

**MATERIAL SAFETY
DATA SHEET**

COMPANY NAME:

Precision Twist Drill Company

Address:

301 Industrial Ave.

Telephone:

Crystal Lake, IL 60012

(815) 459-2040

Chemical Name:

High Speed Steel

Trade Name and Synonyms:

High Speed Steel Drill Bit

Chemical Family:

High Speed Steel

PHYSICAL DATA

Appearance and odor:	Silver metal/no odor	Molecular weight:	N/A
Boiling point:	N/A	Specific gravity (H2O=1)	11.0 to 15.5
Vapor pressure (mm Hg):	N/A	Percent volatile by volume:	0
Vapor density (Air=1):	N/A	Evaporation rate:	N/A
Solubility in water:	Insoluble	How best monitored:	Air sample

HAZARDOUS INGREDIENTS

MATERIAL	PERCENT BY WEIGHT	OSHA PEL	ACGIH TLV	CAS NO.
Copper (as dust)	0.08 – 1.9	1 mg/m3	1 mg/m3	7440-50-8
Iron (as Fe2O3)	80 – 90	10 mg /m3	5 mg/m3	1309-37-1
Lead	.003 max	0.05 mg/m3	0.05 mg/m3	7439-92-1

MAY BE COATED WITH ANY OF THE FOLLOWING:

Aliphatic Hydrocarbons	0 – 0.5	5 mg/m3	5 mg/m3	64742-47-8
Aluminum oxide	0 – 0.5	15 mg/m3	10 mg/m3	1344-28-1
Boron carbide (as BO)	0 – 0.5	15 mg/m3	10 mg/m3	12069-32-8
Chromic acid flake (as Cr)	0 – 0.5	0.5 mg/m3	0.5 mg/m3	1332-82-0
Chromium carbide (as Cr)	0 – 0.5	0.5 mg/m3	0.5 mg/m3	12011-60-8
Chromium nitride (as Cr)	0 – 0.5	0.5 mg/m3	0.5 mg/m3	24094-93-7
Graphite	0 – 0.5	15 mg/m3	2 mg/m3	7782-42-5
Paraffinic petroleum distillate	0 – 0.5	Not established	Not established	64742-56-9
Titanium aluminum nitride	0 – 0.5	Not established	Not established	Not established
Titanium carbo nitride	0 – 0.5	Not established	Not established	1234-09-0
Titanium nitride	0 – 0.5	Not established	Not established	25583-20-4
Zinc (as ZnO dust)	0 – 0.5	15 mg/m3	10 mg/m3	1314-13-2

HEALTH HAZARD DATA

“Warning: This product contains, and when used, produces chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.” (Proposition 65, California Health and Safety Code Section 25249.5 et seq.)

Routes of exposure: Intact high speed steel normally does not present a health hazard; however dust or fumes from grinding, drilling, or heating this product can be inhaled, swallowed, or come into contact with the skin or eyes. The following health hazard data addresses exposure to these dusts and fumes.

Acute (short term) effects of overexposure:

Inhalation: Dust or fumes from grinding, welding, brazing, drilling, cutting, or heating this product can cause irritation of the nose, mouth, throat, eyes, upper respiratory tract and lungs when inhaled. Inhalation of high levels of cobalt and nickel may result in fluid build-up in the lungs (pulmonary edema). Symptoms may include productive cough, wheezing, shortness of breath and chest tightness.

Skin Contact: Skin contact with cobalt, nickel and chromium may cause irritation and dermatitis in sensitive individuals.

Eye Contact: Eye contact with dusts and fumes may cause eye irritation and conjunctivitis.

Ingestion: Ingestion of quantities sufficient for toxicity is not anticipated under normal working conditions.

Chronic (long term) effects of overexposure:

Inhalation: Interstitial fibrosis (lung scarring) may develop due to long term inhalation of cobalt, nickel and heavy metal dusts or fumes. Long term inhalation of chromium may damage the lungs and respiratory tract. Recent data indicates that metal nickel may not be carcinogenic to humans; however inorganic nickel compounds can cause nasal and lung cancer. Workers with nickel sensitivity may be predisposed to cobalt sensitivity. Individuals who are sensitive to nickel and/or cobalt may develop allergic

asthma. In rare instances, industrial exposure to cobalt has damaged the heart muscle resulting in heart failure. Cobalt may also adversely affect other organs. These conditions may lead to permanent disability or death. Limited evidence links molybdenum with chronic respiratory and systemic effects.

Skin: Skin contact with this product may cause irritation and skin rash. Contact dermatitis may develop as a result of sensitization to nickel, cobalt and chromium.

Eye: Eye contact with this product may cause eye irritation and/or conjunctivitis.

Medical conditions aggravated by exposure: Exposure may exacerbate pre-existing respiratory, skin, and Allergic conditions.

Emergency and first aid procedures:

Inhalation: If high concentrations are inhaled or worker exhibits trouble breathing, remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek immediate medical attention.

Skin: 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: If irritation occurs, flush with large 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

Cobalt is listed as an animal carcinogen by ACGIH and as a possible human carcinogen by IARC. Metallic nickel and alloys are listed as possible human carcinogens by IARC and is considered reasonably anticipated to be carcinogenic by NTP. Nickel is on the ACGIH Notice of Intended Changes as a confirmed human carcinogen for insoluble nickel compounds and not a human carcinogen for metallic nickel. Chromium metal is not considered a human carcinogen by ACGIH, but water soluble and insoluble chromium VI compounds are considered confirmed human carcinogens by ACGIH, IARC, and NTP. Lead is listed as an animal carcinogen by ACGIH and as a possible human carcinogen by IARC and NTP.

FIRE AND EXPLOSION HAZARD DATA

Flash point: N/A Test method used: N/A
Flammable limits: N/A LEL: N/A UEL: N/A

Dusts produced from drilling may be flammable and may pose a fire hazard if allowed to accumulate.

Extinguishing media: For powder fires, use dry sand, dry dolomite, dry graphite powder. Dry chemical, carbon dioxide or foam may also be used. Water spray can be used to cool adjacent surfaces.

Unusual fire and explosion hazards: Under rare conditions of small particle size and dispersion, dusts may be spontaneously combustible or explosive.

Special fire fighting procedures: Use extinguishing water stream carefully and contain runoff. Firefighters should wear a NIOSH/MSHA approved, full face piece, self-contained breathing apparatus (SCBA) operated in a positive pressure mode and full turnout gear.

REACTIVITY DATA

Stability: This product is stable under normal use conditions.

Reactivity: Not reactive under recommended conditions of handling, storage, processing and use. Dusts may react with strong acids and oxidizers.

Hazardous combustion products: Metallic oxides.

Hazardous polymerization: Not expected to occur.

SPILL OR LEAK PROCEDURES

For release of dusts from drilling and machining operations, isolate area and do not walk through or otherwise scatter spilled material. Remove dusts using a vacuum equipped with a filter sufficient to remove metal dusts and prevent their recirculation (a high efficiency particulate air filter is recommended). If an appropriate vacuum is unavailable, use misting, wet dust mop, or other wet clean-up methods to remove dusts. Clean-up personnel should wear personal protective equipment including respiratory protection appropriate for the magnitude of exposure.

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/MSHA approved respirator if airborne dust concentrations exceed the appropriate PEL or TLV. Respiratory protection must be worn in accordance with 29 CFR 1910.134.

Ventilation: Provide local exhaust ventilation in areas where dusts or fumes may be released to control air contaminants to acceptable exposure guidelines.

Protective gloves: Protective gloves are recommended for working with this product.

Eye protection: Safety glasses with side shields or goggles are recommended.

SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Maintain good housekeeping procedures to prevent dust accumulation during product use. Avoid dust inhalation and direct skin contact with dust.

Other procedures: Clean up using methods which avoid dust generation such as a vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

Change contaminated or dusty clothing. Do not remove clothing until vacuumed. Clean work clothing should be worn daily. Do not remove dust from clothing or rags by blowing or shaking. Do not eat, drink or smoke in work areas.

Wash hands thoroughly after handling, before eating or smoking. Wash exposed skin at 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 filter) the clothing, rags or other items.

Periodic medical examinations are recommended for individuals regularly exposed to dust or mist.

COMPANY INFORMATION

In case of question, please call: Precision Twist Drill Company
(815) 459-2040

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