



Safety Data Sheet
Manganese-Aluminum Metal



SECTION 1: IDENTIFICATION

Product Name: Manganese-Aluminum Metal Chemical Formula: Mn, Al Other Names: 85Mn, 93Mn, Briquettes, Tablets, Mini-Tablets, Pellets Intended Use / Restrictions on Use: For professional/industrial use only.	Contact Information: Greenwich Metals, Inc. 165 West Putnam Ave. Greenwich, CT 06830 Phone: 203-622-4848 Emergency Contact: Chemtrec – call 1-800-424-9300
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SECTION 2: HAZARDS IDENTIFICATION

Classification: Acute aquatic toxicity (Category 1) – H400 Chronic aquatic toxicity (Category 1) – H410 Substance and Mixture, which in contact with water, emit flammable gasses (Category 1) – H260	
Label Elements: Hazard Pictograms:	
	  GHS09 GHS02
Signal Word:	Danger
Hazard Statements:	H410 – Very toxic to aquatic life with long lasting effects H260 – In contact with water release flammable gases which may ignite spontaneously
Precautionary Statements:	P223 – Keep away from any possible contact with water, because of violent reaction and possible flash fire. P273 – Avoid release to the environment. P280 – Wear eye protection, protective clothing, protective gloves. P391 – Collect spillage. P335 – Brush off loose particles from skin. P370+P378 – In case of fire: Use dry sand, dry chemical, or alcohol resistant foam for extinguishing. P501 – Dispose of contents/container in accordance with local, regional, national and international regulations.
Other Hazards:	Avoid formation and consolidation of dust.
Unknown Acute Toxicity Statement:	
Not Applicable	

SECTION 3: COMPOSITION

Name: Manganese Aluminum Metal

Synonyms: 85Mn, 93Mn, Briquettes, Tablets, Mini-Tablets, Pellets

Chemical Name	CAS Number	% by Weight
Manganese (Mn)	7439-96-5	84-95%
Aluminum (Al)	7429-90-5	5-16%

Mixture:

For exact composition, refer to analysis or specifications.

SECTION 4: FIRST AID MEASURES

Required Treatment:

After inhalation, move to fresh air and rest in a position comfortable for breathing.

After skin contact, wash skin thoroughly.

After eye contact, remove contact lenses if applicable and flush eyes with water for at least 15 minutes.

After ingestion, do not induce vomiting. Rinse mouth with water. Call poison control center or doctor.

Important Symptoms & Effects, Acute & Delayed:

Notable symptoms listed in Section 11. If feeling un-well after exposure, consult with a doctor.

Indication of Medical Attention:

If any acute or chronic symptoms arise or if feeling unwell after exposure, seek medical advice.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Techniques/Equipment:

Use dry agent such as dry powder, sand, or talc. Use extinguishing media appropriate for surrounding environment. Do not use water on molten metal.

Chemical Hazards from Fire:

Dust may combust. May react violently with water creating flammable hydrogen gas.

Special Equipment and Precautions for Firefighters:

Exercise caution. If entering fire area, wear proper protective equipment including respiratory protection if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures/Personal Protection:

Avoid dust formation. Avoid breathing fumes and dust.

Evacuate all unnecessary personnel.

Protective Equipment:

Use appropriate personal protection equipment (PPE), as listed in section 8.

Methods of Containment & Cleanup:

Sweep up using a natural fiber brush and non-sparking pan. Dry, clean material may be re-used. Wet or contaminated material should be placed in a lock-top steel container and stored in a safe outside area physically separated from other activities. Wet manganese will oxidize, generate heat and hydrogen gas which may auto-ignite.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling:

When solid, practice good industrial hygiene and safety procedures. Do not allow dust or powder to accumulate on equipment or building surfaces. Clean exposed areas.

Precautions for Safe Storage:

Store in cool, dry and well ventilated location. Seal containers. Keep away from incompatible materials such as metal oxides (rust), water and aqueous solutions, acids, halogen gases, alkalis, and hydrogen peroxide.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

Manganese	USA ACGIH	ACGIH TWA (mg/m ³)	0.20 mg/m ³
Manganese	USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1.0 mg/m ³
Manganese	USA OSHA	OSHA PEL (TWA) (mg/m ³)	5.0 mg/m ³
Aluminum	USA OSHA	OSHA PEL (TWA) (mg/m ³)	15mg/m ³ (Total Dust)
Aluminum	USA OSHA	OSHA PEL (TWA) (mg/m ³)	15mg/m ³ (Total Dust)

Engineering Controls:

Ensure adequate ventilation. Emergency eye wash stations and safety showers should be nearby any potential exposure. Ensure national/local regulations are observed.

Personal Protective Equipment:

Protective goggles, gloves and clothing. If insufficient ventilation, wear respiratory protection.

Materials for Protective Clothing: Wear chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant gloves. If working with molten or hot material, wear thermally resistant gloves.

Eye Protection: Chemical goggles or safety glasses should be worn at all times. For furnace work, wear a face shield or safety glasses.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Thermal Hazard Protection: For furnace work, fire retardant clothing, gloves, and safety shoes should be worn.

Consumer Exposure Controls: Do not eat, drink, or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid (Metal)

Color: Grey/Silver

Taste: N/A

Molecular Weight: N/A

Odor: N/A

Odor Threshold: N/A

pH: N/A

Melting Point: 735 °C (1,355 °F) for Mn/Al

Boiling Point: N/A

Boiling Range: N/A

Flash Point: N/A

Evaporation Rate: N/A

Flammability: May form combustible dust concentrations in air

Upper/Lower Flammability Limits: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Relative Density: 4.2 g/mL at 25 °C for Mn/Al

Solubility: Insoluble in water

Partition Coefficient: N/A

Auto-ignition Temperature: N/A

Decomposition Temperature: N/A

Viscosity: N/A

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May react violently with water.

Stability: Stable under proper handling and storage conditions.

Hazardous Reactions: Powdered aluminum and iron oxide can cause thermite reactions. Oxidation in water leads to hydrogen production.

Conditions to Avoid: Avoid incompatible materials, dust generation, moisture, excess heat.

Incompatible Materials: Water and aqueous solutions, acids, halogen gases, alkalis, hydrogen peroxide, and strong oxidizing agents, metal oxides.

Hazardous Decomposition Products: Hydrogen gas may be produced by oxidation in water.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Exposure

Inhalation of dust, fumes. Skin contact through physical contact. Eye contact through physical contact or dust and fumes. Ingestion through contamination of skin/surfaces.

Chronic and Acute Related Symptoms/Effects:

Inhalation of fumes or dust can cause respiratory irritation. Skin contact with molten metal can cause burns. Dust or fumes can cause eye irritation. Chronic exposure may cause manganese poisoning. Symptoms include lethargy and weakness in legs. Advanced stage may cause neurological and neurobehavioral effects.

Measures of Toxicology:

Acute Toxicity: Not Classified

Skin Corrosion/Irritation: Not Classified

Serious Eye Damage/ Irritation: Not Classified

Respiratory or Skin Sensitization: Not Classified

Germ Cell Mutagenicity: Not Classified

Reproductive Toxicity: Not Classified

Carcinogenic Information: IARC Group: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Toxicity to fish – LC50 – *Oncorhynchus Mykiss* (rainbow trout) – 0.12mg/l – 96h (Al)

Mortality LOEC – *Ctenopharyngodon Idella* (Grass Carp) 0.1mg/l – 96h (Al)

Persistence and Degradability: No data available

Bioaccumulative Potential: *Salvelinus Fontinalis* – 56d – 268 µg/l – Bio-concentration Factor: 36 (Al)

Mobility in Soil: No data available

Other Adverse Effects:

Prevent entry to sewers and public waterways. Avoid release to the environment. Ensure accordance with national and local regulations.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORTATION INFORMATION

UN Number: 3077

UN Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Manganese/Aluminum)

Transport Hazard Classes: 9

Packing Group: III

Environmental Hazards: N/A

Transport in Bulk: N/A

Special Precautions: Keep dry.

SECTION 15: REGULATORY INFORMATION

US Federal Regulations:

SARA Section 302 – None

SARA Section 311/312 Hazard Classes – Fire Hazard, Delayed (chronic) Health Hazard, Reactivity Hazard

SARA Section 313 Emissions Reporting – Aluminum and Manganese are subject to reporting levels established by SARA.

US State Regulations:

California – Prop. 65 – Non-carcinogenic

Massachusetts – Right To Know List

Pennsylvania – Right To Know List

New Jersey – Right To Know List

SECTION 16: OTHER INFORMATION

Date of Preparation: 05/31/15

Prepared in accordance with OSHA HCS 29 CFR 1910.1200.

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