

MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION

Product Name: **Tungsten Carbide Nickel (90/10) Powder**
 Product Item: 328624
 Product Code: HA 8310

 Supplier: **HAI Advanced Material Specialists, Inc.**
1688 Sierra Madre Circle
Placentia, CA 92870
(714)-414-0575

 Emergency Contact: 888-255-3924
 Chemical Family: cemented carbide
 Formula: WC 10Ni
 Molecular Weight:

SECTION 2 – HAZARDOUS INGREDIENTS

IMPORTANT! This section covers the material from which these products are manufactured. Dust and gases produced when spraying with normal use of these products are covered in Section 5.

Material or Component	CAS Number	Concentration	OSHA PEL	ACGIH TVL	Other Limits *
Tungsten Carbide	12070-12-1	0.0-88.0%	5.10 mg/m ³	5.10 mg/m ³	No data
Nickel	7440-02-0	9.00-11.00%	1.0 mg/m ³	0.5 mg/m ³	NE
Material or Component	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH STEL
Tungsten Carbide	NA	No data	No data	10 mg/m ³	No data
Nickel	GF8750000	No data	No data	No data	No data

US EPA SARA TITLE III

Material or Component	CAS Number	Sec. 302 (EHS)	Sec. 304 RQ	Sec. 313 (TRI)
Tungsten Carbide	12070-12-1	No	No	No
Nickel	7440-02-0	No	Yes 100	Yes

SECTION 3 – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: [] Gas [] Liquid [X] Solid
Melting Point: >1,260°C
Boiling Point: No data
Specific gravity (water=1): No data
Vapor pressure (mmHg): No data
Vapor Density (Air=1): No data
Evaporation rate (Butylacetate=1): No data
Solubility in water: Insoluble

Percent volatile (vol.): No data
Corrosion Rate: No data
Appearance and odor: Dark grey powder, no odor
Other: None

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash point: N/A Method Used: Unknown
Auto ignition temp.: N/A
Flammable limits: N/A
Explosive Limits: LEL: N/A UEL: N/A
Extinguishing Media: Use special dry powder extinguishing material such as dry sand or limestone to extinguish metal fires. If fire occurs in open drums, seal drum with lid to smother flames.
Special fire fighting procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.
Unusual fire and explosion hazards: Dust may present fire or explosion hazard in confined areas. This is not expected under normal handling procedures. May emit toxic fumes if involved in fire.

SECTION 5 – REACTIVITY DATA

Stability: Unstable [] Stable [X]
Conditions to avoid - Instability: Accumulation of fine powder, below 1µm
Incompatibility – Materials to avoid: Acids, can produce flammable hydrogen gas
Hazardous decomposition products: Nickel carbonyl
Hazardous polymerization: Will occur [] Will not occur [X]
Conditions to avoid – Hazardous polymerization: None
Product corrosive: Yes [] No [X]

SECTION 6 – HEALTH HAZARD DATA

Health Hazards (Acute and Chronic)

Tungsten compounds: Industrially this element does not constitute an important health hazard. Exposure is related chiefly to the dust arising from the crushing and milling of the two chief ores of tungsten, namely, scheelite and wolframite. Heavy exposure to the dust or the large amounts of the soluble compounds produces changes in body weight, behavior, blood cells, choline esterase activity and sperm in experimental animals. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

NICKEL: Confirmed carcinogen with experimental carcinogenic, neoplastic, tumorigenic and teratogenic data. Poison by ingestion, intratracheal, intraperitoneal, subcutaneous and intravenous routes. An experimental teratogen.

Ingestion of soluble salts causes nausea, vomiting and diarrhea. Hypersensitivity to nickel is common and can cause allergic contact dermatitis, pulmonary asthma, conjunctivitis and inflammatory reactions around nickel containing medical implants and prosthesis. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Inhalation: Acute: May be toxic by inhalation. May cause irritation to the mucous membranes, upper respiratory tract, coughing, dyspnea, soreness in the chest, weight loss, hemoptysis, bronchitis, asthma, pulmonary fibrosis and radiological changes in the lungs.
 Chronic: May cause permanent respiratory disease, occupational asthma and interstitial fibrosis.

Ingestion: Acute: Poison by ingestion. May cause irritation to the gastrointestinal tract, diarrhea and acute poisoning.

Chronic: No chronic health effects recorded.

Skin: Acute: May cause irritation.

Chronic: May cause allergic sensitization, eczema and dermatitis.

Eye: Acute: May cause irritation.

Chronic: May cause conjunctivitis.

Target Organs: May affect the respiratory and skin

Carcinogenicity: NTP? [X] ARC Monographs? [X] OSHA Regulated? [X]

Carcinogenicity / other Information:

Nickel Other Toxicity Data

otr-ham:kdy 400 mg/L orl-rat TDLo: 158 mg/kg (MGN):TER
otr-ham:emb 5 umol/L acu-rat TDLo: 3000 mg/kg/6W-I:ETA
ims-rat TDLo: 56 mg/kg:CAR par-rat TDLo: 40 mg/kg/52W-I:ETA
Created: 07/18/1986 Revision: 09/01/2004 Generated: 5/24/2010 4
imp-rat TDLo: 250 mg/kg:CAR ims-mus TDLo: 200mg/kg:NEO
imp-rbt TDLo: 165 mg/kg/2Y-I:NEO,TER orl-rat LDLo: 5 g/kg
itr-rat LDLo: 12mg/kg ivn-mus LDLo: 50 mg/kg
ivn-dog LDLo: 10mg/kg scu-rat LDLo: 12500 ug/kg
ipr-rbt LDLo: 7 mg/kg scu-rbt LDLo: 7500 ug/kg
orl-gpg LDLo: 5mg/k

ACGIH-TLV A3:Confirmed Animal Carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

Recommended Exposure Limits See "Section II"

LD 50 / LC 50

itr-rat LDLO: 50 mg/kg (85/15 %)

Signs and Symptoms of Exposure

Inhalation: May cause a red, dry throat, coughing, sneezing, soreness in the chest, shortness of breath, wheezing, chest tightness and loss of weight.

Ingestion: May cause gastritis, convulsions, asphyxia, giddiness, nausea, diarrhea and vomiting. Nickel toxicity may cause: gastroenteritis; nervous symptoms such as tremor, chorea-like movements and paralysis occur prior to death, which occurs mostly from heart failure.

Skin: May cause allergic dermatitis, redness, itching, burning and inflammation.

Eye: May case redness, itching, burning, and watering.

Medical Conditions Generally Aggravated by Exposure

Pre-existing respiratory disorders.

Emergency and First Aid Procedures

Inhalation: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.

Ingestion: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

Skin: If contacted with skin remove any contaminated clothing, wash skin thoroughly with soap and water. If irritation develops, seek medical attention.

Eye: If contact with eye occurs, flush with large amounts of water for at least ten (10) minutes. If irritation continues, seek medical attention.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/DISPOSAL

Steps to be Taken in Case Material is Released or Spilled

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste Disposal Method

Dispose of in accordance with local, state and federal regulations.

Hazard Label Information

Store in cool, dry place.

Wash thoroughly after handling.

Store in tightly sealed container.

Precautions to be Taken in Handling

None

Precautions to be Taken in Storing

Keep container closed when not in use. Store in dry, cool place.

Other Precautions

None

SECTION 8 - CONTROL MEASURES

Protective Equipment Summary - Hazard Label Information:

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

Respiratory Equipment (Specify Type)

NIOSH - approved respirator

Eye Protection

Safety glasses

Protective Gloves

Rubber gloves

Other Protective Clothing

Protective gear suitable to prevent contamination

Ventilation

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

Special: None

Mechanical (Gen): Not recommended

Other: None

Work/Hygienic/Maintenance Practices

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION 9 – OTHER

Control of Substances Hazardous to Health Regulations
EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE
Occupational Exposure Standard: NE

HAI Advanced Material Specialists, Inc. requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents, and contractors of the information on this MSDS and any product hazard and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the product hazards and safety information.

Company Policy or Disclaimer

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Abbreviations used: N/A=Not Applicable NE: Not Established