

# MATERIAL SAFETY DATA SHEET

MATERIAL SAFETY DATA SHEET - Complies with ANSI Z400.1 Draft Standard for the Preparation of Material Safety Data Sheets, Copyright 1991, Chemical Manufacturers Association. May be used to comply with U.S. Department of Labor OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standards must be consulted for specific requirements.

Date : 06/29/2001

## Ervin Industries, Inc. Amasteel Steel Shot and Steel Grit

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Amasteel Shot, Amabrasive, Amasteel Grit, Amasteel

COMMON NAME: Cast Steel

CHEMICAL FAMILY: Ferrous

COMPANY IDENTIFICATION

EMERGENCY / TECHNICAL NUMBERS

Ervin Industries, Inc.

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Amasteel Division

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CHEMTREC:

Ann Arbor, MI 48108-2217

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PRODUCT INFORMATION: MSDS Requests and Product Information: (313) 769-4600

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

### 2. COMPOSITION / INFORMATION INGREDIENTS

<u>COMPONENTS</u>	<u>CAS No.</u>	<u>OSHA Exposure Limits (PEL)</u>	<u>ACGIH Recommended Limits (TLV)</u>	<u>Percent by Weight</u>
Iron, oxide fume (as Fe)	7439-89-6	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	>96
Carbon (C)	7440-44-0	N/A	N/A	0.8-1.3
Manganese, (as Mn) elemental and inorganic fume	7439-96-5	5 mg/m <sup>3</sup> max. 5 mg/m <sup>3</sup> max.	0.2 mg/m <sup>3</sup> N/A	0.5-1.3
Silicon (Si) as total dust respirable fraction	7440-21-3	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> N/A	0.3-1.2
Chromium elemental metal and inorganic compounds (Cr)	7440-47-3	1 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	<0.25
Cr II compounds (Cr)		0.5 mg/m <sup>3</sup>	N/A	
Cr III compounds (Cr)		0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	
Cr VI compounds - water soluble		N/A	0.05 mg/m <sup>3</sup>	
Cr VI compounds - insoluble		N/A	0.01 mg/m <sup>3</sup>	
Chromic acid and chromates (CrO <sub>3</sub> )		0.1 mg/m <sup>3</sup> max.	N/A	
Chromium salts - insoluble (Cr)		1 mg/m <sup>3</sup>	N/A	
Nickel (Ni) elemental metal, insoluble compounds	7440-02-0	1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	<0.2
soluble compounds		1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	

#### COMPOSITION COMMENTS:

None.

### 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Cast steel shot and grit are nonhazardous 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 Section 5).

THRESHOLD LIMIT VALUES: Permissible exposure limits, see Section 2.

#### POTENTIAL HEALTH EFFECTS

TARGET ORGANS: Lung for chromium and lung/nasal for nickel.

PRIMARY ROUTE OF ENTRY: Inhalation of dust formed during use, or shot, grit or dust particles in the eyes.

EYE: Abrasion injuries possible if safety glasses are not worn.

SKIN: Abrasion injuries possible during blasting operations or similar exposure, with high velocity direct exposure to skin.

INGESTION: Not available.

INHALATION: Inhalation of dust formed during use.

CHRONIC EFFECTS: See Section 11.

### 4. FIRST AID MEASURES

#### SIGNS AND SYMPTOMS OF EXPOSURE

EYE: Irritation, redness, watering.

SKIN: Redness, abrasion.

INGESTION: Unknown.

INHALATION: Coughing.

#### FIRST AID PROCEDURES

EYE: Flush thoroughly with cool running water. Have any remaining particles removed by qualified medical person.

SKIN: Follow procedures appropriate to abrasion or trauma injuries.

INGESTION: Not likely. If swallowed, seek medical attention.

INHALATION: Move out of area into fresh air.

### 5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: Nonflammable

FLASH POINT / METHOD USED: N/A

AUTOIGNITION: (solid iron exposed to oxygen) 930°C

FLAMMABILITY LIMITS (% by volume in air): LEL: N/A UEL: N/A

EXTINGUISHING MEDIA: 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.

NFPA RATINGS: Health 0; Flammability 0; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS: Cast steel shot and grit will not burn or explode.

UNUSUAL FIRE AND EXPLOSIVE HAZARDS: A mild fire or explosion hazard situation may be created due to the *fine dust that may result from use*.

SPECIAL FIRE FIGHTING PROCEDURES: None

COMBUSTION PRODUCTS: N/A

## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: See Section 8.

CLEANUP MEASURES: 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 nonhazardous 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.

## 7. HANDLING AND STORAGE

NORMAL STORAGE: General dry storage, ambient air temperature and pressure. Keep dry to reduce rusting.

HANDLING: Observe maximum floor loading limitations. Clean up spills immediately to reduce slip hazards.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposures below PELs or TLVs during abrasive blasting operations.

RESPIRATORY PROTECTION: Recommended if PELs or TLVs are exceeded. Use NIOSH approved respirators.

EYE AND FACE PROTECTION: Use safety glasses with side shields. If there is potential for exposure to particles which could cause mechanical injury to the eye, wear goggles.

SKIN AND HAND PROTECTION: Gloves as desired by user.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Near spherical or angular steel particles.

ODOR: Odorless

VAPOR PRESSURE (mm Hg): N/A

BOILING POINT: 2850-3150°C

MELTING POINT: 1371-1483°C

% VOLATILE BY VOLUME: N/A

SPECIFIC GRAVITY @ 60°F (H<sub>2</sub>O = 1): 7.6

FLASH POINT: None

VAPOR DENSITY (AIR = 1): N/A

EVAPORATION RATE (BUTYL ACETATE = 1): N/A

SOLUBILITY: Insoluble in water

% SOLID BY WEIGHT: N/A

pH: N/A

## 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

INCOMPATIBILITY WITH OTHER MATERIALS: Not available.

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY: OSHA, not listed. IARC, chromium [IV] - carcinogenicity 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 [IV]. IARC reports that welding fumes are possibly carcinogenic to humans. Overexposure to dust and fumes may cause mouth, eye and nose irritation. Prolonged overexposure to manganese dust or fumes 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.

## 12. ECOLOGICAL INFORMATION

Not available.

## 13. DISPOSAL CONSIDERATIONS

If the shot or grit remains uncontaminated per the Resource Recovery and Conservation Act (RCRA), then the material meets the definition of a nonhazardous solid waste and may be disposed of per local, state and federal regulations.

If the spent shot or grit contains contaminants at levels above those specified under RCRA, then the waste is defined as hazardous and must be managed per federal or state regulations governing hazardous waste.

## 14. TRANSPORTATION INFORMATION

Not available.

## 15. REGULATORY INFORMATION

Not available.

Originally prepared by: David A. Hale, Manager, Technical Services, Ervin Industries. 6/20/94.

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