



MATERIAL SAFETY DATA SHEET

SECTION 1 IDENTITY

NAME OF PRODUCT:

Diamond Plated Grinding Wheel with "TS" prefix. For example: TS-121 or TS-122

MANUFACTURER'S NAME AND ADDRESS:

SUNNEN PRODUCTS COMPANY
7910 MANCHESTER
ST. LOUIS, MO 63143

CONTACT:

CHUCK KORN

DATE:

NOVEMBER 28, 1996

EMERGENCY TELEPHONE NUMBER:

314-781-2105

SECTION 2 INGREDIENTS/IDENTITY (PER 29 CFR 1910.1200(g))

CHEMICAL NAME	MAX Wt%	CAS NO.	OSHA TWA Z1-A	ACGIH TWA	CARCINOGENIC
Iron (Steel Alloy 1010)	98	None	15 Total Dust 5 Respirable	10	N
Copper (metal)	<1	7440-50-8 as fume as dust/mist	0.1 1	0.2 1	N N
Nickel (metal)	<1	7440-02-0 as dust/mist	1	0.05	Y (1)

(1)I.A.R.C. & N.T.P. REPORT THAT ALL COMPOUNDS CONTAINING NICKEL ARE POTENTIALLY CARCINOGENIC. FOR FURTHER SAFETY AND HEALTH INFORMATION REGARDING THE COMPOSITION OF THIS MATERIAL CONTACT SUNNEN PRODUCTS. This mixture contains toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

These mixture ingredients are cited on the following lists:

NAME	CAS	CITATIONS
Steel	None	None
Copper	7440-50-8	2,4,8,10,11,12,13,14,15,16,17,18,19,20,21,22,23
Nickel	7440-02-0	1,2,3,4,5,7,8,10,11,12,13,14,15,16,17,18,19,20,21,22,23

1=IARC 2=OSHA 3=NTP 4=ACGIH 5=NFPA49 6=NFPA325M 7=DOT HMT 49CFR172.101 8=EPA 9=RTECS 10=MA RTK 11=AK RTK 12=CA RTK 13=FL RTK 14=IL RTK 15=ME RTK 16=MN RTK 17=NH RTK 18=NJ RTK 19=Cincinnati, OH RTK 20=Norwood, OH RTK 21=PA RTK 22=RI RTK 23=WV RTK

SECTION 3 PHYSICAL & CHEMICAL CHARACTERISTICS

SPECIFIC GRAVITY (WATER=1).....7.0 (APPROX)	EVAPORATION RATE.....NOT VOLATILE
MELTING POINT>1700 F	SOLUBILITY IN WATER.....NOT SOLUBLE
PERCENT VOLATILE BY WEIGHT.....NOT VOLATILE	REACTIVITY IN WATER.....NOT REACTIVE
VAPOR PRESSURE (mm Hg).....NOT VOLATILE	APPEARANCE AND ODOR.....SOLID OBJECT
VAPOR DENSITY (Air=1).....NOT VOLATILE	

SECTION 4 SPECIAL PRECAUTIONS

NONE Refer to Section 7.

SECTION 5 CORROSIVELY AND REACTIVITY DATA

STABILITY: Material is stable under normal conditions of transport and storage. POLYMERIZATION: Hazardous polymerization will not occur. INCOMPATIBILITY (MATERIALS TO AVOID): Concentrated acids such as nitric or hydrochloric. HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen gas. Toxic gases and vapors (such as nickel carbonyl and oxides of nitrogen) may be released in a fire involving nickel or in a decomposition of nickel compounds.

SECTION 6 HEALTH, FIRST AID AND MEDICAL DATA

ACUTE AND CHRONIC HEALTH EFFECTS AND EFFECTS OF OVEREXPOSURE

As a solid object the grinding wheel presents no hazard at normal temperatures. However, when used or modified for use (by abrading, melting, welding, cutting or processing in any other fashion that creates potentially hazardous dust or fumes) the operator will be exposed to air-borne metal particles or fumes from the wheel and workpiece. These particles and fumes can be inhaled, swallowed, or come in contact with the skin or eyes. Metal dusts or fumes, may cause irritation to the eyes, nose, or throat; leave a metallic taste in the mouth; result in metal fume fever (flu-like symptoms). Symptoms may be aggravated for sensitive individuals with respiratory conditions (such as emphysema). Persons with light skin, sensitive skin or large amounts of body hair may experience skin disorders from increased sensitivity to contact with metal fumes, dust or fines.

PRIMARY ROUTE(S) OF ENTRY ARE: INHALATION AND SKIN ABSORPTION. ACUTE AND CHRONIC HEALTH EFFECTS AND EFFECTS OF OVEREXPOSURE- THE INFORMATION PRESENTED AND THE CONCLUSIONS DRAWN ARE FROM OTHER THAN DIRECT TEST DATA. ABBREVIATIONS USED IN THE FOLLOWING SECTION: NAIF= NO APPLICABLE INFORMATION FOUND, SKIN= SKIN ABSORPTION, EYE= EYE CONTACT, INHAL= INHALATION, INGEST= INGESTION

NICKEL: ACUTE: SKIN: May cause swelling and irritation. Skin sensitization may occur upon repeated exposure. "nickel itch", a type of dermatitis resulting from sensitization to nickel may begin with a sensation of burning and itching at the place of contact and usually occurs seven days before the characteristic skin eruptions appear. The primary skin eruption is erythematous (red spots) or follicular (cavity); it may be followed by superficial discrete ulcers which discharge and become crusted. The eruption may spread to areas related to the activity of the primary site. Pigmented or de-pigmented plaques may be formed. This sensitization reaction may be accompanied by fever, inflammation of the mouth (stomatitis), gums (gingivitis), eyes (conjunctivitis), sudden asthmatic attacks and eosinophilic pneumonitis (inflammation of lungs). Recovery usually occurs within 7 days after exposure. Eczema was more severe in individuals with simultaneous sensitivity to nickel and cobalt than to a single metal. Nickel is not absorbed through the unbroken skin in amounts sufficient to cause intoxication. Metal may be affected by cutting oils or coolants and converted to a form that can penetrate the skin. EYE: May cause inflammation and irritation. Shown to be toxic to rabbit eye. INHAL: May cause respiratory irritation, cough, pneumonitis (inflammation of lung), and fever. Pulmonary edema (fluid in lungs) may be a delayed symptom. Pulmonary sensitization reaction or anaphylaxis (allergic shock) may occur causing eosinophilic pneumonitis (inflammation of lungs), asthma and host rejection of nickel. INGEST: Literature reports ingested nickel is eliminated and not absorbed to any great extent. CHRONIC SKIN: May cause sensitization dermatitis. EYE: May cause inflammation. INHAL: May cause mucous membrane irritation and pulmonary sensitization. Carcinogenic. INGEST: None reported in humans.

COPPER: ACUTE: SKIN: Changes causing hard or horny skin located on the hands and the soles of the feet has been reported. Copper salts may cause skin irritation (itching, redness and dermatitis). EYE: Copper salts may cause swelling, ulceration and cloudy cornea. INHAL: Melting, grinding, cutting of copper may produce fumes or dust exposure and breathing these fumes or dust may present health hazards. Fumes of copper may cause "Metal Fume Fever" with flu-like symptoms and skin and hair discoloration. Copper dust and fume may cause irritation of the upper respiratory tract, metallic taste in the mouth, and nausea. INGEST: Salts of copper act as irritants producing salivation, nausea, vomiting, stomach pain, bleeding stomach inflammation and diarrhea. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: Ulceration with perforation of the nasal septum. INGEST: Individuals with Wilson's disease (hepatolenticular degeneration) can experience fatal intoxication.

EMERGENCY FIRST AID

INHALATION: Remove to fresh air. If not breathing, begin mouth to mouth resuscitation. Seek medical attention. EYE CONTACT: Remove contact lenses (if wearing) and flush eyes with water to remove particulates. Seek medical attention to

check for possible irritation. SKIN CONTACT: Brush off excess dust. Wash hands with mild non-abrasive soap and water. INGESTION: Seek medical attention.

SECTION 7 HANDLING, STORAGE AND USE PROCEDURES

NORMAL STORAGE AND HANDLING: No special procedures required. **NORMAL USE:** Use ONLY with Wetting Agent and adequate ventilation. Avoid contact with grinding dust. Inhalation of grinding dust is harmful. Practice good personal hygiene

while grinding. Wash hands thoroughly to remove coolant and microscopic particles of metal debris (suspended in the coolant) before touching other parts of the body, food, drinks or smoking to avoid exposure to metal fines. Refer to acute health effects- Section 6. **STEPS TO BE TAKEN IN CASE OF LEAKS OR SPILLS:** Treat chips or dust as metal alloys. Avoid spreading dust. **WASTE DISPOSAL METHODS:** Used grinding wheels are classified by the EPA as "scrap metal" and are not subject to regulation under 40 CFR parts 262-266 or part 270 or part 124 and are not subject to the notification requirements of Section 3010 of RCRA. Dispose of in accordance with applicable federal, state and local laws, regulations, rules, orders and ordinances. Ref. 40 CFR 261.

SECTION 8 PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Not normally required when wet grinding. If conditions of use (by abrading, melting, welding, cutting or processing in any other fashion that creates potentially hazardous dust or fumes) use NIOSH approved respirator rated for metal dust to maintain levels of dust below ACGIH TLV and OSHA PEL/TLV levels. Normal machining operations using honing oil does not generate harmful levels of mists or fumes in the operators breathing zone. If unusual machining conditions generate any strong odor or detectable coolant mist use NIOSH approved respirator rated for mineral oil mist to maintain mist levels below ACGIH TLV and OSHA PEL/TLV levels. **VENTILATION:** Normal ventilation is required. Do not operate machine within a closed un-ventilated space. If conditions of use (by abrading, melting, welding, cutting or processing in any other fashion that creates potentially hazardous dust or fumes) or if any strong odors or oil mist is detected, use forced ventilation to maintain levels of fumes or mists below ACGIH TLV and OSHA PEL/TLV levels. **SKIN PROTECTION:** Not required when handling solid wheel. Gloves and protective clothes if any operation generates dust. Skin protection is not normally required for short exposures while wet grinding. Oil impervious gloves should be worn while grinding in the event any symptoms of skin distress appear. Note that some barrier creams have been shown to increase skin absorption of metallic compounds and also that many people are allergic to chemicals used in protective gloves. **EYE PROTECTION:** Safety glasses with side shields or goggles are recommended. Where there is any possibility that an employee's eyes may be exposed to this substance or workpiece (carbide) fines, the employer should provide an eye-wash fountain within the immediate work area for emergency use. **OTHER PROTECTION:** Apron if desired. Do not wear dust soiled clothing as it may cause skin irritation. **MEASURES TO BE TAKEN DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT THAT HAS BEEN IN CONTACT WITH THIS MATERIAL:** Remove traces of material dust if soldering, welding, brazing, cutting or other process involving ignition sources by cleaning with a high-efficiency particulate filter vacuum or wet clean up. Avoid spreading dust. Use appropriate respiratory protection.

SECTION 9 FIRE AND EXPLOSION HAZARD DATA

Material in the solid state does not present a fire or explosion hazard. Dust hazards exist under favoring conditions of small particle size. Dispersion in air and strong ignition source may result in an explosion.

NOTICE

THIS MATERIAL SAFETY DATA SHEET ("MSDS") IS SUPPLIED PURSUANT TO THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S HAZARD COMMUNICATION RULE (THE "RULE"), 29 CFR 1910.1200. THIS MSDS IS BEING FURNISHED TO THE IMMEDIATE PURCHASER OF THE MATERIAL TO WHICH IT REFERS WITHOUT REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY INFORMATION OR RECOMMENDATIONS CONTAINED HEREIN.

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