Material Safety Data Sheet

SECTION I – COMPANY AND PRODUCT IDENTIFICATION

Issue Date: 04/09/06
Revision Date: 10/20/10

Company: Wear –Concepts Inc.
2845 E. Heartland Drive
Liberty, Missouri 64068

Telephone Number: 816-587-1923
Emergency Telephone Number: 800-424-9300
Internet: www.wearcon.com

Product Name: Wear-Con Manganese Steel Castings (Manganese Hammers)
Common Name: Manganese steel castings, includes: MNB1, MNB2, MNB3, MNB2SP, MNC, 121L, 1222 and 61AC

SECTION II – INGREDIENTS/HAZARD INFORMATION

Ingredient	CAS Number	%	OSHA PEL	ACGIH TLV
Carbon	7440-44-0	0.00-1.45	N/E	NE
Chromium	7440-47-3	0.00-3.00	0.50 mg/cum	1.0 mg//cum
Chromium (hexavalent)			0.05 mg/cum	N/E
Copper	7440-50-8	0.00-0.50	1.0 mg/cum as dust 0.2 mg/cum as fume	1.0 mg/cum as dust 0.1 mg/cum as fume
Iron	7439-89-6	Balance	5 mg/cum as fume	10.0 mg/cum as fume
Manganese	7439-96-5	0.00-14.0	C 5 mg/cum as dust 1.0 mg/cum as fume	C 5 mg/cum as dust C 5 mg/cum as fume
Molybdenum	7439-7	0.00-3.00	1.0 mg/cum	15.0 mg/cum
Nickel	7440-02-0	0.00-2.00	1.0 mg/cum	1.0 mg/cum
Phosphorus	7723-14-0	0.00-0.07	.1 mg/cum	.1 mg/cum
Silicon	7440-21-3	0.00-2.25	10.0 mg/cum	15.0 mg/cum
Sulfur	7704-34-9	0.00-0.10	N/E	N/E
Tungsten	7740-62-2	0.00-0.35	.05 mg/cum	1 mg/cum
Vanadium	7440-62-2	0.00-0.35	0.5 mg/cum as dust .05 mg/cum as fume	.05 mg/cum as dust 0.1 mg/cum as fume

"C" Means Ceiling Limit - These are limits which should not be exceeded, even for a short time

SECTION III – PHYSICAL & CHEMICAL DATA

Physical Description: Solid, silver gray in color, no odor.
Boiling Point: Variable depending in casting grade
Solubility in Water: N/A
Percent Volatile by Volume: N/A
Vapor Pressure: N/A
Specific Gravity: 7.86 for iron
Evaporation Rate: N/A

SECTION IV - FIRE, EXPLOSION AND REACTIVE DATA

Castings will not burn or explode.

Hazardous Polymerization: Will not occur.
Stability: Stable
Incompatibility: Iron may cause violent decomposition of hydrogen peroxide (52% by weight or greater).

SECTION V - HEALTH HZARDS

Eyes: Metal particles in the eyes may cause irritation if not removed. Particles should be removed by a medical professional.

Skin: Dust or fumes may cause irritation. In some sensitive people, allergic dermatitis may develop.

Breathing: Prolonged or repeated over-exposure to iron oxide produced in grinding or welding may cause siderosis. Over exposure to manganese dust can cause Manganese Fume Fever. Symptoms of Manganese Fume Fever are sleepiness, weakness in the legs, emotional disturbances, uncontrollable laughter, and a spastic gait. Over exposure to chromium fumes may cause nose irritation. Repeated inhalation, especially when combined with inadequate personal hygiene, may result in perforated nasal septum.

Noise: Grinding of machine castings potentially exceeds OSHA limits.

Dust or fumes generated by machining, grinding, or welding on the casting will put contaminants in the air. Since the castings contain a high percentage of iron, most of the dust or fume will be iron or iron oxide. There is no TLV for iron dust, but available information indicates that treating a concentration of 10 mg/cu.m, as if it were a nuisance dust, will serve as a guideline until a TLV is established. Flame cutting, arc gouging or welding on the casting generates iron oxide fumes. Inhalation of two much iron oxide fume over a long time can cause siderosis, sometimes called “Iron Pigmentation” of the lung. It can be seen on a chest x-ray but causes little or no disability. All grades contain moderate levels of manganese. Long term over-exposure to manganese dust or fume can cause manganese poisoning. If welding of flame cutting fume is controlled to the TLV for total fume, the manganese fume will also be controlled. Grinding on castings that have not been cleaned or that contain embedded sand will generate significant amounts of dust containing free silica, which can cause silicosis. Carbon, copper, molybdenum, phosphorus, silicon, sulfur, tungsten, and vanadium are also contained in the castings in low amounts. Over exposure to these would not be likely if airborne concentrations of total dust and fume are controlled to levels below their respective TLVs and PELs, these minor constituents would also be adequately controlled.

SECTION VI - CANCER HAZARD DATA

Water insoluble hexavalent chromium is classified as a human carcinogen by the American Conference of Government Industrial Hygienists (ACGIH). Approximately 66% of the total chromium (in welding fume) is hexavalent, and only 5% of that is insoluble. Considering the small amount of chromium in the casting, over exposure to hexavalent chromium is not likely.

Nickel has been shown to cause cancer in laboratory animals. However its potential to cause cancer in humans has not been determined. The nickel content of the casting is so low that over exposure is not likely.

SECTION VII – FIRST AID MEASURES

Eye Contact; immediately flush eyes with plenty of water. Get medical attention immediately.

Skin Contact; wash with soap and water.

Inhalation; remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medial attention immediately.

SECTION VIII – PERSONAL PROTECTION

Respiratory Protection**:** Use NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Provide general ventilation and /or local exhaust if necessary to maintain concentration below TLV.

Eye Protection**:** Wear safety glasses with side shields (or goggles) and a face shield when grinding, goggles or welding hood when welding or plasma cutting.

Protective Gloves: Work gloves advisable for handling castings.

SECTION IX – ACCIDENTAL RELEASE MEASURES

N/A

SECTION X – HANDLING AND STORAGE

No special requirements.

SECTION XII – DISPOSAL CONSIDERATIONS

Dust collected from machining, welding or thermal cutting may be classified as “hazardous Waste”. Castings can be recycled. Consult local regulations disposition of these items.

SECTION XIII – TRANSPORTATION INFORMATION

Proper Shipping Name:	Not Regulated
Hazard Class:	None
UN Number:	None
Packing Group:	None

This information contained herein is based on date believed by WEAR CONCEPTS to be accurate, but we do not assume any liability for the accuracy of this information. We neither suggest nor guarantee that any hazards mentioned are the only ones that exist. Anyone intending to rely on any recommendation or to use any equipment, technique or material mentioned should be also satisfy himself that he can meet all applicable safety and health standards.

■ *Your Global Resource for Innovative Wear Solutions* ■
2845 Heartland Drive ■ Liberty, MO 64068 ■ 816 587-1923 ■ Fax: 816 587-2055