Safety Data Sheet (SDS)

Feed Grade Manganese Oxide (MnO) 60% Powder

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SECTION 1: Identification

1.1 Product identifier

- **Product Name:** Feed Grade Manganese Oxide (MnO) 60% Powder
- **Trade Name:** Manganese Oxide 60%
- **CAS Number:** 1344-43-0
- **Molecular Formula:** MnO

1.2 Relevant identified uses of the substance or mixture and uses advised against

- **Identified Uses:** Food additive, Agricultural chemicals, Welding and soldering product, Zinc Electrolysis.
- **Uses Advised Against:** Not for human consumption directly. Avoid uses other than those specified.

1.3 Details of the supplier of the safety data sheet

- **Company Name:** BTLnewmaterial
- **Address:** Room 706, No. 154, Wuyi East Road, Niezhou Residential Committee, Caizichi Sub-district Office, Leiyang City, Hengyang City, Hunan Province, China
- **Email:** lixifirm@outlook.com
- **Phone/WhatsApp:** +8618273793022
- **Website:** manganesesupply.com

1.4 Emergency telephone number

- **Emergency Information:** +8618273793022 (BTLnewmaterial) or nearest toxicological information centre.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification according to OSHA Hazard Communication Standard (29 CFR 1910.1200):

Section	Hazard Class	Category	Hazard Class and Category	Hazard Statement
A.6	Carcinogenicity	1A	Carc. 1A	H350

2.2 Label elements

Labelling according to OSHA Hazard Communication Standard (29 CFR 1910.1200):

- **Pictogram:** GHS08 (Health Hazard)
- **Signal Word:** Danger
- **Hazard Statements:**
  - H350: May cause cancer.
- **Precautionary Statements:**
  - **Prevention:**
    - P201: Obtain special instructions before use.
    - P280: Wear protective gloves/protective clothing/eye protection/face protection.
  - **Response:**
    - P308+P313: If exposed or concerned: Get medical advice/attention.
  - **Storage:**
    - P405: Store locked up.
  - **Disposal:**
    - P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

- **Results of PBT and vPvB assessment:** According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Identifiers	Molecular Formula	Molar Mass	Purity	Impurities and Additives
Manganese Oxide	CAS No: 1344-43-0	MnO	70.94 g/mol	>80%	Aluminium oxide (< 10%), Diiron trioxide (< 10%), Silicon dioxide (< 10%)

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

- **General notes:** Take off immediately all contaminated clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label or safety data sheet where possible).
- **Following inhalation:** Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
- **Following skin contact:** After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention.
- **Following eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- **Following ingestion:** Rinse mouth. Do not induce vomiting. Get medical advice/attention if you feel unwell.
- **Notes for the doctor:** None.

4.2 Most important symptoms and effects, both acute and delayed

- This information is not readily available in the provided source. However, exposure to manganese compounds can lead to symptoms affecting the central nervous system, including neurological disorders (manganism) with symptoms resembling Parkinson’s disease, and respiratory issues if inhaled over prolonged periods.

4.3 Indication of any immediate medical attention and special treatment needed

- None specific, treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

- **Suitable extinguishing media:** Water, foam, alcohol-resistant foam, fire extinguishing powder.
- **Unsuitable extinguishing media:** Water jet.

5.2 Special hazards arising from the substance or mixture

- **Hazardous decomposition products:** Section 10 (Stability and Reactivity).
- **Hazardous combustion products:** Metal oxides (manganese).

5.3 Advice for firefighters

- In case of fire and/or explosion, do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.
- **Special protective equipment for firefighters:** Use suitable breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel:** Remove persons to safety. Ventilate affected area. Do not breathe dust. Wear suitable protective equipment (including personal protective equipment referred to under Section 8) to prevent any contamination of skin, eyes, and personal clothing.
- **For emergency responders:** Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

- Keep away from drains, surface, and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible

authority. Stop leak if safe to do so.

6.3 Methods and material for containment and cleaning up

- **Advice on how to contain a spill:** Take up mechanically.
- **Advice on how to clean up a spill:** Take up mechanically. Collect spillage. Place in appropriate containers for disposal. Ventilate affected area.
- **Other information relating to spills and releases:** None.

6.4 Reference to other sections

- Hazardous combustion products: see Section 5.
- Personal protective equipment: see Section 8.
- Incompatible materials: see Section 10.
- Disposal considerations: see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Avoid contact with skin and eyes. Do not breathe dust. Use local and general ventilation to prevent fire as well as aerosol and dust generation. Dust deposits may accumulate on all deposition surfaces in a technical room. Avoid release to the environment. Do not eat, drink, and smoke in work areas. Wash hands after use. Preventive skin protection (barrier creams/ointments) is recommended. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

- **Flammability hazards:** None.
- **Incompatible substances or mixtures:** See Section 10.
- **Protect against external exposure, such as:** Heat, humidity, sunlight.
- **Ventilation requirements:** Provision of sufficient ventilation.
- **Specific designs for storage rooms or vessels:** Store in a dry place.
- **Packaging compatibilities:** Keep only in original container.

7.3 Specific end use(s)

- No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limit Values (Workplace Exposure Limits):

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Notation	Source
US	Manganese, inorganic compounds	-	TLV®	-	0.1	-	-	i, Mn	ACGIH® 2023
US	Manganese, inorganic compounds	-	TLV®	-	0.02	-	-	r, Mn	ACGIH® 2023
US	Manganese compounds	-	PEL (CA)	-	0.2	-	-	Mn	Cal/OSHA PEL
US	Manganese compounds	-	REL	-	1 (10 h)	-	3	Mn	NIOSH REL
US	Manganese compounds	-	PEL	-	-	-	-	Mn	29 CFR 1910.1000

- **i:** Inhalable fraction
- **r:** Respirable fraction
- **Mn:** Manganese

8.2 Exposure controls

Appropriate engineering controls

- Use local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures

- **Eye/face protection:** Safety glasses with side-shields or chemical safety goggles.
- **Skin protection:**
  - **Hand protection:** Wear suitable protective gloves (e.g., nitrile rubber, PVC).

    - **Other skin protection:** Wear suitable protective clothing to prevent skin contact.
- **Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment (e.g., dust mask, respirator with P2 filter).
- **Thermal hazards:** No information available.

Environmental exposure controls

- Avoid release to the environment. Prevent from entering sewers, ditches, or waterways.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value
Appearance	Greenish-brown powder
Odor	Odorless
Odor threshold	No data available
pH	No data available
Melting point/freezing point	~1785 °C (Manganese(II) oxide) [1]
Initial boiling point and boiling range	No data available
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Non-flammable
Upper/lower flammability or explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	5.18 g/cm^3 (Manganese(II) oxide) [1]
Bulk Density	1.0–1.5 g/cm^3
Solubility(ies)	Insoluble in water; soluble in acids (e.g., citric acid, HCl)
Solubility in 2% Citric Acid	≥ 85–90%
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Not applicable (solid)
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing

9.2 Other information

- **Particle Size:** 80–200 mesh
- **Moisture:** ≤ 1.5%

SECTION 10: Stability and reactivity

10.1 Reactivity

- The product is not reactive under normal conditions of use, storage, and transport.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No hazardous reactions known under normal conditions of use.

10.4 Conditions to avoid

- Avoid moisture, high temperatures, and incompatible materials.

10.5 Incompatible materials

- Strong acids, strong oxidizing agents.

10.6 Hazardous decomposition products

- Under normal conditions of storage and use, hazardous decomposition products should not be produced. In case of fire, see Section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- **Acute toxicity:** No data available for the mixture. Manganese compounds can be harmful if swallowed or inhaled.
- **Skin corrosion/irritation:** May cause mild skin irritation.

- **Serious eye damage/eye irritation:** May cause eye irritation.
- **Respiratory or skin sensitization:** No information available.
- **Germ cell mutagenicity:** No data available.
- **Carcinogenicity:** May cause cancer (Category 1A, H350) based on prolonged or repeated exposure to manganese compounds, particularly via inhalation.
- **Reproductive toxicity:** No data available.
- **STOT-single exposure:** No data available. May cause central nervous system effects.
- **STOT-repeated exposure:** Prolonged or repeated exposure to manganese dusts/fumes can cause manganism, a neurological disorder.
- **Aspiration hazard:** Not an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

- **Aquatic toxicity:** Manganese compounds can be toxic to aquatic organisms at high concentrations. Avoid release to waterways.

12.2 Persistence and degradability

- Manganese oxide is an inorganic compound and is not readily biodegradable.

12.3 Bioaccumulative potential

- Manganese can accumulate in organisms, but the bioaccumulation potential of manganese oxide itself is generally low.

12.4 Mobility in soil

- Low mobility in soil due to its insoluble nature.

12.5 Results of PBT and vPvB assessment

- This substance is not a PBT or a vPvB.

12.6 Other adverse effects

- No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- **Product:** Dispose of in accordance with local, regional, national, and international regulations. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Ensure complete and accurate classification of waste.
- **Packaging:** Dispose of contaminated packaging as unused product.

SECTION 14: Transport information

14.1 UN number

- Not regulated as hazardous material for transport.

14.2 UN proper shipping name

- Not applicable.

14.3 Transport hazard class(es)

- Not applicable.

14.4 Packing group

- Not applicable.

14.5 Environmental hazards

- Not a marine pollutant.

14.6 Special precautions for user

- No special precautions required.

14.7 Transport in bulk according to Annex II of MARPOL $^{73}/_{78}$ and the IBC Code

- Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- **US Federal Regulations:**
  - **OSHA Hazard Communication Standard (29 CFR 1910.1200):** Classified as hazardous.
  - **CERCLA/SARA:** Not listed.
  - **TSCA:** All components are listed on the TSCA inventory or are exempt.
- **State Regulations:** Consult state and local regulations for specific requirements.
- **International Regulations:**
  - **GHS:** Classified according to the Globally Harmonized System of Classification and Labelling of Chemicals.

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out for this substance/mixture.

SECTION 16: Other information

16.1 Abbreviations and acronyms

- **ACGIH®:** American Conference of Governmental Industrial Hygienists
- **CAS:** Chemical Abstracts Service
- **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act
- **CFR:** Code of Federal Regulations
- **GHS:** Globally Harmonized System of Classification and Labelling of Chemicals
- **H:** Hazard Statement
- **LC50:** Lethal Concentration 50%
- **LD50:** Lethal Dose 50%
- **MARPOL:** International Convention for the Prevention of Pollution from Ships
- **MnO:** Manganese Oxide
- **MSDS:** Material Safety Data Sheet
- **NIOSH:** National Institute for Occupational Safety and Health
- **OSHA:** Occupational Safety and Health Administration

- **P:** Precautionary Statement
- **PBT:** Persistent, Bioaccumulative, and Toxic
- **PEL:** Permissible Exposure Limit
- **ppm:** parts per million
- **PVC:** Polyvinyl chloride
- **REL:** Recommended Exposure Limit
- **SARA:** Superfund Amendments and Reauthorization Act
- **SDS:** Safety Data Sheet
- **STEL:** Short-Term Exposure Limit
- **STOT:** Specific Target Organ Toxicity
- **TDS:** Technical Data Sheet
- **TLV®:** Threshold Limit Value
- **TSCA:** Toxic Substances Control Act
- **TWA:** Time-Weighted Average
- **UN:** United Nations
- **vPvB:** very Persistent and very Bioaccumulative

16.2 Key literature references and sources for data

- Valudor Products, LLC. Safety Data Sheet: Manganese Oxide 60%. [https://www.valudor.com/wp-content/uploads/2024/04/Manganese-Oxide-60.pdf]
- Sigma-Aldrich. Safety Data Sheet: Manganese(IV) oxide. [https://www.sigmaaldrich.com/US/en/sds/aldrich/529664]
- ESPI Metals. Manganese Oxide MnO. [https://www.espimetals.com/index.php/msds/664-Manganese%20Oxide%20MnO]

16.3 Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

[1] https://pubchem.ncbi.nlm.nih.gov/compound/Manganese-II-oxide - PubChem. Manganese(II) oxide. Retrieved March 16, 2026.