

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health
Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072



IDENTITY Steel Shot/Steel Grit	Ferrous
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Section I

Educational Innovations, Inc	Date Prepared 08-06-2014
Address:	5 Francis J. Clarke Circle Bethel, CT 06801
Telephone Number for Information	574-353-7711
Signature of Preparer	James L Green

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%(optional)
Iron - Fe		7439-89-6		>96
Carbon - C		7440-44-0		<1.2
Manganese -Mn		7439-96-5		<1.3
Silicon -Si		7440-21-3		<1.2
Chromium - Cr		7440-47-3		<0.25
Copper – Cu		7440-50-8		<0.2
Nickel - Ni		7440-02-0		<0.2

Section III - Physical/Chemical Characteristics

Boiling Point	2850 - 3150°C	Specific Gravity (H ₂ O = 1) (at 60 degrees F)	>7.6g/cc
Vapor Pressure (mm Hg)	N/A	Melting Point	1371°C-1482°C
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A

Solubility in Water
N/A

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 section IV).

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) N/A	Flammable Limits N/A	LEL N/A	UEL N/A
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Extinguishing Media

**Very fine material will burn when exposed to flame or cutting torch
Remove heat and extinguish with water CO2 or foam.**

Special Fire Fighting Procedures

Cast steel shot and grit will not burn or explode

Unusual Fire and Explosion Hazards

**A mild fire or explosion hazard situation may be created from fine metal dust.
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 Hazard Rating: 0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme
Health (blue) = 0 Flammability (red) = 0 Reactivity (yellow) = 0 Special (colorless)**

Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	N/A
Incompatibility (<i>Materials to Avoid</i>) N/A			
Hazardous Decomposition or Byproducts Shot will break down into progressively smaller particles and dust during normal use.			
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	None-Oxidizes to iron in contact with moisture

Section VI - Health Hazard Data

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 a qualified medical person; call 911 for immediate medical assistance.

The end user should have an industrial hygiene evaluation to determine the proper personal protective equipment for each application or blasting operation. Threshold Limit Values - Permissible Exposure Limits - see Section II

Primary Routes of entry - inhalation of dust or dust particles in eyes. Target Organs - Lung for chromium and lung & nasal for Nickel. Metallic Nickel is reasonably anticipated to be a human carcinogen.

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. 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.

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

Section VII - Precautions for Safe Handling and Use

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

Respiratory protection – If an industrial hygiene evaluation shows dust exceeds OSHA PEL's indicated in Section II, a NIOSH approved respirator with appropriate filters should be worn as determined by the end user.

Eye protection - Approved safety glasses w/side shields should always be worn. Other protective equipment determined by the end user.

Shot spilled or leaked onto floors can create hazardous walking conditions. When cleaning up quantities of dust; if exceeding OSHA permissible exposure limits, an approved respirator with appropriate filters should be used.

Dust from blasting or peening operations always contain contaminants. The dust must be tested to determine if it is hazardous or non-hazardous waste. After such determination, the dust must be disposed of according to appropriate local, State or Federal regulations.

Section VIII – Special Precautions

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

Section X – Transportation

DOT Classification - Not a regulated material Proper Shipping Name - N/A DOT ID # - Not regulated

Section XI – Regulatory

- a) CERCLA Hazardous Substance _____ yes no
- b) SARA, Title III, Extremely Hazardous Substance _____ yes no
- c) Toxic Chemical Release Report yes _____ no

Nickel & Manganese are subject to requirements of Section 313 of the Community Right-to-know Act of 1986 & 40CFR Part 372.

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.

* U.S.G.P.O.: 1986 - 491 - 529/45775