



MATERIAL SAFETY DATA SHEET

SECTION 1 IDENTITY

NAME OF PRODUCT:

Sunnen Vitrified Honing Stones: A, J and C Abrasive (Example: K10-A57 or P28-C07), or AA, AN, AHU, CR, EEU, EAU, EMN, EMU, EKN, EHN, EKU, EHU, EUA, EUG, HB, JN, JHU, JUA, JUG, KL, LBN, LG, LH, LJ, ML, PL, RY, RYY, S, SC, SL, SY, SN, T20, UL, XB, XHB and XSC Prefix (Exm: JHU-625), TS-125 & XB25. Also A, N, E, F, J, G, H and K Sunnen made abrasive for Non-Sunnen Machines (Example: K01-3-12-12-192-AC.)

General Hone Vitrified Honing Stones with BS, BVGC, GC, PKGC, PR or SN Prefix. Exm. "GCC09K07FIUMF"

CHEMICAL FAMILY: Mixture. Vitrified Honing Stone that may contain fillers and organic binders. May be mounted on a zinc or zinc coated steel holder.

MANUFACTURER'S NAME AND ADDRESS:

SUNNEN PRODUCTS COMPANY
7910 MANCHESTER
ST. LOUIS, MO 63143

EMERGENCY TELEPHONE NUMBER:

314-781-2105

CONTACT: CHUCK KORN

DATE: MARCH 16, 2004

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

CHEMICAL NAME OF COMPONENTS	CAS NO.	MAX Wt%	OSHA Z1A 8 HR TWA	OSHA Z1A STEL	ACGIH TWA	CARCINOGENIC
aluminum oxide (alundum)	1344-28-1	55	10 dust/5 respirable	NONE	10	N
aluminum (metal)	7429-90-5	5	15 dust/5 respirable	NONE	10	N
boron oxide (boron oxide)	1303-86-2	5	10 dust/5 respirable	NONE	10	N
calcium oxide (lime)	1305-78-8	5	5	NONE	2	N
carbon black	1333-86-4	1	3.5	NONE	3.5	N
copper (metal) as dust/mist	7440-50-8	5	1	NONE	1	N
copper (metal) as fume	7440-50-8	-	.1	NONE	0.2	N
cured phenolformaldehyde resin	9003-35-4	20	NONE	NONE	NONE	N
fibrous glass (fiberglass) as dust	65997-17-3	10	15 dust/5 respirable	NONE	10	N
fluorides (fluorides) as fluorine	NONE	5	.2	NONE	1 ppm	N
lithium carbonate	554-13-2	15	10 dust/5 respirable	NONE	10	N
manganese (metal)	7439-96-5	1	5 dust/1 fume	3 fume 5 dust/1 fume		N
silicon carbide (crystolon)	409-21-2	55	10 dust/5 respirable	NONE	10	N
silica, fused (silicon dioxide)	60676-86-0	5	0.1 respirable dust	NONE	0.1	N(1)
sodium silicate	1344-09-8	15	15 dust	NONE	10	N
tin (metal) as inorganic except oxide	7440-31-5	5	2	NONE	2	N
sodium silicate	1344-09-8	15	15 dust	NONE	10	N
zinc compound	NONE	5	NONE	NONE	NONE	N

THE HONING STONE MAY ONLY CONTAIN SOME OF THE ABOVE COMPONENTS. 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. FOR FURTHER SAFETY AND HEALTH INFORMATION REGARDING THE COMPOSITION OF THIS MATERIAL CONTACT SUNNEN PRODUCTS. THE EXACT COMPOSITION OF THIS MATERIAL IS BEING WITHHELD AS A TRADE SECRET OF SUNNEN PRODUCTS COMPANY. ALL COMPONENTS ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCE CONTROL ACT. (1) Airborne particles of respirable size of Crystalline Silica are known to the state of California to cause cancer. ppm=parts / million.

These mixture ingredients are cited on the following lists:

NAME	CAS	CITATIONS
ALUMINUM OXIDE	1344-28-1	4,9,13,16,17
ALUMINUM	7429-90-5	4,5,8,9,10,11,12,13,14,15,17,18,21,22,23
BORON OXIDE	1303-86-2	2,4,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
CALCIUM OXIDE	1305-78-8	2,4,7,9,10,13,16,17
COPPER	7440-50-8	2,4,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
GLASS-FIBROUS/DUST	NONE	4,9,10,13,16,17
FLUORIDES (as F)	NONE	2,4,13,16,17
MANGANESE	7439-96-5	2,4,8,10,11,12,13,14,15,16,17,18,19,20,21,22,23
SILICON DIOXIDE	60676-86-0	2,4,9,10,11,12,13,14,15,16,17,18,20,21,22,23
SILICON CARBIDE	409-21-2	4,9,13,16,17,22
TIN	7440-31-5	2,4,9,10,11,12,13,15,16,17,18,21,22,23
ZINC	7440-66-6	8,9,10,13,18,21,22

1=IARC 2=OSHA 3=NTP 4=ACGIH 5=NFA49 6=NFA325M 7=DOT HMT 49CFR172.101 8=EPA SARA III 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, Ohio RTK 20=Norwood, Ohio RTK 21=PA RTK 22=RI RTK 23=WV RTK

SECTION 3 PHYSICAL & CHEMICAL CHARACTERISTICS

SPECIFIC GRAVITY (WATER=1)	5 (APPROX)
MELTING POINT	>728 F (387 C) HOLDER
PERCENT VOLATILE BY WEIGHT	NOT VOLATILE
VAPOR PRESSURE (mm Hg)	NOT VOLATILE
APPEARANCE AND ODOR	SOLID OBJECT
VAPOR DENSITY (Air=1)	NOT VOLATILE
EVAPORATION RATE	NOT VOLATILE
SOLUBILITY IN WATER	NOT SOLUBLE
REACTIVITY IN WATER	HOLDER WILL SLOWLY CORRODE

SECTION 4 SPECIAL PRECAUTIONS

HANDLING AND STORAGE: NONE Refer to MSDS Section 7 & 8.

SECTION 5 CORROSIVITY AND REACTIVITY DATA

STABILITY: Material is stable under normal conditions of transport and storage. POLYMERIZATION: Hazardous polymerization will not occur. INCOMPATIBILITY (MATERIALS TO AVOID): Acids of all types with PH < 4.0, bases or strong oxidizing agents. HAZARDOUS DECOMPOSITION PRODUCTS: Metal fumes if heated. Oxides of Sulfur. Oxides of Nitrogen as oxidation products of cement.

SECTION 6 HEALTH, FIRST AID AND MEDICAL DATA

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

As a solid object the honing stone presents no hazard at normal temperatures. However, if modified for use (by abrading, grinding, cutting or processing in any other fashion that creates potentially hazardous dust or fumes) the operator will be exposed to air-borne particles or fumes which 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 suspended in the honing oil.

ALUMINUM: ACUTE: SKIN: May cause skin irritation. EYE: Dust may cause swelling and injury to the eye. INHAL: Nuisance dust. INGEST: NAIF. **CHRONIC:** SKIN: NAIF. EYE: NAIF. INHAL: May cause irritation of the mucous membranes of the upper respiratory system. INGEST: NAIF.

BORON OXIDE: ACUTE: SKIN: Erythema. EYE: Conjunctivitis. INHAL: Nasal Irritation. INGEST: NAIF. **CHRONIC:** SKIN: NAIF. EYE: NAIF. INHAL: NAIF. INGEST: NAIF.

CALCIUM OXIDE: ACUTE: SKIN: Irritating and may be caustic to the skin. May produce burns or dermatitis with flaking skin and rash. EYE: Irritating and may be caustic to eye. INHAL: Irritating and may be caustic to the mucous membranes of upper respiratory tract causing inflammation and damage. INGEST: NAIF. **CHRONIC:** SKIN: NAIF. EYE: NAIF. INHAL: Bronchitis and lung disease. INGEST: NAIF.

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.

FLUORIDES: ACUTE: SKIN: May cause skin irritation. EYE: May cause eye irritation. INHAL: Irritating to the mucous membranes and lungs. INGEST: Nausea, vomiting, abdominal cramps, and diarrhea. CHRONIC: SKIN: Can cause systemic effects of fluoride poisoning by absorption through the skin. EYE: NAIF. INHAL: Nosebleeds and sinus trouble. Inhalation of excessive concentration of elemental Fluorine can cause irreparable damage to the lungs and death. INGEST: Large doses produce central nervous system involvement with twitching of muscle groups, convulsions and coma. Fluorides are retained in bone, and excessive intake may result in a bone disease that is recognizable by x-ray.

CURED PHENOL FORMALDEHYDE RESIN: ACUTE: SKIN: NAIF. EYE: Dust may irritate eyes. INHAL: Nuisance particulate. INGEST: NAIF. CHRONIC: SKIN: Excessive concentration of dust may cause skin sensitization. EYE: NAIF. INHAL: Excessive concentration of dust may cause airway obstruction. INGEST: NAIF.

SILICON DIOXIDE: ACUTE: SKIN: Dust may irritate skin. EYE: Dust may irritate eyes. INHAL: Coughing, wheezing, shortness of breath and impaired breathing. IARC- Animal inadequate evidence, Human inadequate evidence, Group 2A., Known to the state of California to cause cancer. INGEST: NAIF. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: Silicosis, a progressive lung disease. INGEST: NAIF.

GLASS, FIBROUS OR DUST: ACUTE: SKIN: May cause skin irritation. EYE: May cause eye irritation. INHAL: May irritate the upper respiratory tract. INGEST: NAIF. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: Fibers smaller than 3.5 μ m. have the ability to penetrate to the air cells of the lung. INGEST: NAIF.

SILICON CARBIDE: ACUTE: SKIN: Dust may irritate skin. EYE: Dust may irritate eyes. INHAL: Nuisance particulate. INGEST: NAIF. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: Progressive lung disease. INGEST: NAIF.

ALUNDUM: ACUTE: SKIN: NAIF. EYE: Dust may irritate eyes. INHAL: Nuisance particulate. INGEST: NAIF. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: NAIF. INGEST: NAIF.

TIN: ACUTE: SKIN: May cause skin irritation. EYE: May irritate eyes. INHAL: May irritate the mucous membranes. INGEST: Literature reports the toxicity is low. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: Exposure to the dust or fumes of tin oxide can result in a benign lung disease called stannosis. No tissue reaction or breathing disorder has been associated with this lung condition. INGEST: NAIF.

MANGANESE: ACUTE: SKIN: NAIF. EYE: May cause slight eye irritation. INHAL: Can cause bronchitis and inflammation of lung. Early symptoms of Manganese poisoning include lack of coordination, apathy, anorexia, headache and spasms. Freshly formed fumes can cause fever and chills similar to the flu. INGEST: Early symptoms of Manganese poisoning include lack of coordination, apathy, anorexia, headache and spasms. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL/INGEST: Manganese poisoning is not fatal but may present a large range of nervous system disorders that vary among individuals. Advanced symptoms are similar to classical Parkinson's disease (tremor, muscular weakness, rigidity).

LITHIUM CARBONATE: ACUTE: SKIN: Probably irritating to the skin due to alkaline nature. Not absorbed through the skin. EYE: Dust may irritate eyes due to alkaline nature. INHAL: Irritating to the respiratory tract. INGEST: Used as a therapeutic drug. Overdoses have resulted in nervous system effects. CHRONIC: SKIN: NAIF. EYE: NAIF. INHAL: NAIF. INGEST: Chronic effects on the kidney, heart and thyroid have resulted from excessive therapeutic exposure to lithium compounds. These exposure levels are not applicable to an occupational setting.

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:** Practice good personal hygiene while honing. Wash hands thoroughly to remove honing oil and microscopic particles of metal debris (suspended in the oil) 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. **WASTE DISPOSAL METHODS:** Used honing stones 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 261.6 (a)(3)(iv).

SECTION 8 PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Not normally required when honing with oil. 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 honing operations using honing oil do not generate harmful levels of mists or fumes in the operator's breathing zone. If unusual honing conditions generate any strong odor or detectable oil mist use NIOSH approved respirator rated for mineral oil mist to maintain oil mist levels below ACGIH TLV and OSHA PEL/TLV levels. VENTILATION: Normal ventilation is required. Do not operate honing machine within a closed un-ventilation 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 material. Gloves and protective clothes if any operation generates dust. Skin protection is not normally required for short exposures while honing with oil. Oil impervious gloves should be worn while honing 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: Always wear NIOSH approved safety glasses when honing or operating machinery. OTHER EQUIPMENT: No applicable information found. 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 to prevent a fire hazard.

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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