

MSDS

Material Safety Data Sheet

LOW-CARBON STEEL BALLS, AGITATORS, AND BURNISHING MEDIA (all sizes, grades, and geometries)

SECTION 1 -- Producer

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SECTION 2 – Chemical Components

	CAS Number	% by weight
Iron (Fe)	7439-89-6	>98
Manganese (Mn)	7439-96-5	<2

SECTION 3 – Physical Data

Boiling Point (degrees F)	Not applicable (N/ap)
Vapor Pressure (mm Hg @ 20 degrees C)	N/Ap
Vapor Density (air =1)	N/Ap
Solubility in Water	N/Ap
Specific Gravity (H ₂ O =1)	Approx. 8
Percent Volatile by Volume	N/Ap
Evaporative Rate (Ethyl Ether=1)	N/Ap
pH Information	N/Ap
Appearance and Odor	Odorless solid with metallic luster

SECTION 4 -- Fire and Explosion Hazard Data

Flash Point (degrees F)	N/Ap (method used: N/Ap)
Flammability Limits (%/vol.): LEL	N/Ap
UEL	N/Ap
Auto-ignition Temperature (degrees F)	N/Ap
Extinguishing Media	no fire or explosion hazard
Special Fire-fighting Instructions	N/Ap
Unusual Fire and Explosion Hazards	N/Ap

SECTION 5 -- Reactivity Data

Stability (Conditions to Avoid):	Stable
Incompatibility (Materials to Avoid):	None
Hazardous Decomposition Products:	Metal fumes and certain noxious gases, such as CO, may be produced during welding or burning operations. See Sections 6 and 9 for additional information.
Hazardous Polymerization	Will not occur

SECTION 6 – Health Hazard Data

Primary Route(s) of Entry	inhalation, skin contact		
Effects of Exposure	No toxic effects would be expected from its inert solid form. Prolonged, repeated exposure to fumes or dusts generated during heating, cutting, brazing, or welding may cause adverse health effects associated with the following constituents. (Note: Some constituents pose more potential hazards than others, depending upon their inherent toxicity and concentration. Of special concern is iron, and perhaps manganese.)		
	Inhalation	Iron	siderosis, no fibrosis
		Manganese	pneumonitis, CNS involvement, including irritability, difficulty in walking, speech disorders, compulsive behavior, mask-like face, and a Parkinson-like syndrome.
	Skin Contact		may cause irritation
	Eye Contact		may cause irritation
	Ingestion		may cause irritation of the mouth and throat

Exposure Limits:

Chemical Components	OSHA PEL(mg/m ³)	ACGIH TLV (mg/m ³)	NTP Listed	IARC Listed
Iron	10 (as Fe ₂ O ₃ fume)	5 (as Fe ₂ O ₃ fume)	No	No
Manganese	5	1.0 (as fume)	No	No

Emergency & First Aid Procedures:

Inhalation	Seek medical attention, if necessary.
Skin	If irritation develops, remove contaminated clothing immediately and wash contaminated skin with soap or mild detergent and water for five minutes. If irritation persists, seek medical attention.
Eyes	In case of contact, immediately wash eyes with large amount of water for fifteen minutes, occasionally lifting the lower and upper lids. Seek medical attention, if necessary.
Ingestion	Seek medical attention, if necessary.

SECTION 7 – Precautions for Safe Handling and Use

Ventilation	Ventilation, as described in the <i>Industrial Ventilation Manual</i> produced by the American Conference of Governmental Industrial Hygienists, shall be provided in areas where exposures are above the permissible exposure limits or threshold limit values specified by OSHA or other local, state, or federal regulations.
Respiratory Protection	A properly fitted, NIOSH-approved, dust-fume respirator should be worn during welding or burning whenever welding fumes exceed the threshold limits value (TLV) or other recommended limits, in accordance with the OSHA Respiratory Protection Standard (29 CFR 1910.134).
Protective Clothing	Use appropriate protective clothing, such as welder's aprons and gloves, when welding or burning.
Eye Protection	Use face shield (8" minimum) and/or goggles when welding, burning, or grinding.

SECTION 8 – Spill, Leak, and Disposal Procedures

Action to Take for Spills (Use Appropriate Safety Equipment)	N/Ap
Waste Disposal Method	N/Ap

SECTION 9 – Special Precautions and Additional Information

Precautions to be Taken in Handling and Storage	None
DOT Hazardous Material Proper Shipping Name	N/Ap
DOT Hazard Class	N/Ap
DOT Identification Number	N/Ap
EPA Hazardous Waste Number	N/Ap
Additional Information	During welding, precautions should be taken for airborne contaminants and noxious gases that may originate from the welding process or from components of the welding rod. Of special concern are silica or silicates, or both; fluorides; copper, manganese; carbon monoxide, and nitrogen oxides. Arc and sparks generated when welding with this product could be a source of ignition for combustible and flammable materials.

While the information and recommendations set forth on this Material Safety Data Sheet are believed to be accurate as of the present date, Washington Mills Ceramics Corporation makes no warranty with respect thereto and disclaims all liability from reliance thereon.