-3	7440-21-3	15 mg/m ³	10 mg/m ³
Tungsten	0-25	7440-33-7	-	5 mg/m ³
Vanadium	0-5	1314-62-1	0.5 mg/m ³	0.5 mg/m ³

NFPA Hazard Rating Health 1; Flammability 0; Reactivity 0

SECTION 4 – FIRST AID MEASURES

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 areas with soap and water and isolate from further 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 swallowed, dilute with a large amount of water, induce vomiting, and seek medical attention.

Medical conditions generally aggravated by exposure:

Persons with pre-existing respiratory disease may be at risk from exposure.

SECTION 5 – FIREFIGHTING MEASURES

Fire and Explosion Hazards:

Fine metal particles produced when ground, sawed etc. can burn. High concentrations of these particles in the air may present an explosion hazard.

Flash point:

None Reported

Extinguishing media:

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

Special fire-fighting procedures or equipment:

For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a

Unusual fire and explosion hazards: large fire, fire fighters should use self-contained breathing apparatus. Do not release runoff from fire control methods to swales or waterways. 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.

Steel is not a fire hazard under normal conditions of use. Dusts generated in grinding operations may ignite if allowed to accumulate and subjected to an ignition force.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Clean up using methods to avoid dust generation such as vacuum (with appropriate filters), wet dust mop, or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Operations such as welding, dust generation, or fume generation can result in hazardous exposure to the elements present in the alloy if necessary precautions are not taken. Protect against dust and fume inhalation and skin or eye contact. Use only with local exhaust ventilation.

Conditions for Safe Storage: Store in a dry place. Store in a manner that prevents accidental environmental contamination from traces of industrial lubricants or wetting oils.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective gloves: Cloth or leather gloves are recommended when contact with dust or mist is likely.

Eye protection: Wear safety glasses or goggles with side shields. Contact lenses should not be worn when handling these materials. Employer should provide an eye wash station within the immediate work area for emergency use.

Other protective clothing or equipment: Hearing protection might be required. Always use machine guards and wear safety glasses and protective clothing to prevent injury in the event of tool breakage. Soiled clothing should be laundered separately.

Respiratory protection (specify type): Use an appropriate NIOSH approved respirator if airborne dust concentration exceeds the appropriate PEL or TLV. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

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

Work/hygienic practices: Wash hands thoroughly after handling and before eating or smoking. Wash exposed skin at the end of the work shift. Do not shake clothing, rags, or other items to remove dust. Dust should be removed by washing or vacuuming (with appropriate filters).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	Approx. 5000° F
Vapor pressure at 20 °C:	N/A
Vapor density (air = 1):	N/A
Solubility in water:	Not Soluble
Appearance and odor:	Grey-Black solid with metallic luster, odorless. Various shapes.
Specific gravity (H ₂ O = 1.0):	N/A
Melting point:	Approx. 2500° F
Evaporation rate (butyl acetate = 1):	N/A

SECTION 10 – STABILITY AND REACTIVITY

Stability:	Stable under normal temperatures and pressures.
Conditions to avoid:	Incompatible Materials
Incompatibility (materials to avoid):	Strong Acids, Strong Oxidizers
Hazardous decomposition or by-products:	None
Hazardous polymerization will/will not occur:	Will not occur
Oxidizer/Not an oxidizer:	Not an oxidizer

SECTION 11 – TOXICOLOGICAL INFORMATION

Molybdenum:	Molybdenum is an eye and mucous membrane irritant. Individuals with a history of kidney, chronic respiratory, or liver disease may be at increased risk from exposure. Rat Intraperitoneal LD _{Lo} : 114 mg/kg Rabbit Intratracheal LD _{Lo} : 70mg/kg
Chromium:	Carcinogenic Status: There is evidence of increased incidence of lung cancer among chromium alloy workers. However, according to the International Agency for Research for Cancer (IARC), the chromium compounds responsible cannot be specified.
Cobalt:	Carcinogenic Status: IARC lists Cobalt and Cobalt compounds as Category 2B carcinogens (possibly carcinogenic to humans). Cobalt fumes or dust may cause pulmonary, skin, or eye irritation. Cobalt may be a sensitizing agent for skin and respiratory systems. Chronic exposure may affect the heart, pancreas, thyroid gland, or bone marrow. Rat Oral LD _{Lo} : 1500mg/kg. Rat Intraperitoneal: LD _{Lo} 250mg/kg. Rat Intravenous LD _{Lo} : 100mg/kg. Rabbit Oral LD _{Lo} : 20mg/kg. Rabbit Intratracheal LD _{Lo} : 100mg/kg

SECTION 12 – ECOLOGICAL INFORMATION

No Data available

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method:	This is a valuable material that should be sent to an appropriate reclamation facility if available. If material cannot be sent to a reclamation facility, disposal should be made in compliance with federal, provincial/state, and local environmental regulations.
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SECTION 14 – TRANSPORT INFORMATION

DOT Proper Shipping Name:	Not regulated by this mode of transportation
IATA Proper Shipping Name:	Not regulated by this mode of transportation
AFI Proper Shipping Name:	Not regulated by this mode of transportation

SECTION 15 - REGULATORY INFORMATION

OSHA Hazard Communication Standard 29 CFR 1910.1200	Not hazardous under this criteria. Dust generated while using this product may be hazardous as noted in this document.
Toxic chemical(s) subject to the supplier notification requirements of section 313 Title III of the Superfund Amendment and Reauthorization Act of 1986 (SARA) and the requirements of 40 CFR part 372	Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium, are subject to these requirements
TSCA	Components of this product are listed on the TSCA inventory
Canada	The Canadian Workplace Hazardous Materials Information System (WHMIS) classification for Cobalt is D2B.
California Proposition 65	This product contains cobalt which is listed in California Proposition 65 as known cancer causing chemicals.

SECTION 16 - OTHER INFORMATION

User Responsibilities- Drillco does not manufacture any of the steel used in its products. The information presented in this SDS has been compiled from sources deemed reliable. The information contained herein is based upon data provided by manufacturers and suppliers of raw materials used in the manufacture of high speed steel products. 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 Drillco's control. Variations in methods, conditions, equipment used to store, handle, or process the material, and hazards connected with the use of the product are solely the responsibility of the user and remain at its sole discretion. It is the responsibility of the buyer/user to insure compliance with federal, state, provincial and local laws and regulations. The information cannot be transferred to another product. In the case of mixing the product with other products or in the case of processing, the information on this safety information sheet is not necessarily valid.

Abbreviations Used:

OSHA	Occupational Safety and Health Administration
CAS	Chemical Abstract Service
ACGIH	American Conference of Government Industrial Hygienists
NOHSC	Not regulated by this mode of transportation
NTP	National Toxicology Program
IASC	International Agency for Research on Cancer
NIOSH	The Nation Institute for Occupational Safety and Health
TSCA	Toxic Substances Control Act
SARA	Superfund Amendment and Reauthorization Act
PEL	Permissible Exposure Limits
TLV	Threshold Limit Values