

# Reiff and Nestor Co. - Safety Data Sheet

## SECTION 1- IDENTIFICATION

**Product Name:** High Speed Steel Cutting Tools

**Date Prepared:** November 2014

**Product Description:** M1, M2, M4, H.S.S. Taps for cutting threads in holes

**Manufacturer:** Reiff & Nestor Co., 50 Reiff St. Lykens, Pa 17023

**Emergency Telephone:** 1-800-521-3422

**NFPA Hazard Rating:** HEALTH 1; FLAMMABILITY 0; REACTIVITY 0 (0=Max Safety, 5=Extreme Hazard)

## SECTION 2 – HAZARDS IDENTIFICATION

**Health Hazards:** This product is in the form of a metallic solid, as sold is not considered a physical or health hazard. Subsequent operations as grinding, brazing, welding, melting, or cutting may produce potentially hazardous dust or fumes which may be inhaled, swallowed, or come in contact with skin or eyes. This may or may not result in long term (chronic) exposure adverse effects.

**Inhalation:** Irritant

*Acute Overexposure:* Excessive inhalation may result in irritation of eyes, nose, and throat. May also lead to metal fume fever. Typical symptoms consist of metallic taste in the mouth, chills, fever, and nausea. Metal fume fever begins 4 to 12 hours after exposure and may last 24 hours without causing permanent damage.

*Chronic Overexposure:* May cause respiratory irritation, bronchitis, allergic respiratory reaction, obstructed airways, build-up of dust in the lungs, damage to lung tissue, and lung disease. Along with symptoms as described in acute overexposure, especially inflammation of the respiratory tract, nose and throat irritation, violent coughing, wheezing, rasping, and shortness of breath. There may also be blood changes, liver and kidney damage, and increased susceptibility to respiratory changes.

**Eye contact:** Irritant

*Acute Overexposure:* May cause irritation with redness, pain, and itching.

*Chronic Overexposure:* May cause Conjunctivitis.

**Skin contact:** Irritant

*Acute Overexposure:* May cause irritation.

*Chronic Overexposure:* May cause inflammation and/or rash (irritant or allergic contact dermatitis).

**Ingestion:** Irritant

*Acute Overexposure:* Ingestion of large amounts of steel dust is highly unlikely. However, ingestion of small amounts may occur by eating with contaminated hands leading to irritation.

*Chronic Overexposure:* May produce the same symptoms as acute overexposure. May also adversely affect the pancreas, thyroid gland, heart, and bone marrow.

## SECTION 3-COMPOSITION/INFORMATION ON INGREDIENTS

<u>Alloy Elements</u>	<u>CAS Number</u>	<u>% by weight</u>	<u>OSHA PEL(mg/m<sup>3</sup>)</u>	<u>ACGIH TVL(mg/m<sup>3</sup>)</u>
Carbon (C)	7440-44-0	0.78 – 1.40	.35 as Carbon Black	.35 as Carbon Black
Chromium (Cr)*	7440-47-3	3.50 – 4.5	1.0 as Chrome	0.5 as Chrome
Copper (Cu)	7440-50-8	0.75 max.	0.1 as fume 1.0 as dust	0.2 as fume 1.0 as dust
Iron (Fe)	1309-37-1	Balance	10 as Iron Oxide	5.0 as Iron Oxide
Manganese (Mn)*	7439-96-5	0.15 – 0.40	5.0 as dust (ceiling limit)	0.2 as dust

1.0 as fume  
3.0 as fume (STEL)

1.0 as fume  
3.0 as fume (STEL)

<u>Alloy Elements</u>	<u>CAS Number</u>	<u>% by weight</u>	<u>OSHA PEL (mg/m<sup>3</sup>)</u>	<u>ACGIH TLV (mg/m<sup>3</sup>)</u>
Molybdenum (Mo)	7439-98-7	4.25 – 9.20	15 as Mo and insoluble compounds 5.0 as Mo and soluble compounds	10 as Mo and insoluble compounds 5.0 as Mo and soluble compounds
Nickel (Ni)*	7440-02-0	0.75 max.	1.0 as Nickel	1.0 as metal and insoluble compounds 0.1 as soluble compounds
Phosphorous (P)	7723-14-0	0.030 max.	0.1 as Phosphorous	0.1 as Phosphorous
Silicon (Si)	7440-21-3	0.20 – 0.50	None Listed	10 as total dust
Sulfur (S)	7704-34-9	0.030 max.	15 as dust (total) 5.0 (respirable)	10 as total dust 5.0 as respirable dust
Tungsten (W)	7440-33-7	1.40 – 6.75	None Listed	5.0 insoluble compound 10 insoluble comp. (STEL) 1.0 soluble compound 3.0 soluble comp.(STEL)
Vanadium (V)*	7440-62-2	1.00 – 4.50	0.5 respirable dust as V <sub>2</sub> O <sub>5</sub> 0.1 fume as V <sub>2</sub> O <sub>5</sub>	None Listed

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

\*These substances are regulated as toxic chemicals under Section 313, SARA Title III and 40 CFR 372.

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#### SECTION 4 – FIRST AID MEASURES

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**Inhalation:** If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.) remove from exposure area to fresh air immediately. If symptoms persist seek medical attention.

**Eye Contact:** Wash/flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention immediately.

**Skin Contact:** If irritation or rash occurs, remove contaminated clothing immediately. Wash affected area with soap and water. If irritation or rash persists, seek medical attention immediately.

**Ingestion:** If large quantities are swallowed seek medical attention.

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#### SECTION 5 – FIRE FIGHTING MEASURES

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**Flash Point:** None

**Flammable Limits:** Not Applicable

**Fire and Explosion Hazards:** None in solid state. However tool steel dust generated in grinding may be sensitive

to static discharge or ignite if allowed to accumulate and exposed to a source of ignition.

**Extinguishing Media:** In solid finished form it will not burn. Use water to cool. For dust fires, smother with dry sand, ABC type fire extinguisher, or flood with water.

**Special Firefighting Procedures:** For a dust fire use a respirator approved for toxic dust and fumes. For larger fires, firefighters should use a self-contained breathing apparatus. Do not release run off from fire control methods into waterways, fire may produce toxic thermal decomposition products.

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## SECTION 6 – ACCIDENTAL RELEASE MEASURES

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**Steps to be taken in case material is released or spilled:** Clean up area using methods to avoid dust generation such as (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 3.

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## SECTION 7 – HANDLING AND STORAGE

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**Handling Precautions:** Under normal operating conditions, the use of high speed steel tool products do not require special safety precautions beyond normal safety procedures for handling and using cutting tools. However, operations such as grinding, cutting, and welding of high speed steel tool products may generate dust and fumes resulting in hazardous exposure to the elements in the alloy. Protect against dust and fume inhalation and skin or eye contact. Use proper exhaust ventilation. Wash hands thoroughly after handling, along with washing exposed skin at the end of a work shift. Do not use compressed air to remove dusts. Dust should be removed by laundering or vacuuming the clothing, rags, or other items. Maintain good house cleaning procedures to prevent dust accumulation.

**Storage requirements:** Store in a manner that prevents accidental environmental contamination from traces of industrial lubricants or wetting oils. Store avoiding rapid change of temperature and high humidity.

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## SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Eye Protection:** Always wear safety glasses with side shields when grinding or cutting high speed steel tool products. An eye wash station should be provided within the immediate work area for emergency use.

**Gloves:** The appropriate protective gloves or barrier creams are recommended to prevent skin contact with dusts.

**Clothing:** The appropriate protective clothing and equipment must be worn to prevent repeated or prolonged skin contact.

**Ventilation:** Provide local or general exhaust ventilation to ensure that concentrations of dusts or fumes do not exceed exposure limits.

**Respirator Protection:** Use a NIOSH- approved respirator, with the proper assigned protection factor, whenever airborne concentrations of hazardous components exceed exposure limits listed in Section 3.

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## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance and Odor:** Metal cutting tools with various geometries, a solid odorless metal.

**Boiling Point:** 5,000°F (2760°C)

**Specific Gravity:** 7.8 – 8.2 (60°F)

**Melting Point:** 2,500°F (1371°C)

**Vapor Pressure (mm Hg):** Not Applicable

**Evaporation Rate:** Not Applicable

**Vapor Density (air=1):** Not Applicable

**Solubility in Water:** Insoluble

**Volatile Organic Compounds (N.O.C.):** Not Applicable

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## SECTION 10 – STABILITY AND REACTIVITY

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**Stability:** Chemically Stable

**Incompatibility:** Reacts with strong acid to generate hydrogen gas

**Hazardous Polymerization:** Will not occur

**Hazardous Decomposition or Byproducts:** Metallic oxides

**Conditions To Avoid:** Elevated temperatures may liberate metallic oxides or fumes. Avoid exposure to generated dusts and/or fumes.

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## SECTION 11 – TOXICOLOGICAL INFORMATION

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**Chromium:** There is evidence of increased cases of lung cancer among chromium alloy workers. However, according to The International Agency for Research on Cancer (IARC) the chromium compounds responsible cannot be specified.

**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<sub>50</sub>: 114 mg/kg

Rabbit Intratracheal LD<sub>50</sub>: 70 mg/kg

**Nickel:** IARC lists metallic nickel and nickel compounds as Category 2B carcinogens (Possibly Carcinogenic to Humans). Epidemiological studies indicate increased incidence of cancer of the nasal cavity, lungs, and possibly the larynx in nickel refinery workers. Nickel is an eye, skin, and mucous membrane irritant also a pulmonary and skin sensitizer.

Rat Oral LD<sub>50</sub>: 5 mg/kg

Dog Intravenous LD<sub>50</sub>: 10 mg/kg

Guinea Pig Subcutaneous LD<sub>50</sub>: 500 mg/kg

Rat Intratracheal LD<sub>50</sub>: 12 mg/kg

Mouse Intravenous LD<sub>50</sub>: 50 mg/kg

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## SECTION 12 – ECOLOGICAL INFORMATION

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There is no data available, solids and dust should be recycled if possible.

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## SECTION 13 – DISPOSAL CONSIDERATIONS

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Dispose of in accordance with the appropriate government regulations. If possible disposal of this material should be done at an appropriate reclamation facility.

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## SECTION 14 – TRANSPORTATION INFORMATION

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**DOT Hazard Classification:** Not Applicable

**Placard Required:** Not Applicable

**Label Required:** Not Applicable

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## **SECTION 15 – REGULATORY INFORMATION**

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**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.

**SARA Title III Requirements:** The product description or trade name (High Speed Steel) contains toxic chemicals subject to the reporting requirements under Section 313 of Title III, the Superfund Amendments and Reauthorization Act of 1986 and 40CFR Part 372. Toxic chemicals may include chromium, nickel, manganese, cobalt, copper, vanadium, or titanium (refer to Section III of the SDS for specific hazardous ingredients).

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## **SECTION 16 – OTHER INFORMATION**

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This material is potentially contaminated with coatings such as oils for preservation, and other contaminants. If the material is contaminated, special precautions, such as process control and personal protective equipment appropriate to the nature of the suspected contaminants should be taken to avoid resulting exposures when handling, cutting (thermal or mechanical) and/or heating or melting. It is the user's responsibility to identify and protect against health and safety hazards presented by modification of high speed steel tool products after manufacture.

**Disclaimer:** The information contained in this Safety Data Sheet (SDS) is believed to be correct, but no representations, guarantees, or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material or the results to be obtained from the user thereof. The user assumes all risk and liability of any use, processing, or handling of any material. Variations in methods, conditions, equipment used to store, handle or process the materials and hazards connected to the use of material are solely the responsibility of the user and remain at its sole discretion.

As sold, the product described in this SDS is considered by Reiff and Nestor Company to be an "article" within the meaning of Title 29 of the code of federal regulations, Section 1910.1200 et seq. This SDS is intended to be used solely for the purpose of satisfying informational request made pursuant to that requirement. It is not intended to pre-empt, replace, or expand the terms contained in our conditions of sale. Compliance with all applicable Federal, State, and Local laws and regulations remain the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein are required.

Prepared by: Reiff and Nestor Co., Engineering Department