

MATERIAL SAFETY DATA SHEET

I - PRODUCT IDENTIFICATION:

Manufacturer's Name: Ervin Industries, Inc.
 Amasteel Division

Address: 3893 Research Park Drive
 Ann Arbor, MI 48108-2217

Telephone: (313) 769-4600
FAX: (313) 663-0136

D-U-N-S NO.: 00-533-7738, 00-504-3708, 07-499-7677

PRODUCT NAMES: Amasteel Shot, Amabrasive,
 Amasteel Grit, Amasteel

Common Name: Cast Steel
Chemical Family: Ferrous

II - HAZARDOUS COMPONENTS:

<u>CAS REGISTRY NO.</u>	<u>% WEIGHT</u>	<u>CHEMICAL NAME</u>	<u>ACGIH TLV (mg/m³)</u>	<u>OSHA PEL (mg/m³)</u>
7439-89-6	>96	Iron Oxide fume, as Fe	5	10
7440-44-0	0.8-1.3	Carbon	none estab.	none estab.
7439-96-5	0.5-1.3	Manganese Elemental and Inorganic compounds, as Mn Fume - as Mn	0.2 none estab.	5 (ceiling) 5 (ceiling)
7440-21-3	0.3-1.2	Silicon as total dust Respirable fraction	10 none estab.	15 5
7440-47-3	<0.25	Chromium Elemental metal and Inorganic compounds as Cr metal Cr II compounds - as Cr Cr III compounds - as Cr Cr VI compounds - water Soluble Cr VI compounds - insoluble Chromic Acid and Chromates as CrO ₃ Chromium salts - Insoluble - as Cr	0.5 none estab. 0.5 0.05 0.01 none estab. none estab.	1 0.5 0.5 none estab. none estab. 0.1 (ceiling) 1
7440-02-0	<0.2	Nickel elemental metal, insoluble compounds as Ni soluble compounds as Ni	0.05 0.05	1 1

!!! - PHYSICAL DATA:

Cast steel shot and grit are non-hazardous as received. Fine metallic dust is generated as the abrasive breaks down from impact and wear during normal use. Since the ferrous content is >96%, dust or fumes will consist mainly of iron or iron oxide. In addition, the fine steel dust created can be a mild explosion hazard (see IV).

Boiling Point - 2850-3150 Degrees C
Specific Gravity(at 60 degrees F)->7.6
% Volatile by volume-Not Applicable
Evaporation Rate-Not Applicable
Solubility in Water-Not Applicable
Appearance and Odor - Near spherical or angular steel particles with no odor

Melting Point-1371-1483 Degree C
Vapor Pressure-Not Applicable
pH - Not Applicable
Vapor Density-Not Applicable
Percent Solid by Weight-100%

IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point - Not Applicable

Flammability Limits-Not Applicable

Autoignition Temperature (solid iron exposed to oxygen) -930 Degrees C

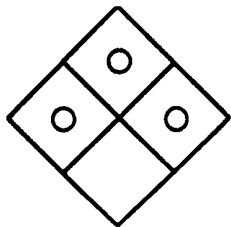
Cast steel shot and grit will not burn or explode.

A mild fire or explosion hazard situation may be created due to the fine dust that may result from use.

Fire Extinguishing method for dust created due to use - use Class D extinguishing agents or dry sand to exclude air. Do not use water or other liquids, or foam.

NFPA49

NFPA Hazard Rating



4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

Health (blue) 0
Flammability (red) 0
Reactivity (yellow) 0
Special (colorless)

SECTION V-HEALTH HAZARD DATA:

Threshold Limit Values - Permissible Exposure Limits - see Section II

Carcinogenicity - OSHA, not listed. IARC, chromium [VI] - carcinogenic to humans (Group 1), metallic chromium and chromium [III] compounds - not classifiable as to their carcinogenicity to humans (Group 3); nickel compounds are carcinogenic to humans, metallic nickel is possibly carcinogenic to humans (Group 2B).

Fumes can be generated by welding or flame cutting a surface containing new or used abrasive or the dust created by use of the abrasive. Welding or flame cutting may convert a small portion of the chromium to hexavalent chromium [VI]. IARC reports that welding fumes are possibly carcinogenic to humans.

Over exposure to dust and fumes may cause mouth, eye, and nose irritation. Prolonged overexposure to manganese dust or fume affects the central nervous system. Chronic overexposure can cause manganese poisoning, and attendant apathy, loss of appetite, uncontrolled laughter, insomnia followed by sleepiness, headache, difficulty in walking, frequent falling, tremors, salivation sweating and mental detachment. Prolonged overexposure to iron oxide fume can cause siderosis, or "iron pigmentation" of the lung. It can be seen on a chest x-ray but causes little or no disability.

SECTION V-HEALTH HAZARD DATA: (continued)

Target Organs - Lung for chromium and lung and nasal for Nickel.

Primary Routes of entry - inhalation of dust formed during use, or shot, grit or dust particles in eyes.

Emergency and First Aid Procedure - If inhaled, move out of area into fresh air. Flush eyes with running water, have any remaining particles removed from eyes by qualified medical person.

SECTION VI - REACTIVITY DATA:

Stability - stable Hazardous Polymerization - will not occur

Hazardous decomposition products - None. Shot and grit will break down into progressively smaller particles and dust during normal use.

SECTION VII - SPILL OR LEAK PROCEDURES:

Shot spilled or leaked onto floors can create hazardous walking conditions. No special precautions need to be followed when cleaning up spills or leaks of shot or grit. When cleaning up large quantities of dust, a NIOSH approved respirator should be used. Spilled shot and grit can be reclaimed for reuse, or disposed of as a non-hazardous solid waste. Collected dust from blast cleaning or shot peening operations always contains contaminants from the surfaces of the parts being processed, and therefore the dust may be classed as a hazardous waste and, as such, must be disposed of according to appropriate local, State or Federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

Ventilation - General ventilation and local exhaust should be provided to keep the dust levels below the TLV's shown in Section II.

Respiratory protection - If the dust created by use exceeds the ACGIH TLV's and OSHA PEL's indicated in Section II, a NIOSH approved respirator should be worn.

Eye protection - Approved safety glasses with eye shields should be worn.

Other protective equipment - none required.

SECTION IX - SPECIAL PRECAUTIONS:

Precautions to be taken in handling and storing - Keep dry to reduce rusting. Observe maximum floor loading limitations.

Other precautions - The company has no control over this product or its use after it leaves our facility. The company assumes no liability for loss or damage incurred from the proper or improper use of this product.

The information presented here has been compiled from sources considered to be reliable and accurate to the best of our knowledge and belief, but is not guaranteed to be so.

Prepared by: David A. Hale Manager, Technical Services