SAFETY DATA SHEET

IntelliBond M

1. Identification of Substance and Supplier

Product Name	IntelliBond®M
Alternative Names	Manganese Hydroxychloride Manganese Chloride Hydroxide Tribasic Manganese Chloride Basic Manganese Chloride Selko IntelliBond M
Recommended Use of Chemical	Animal feed additive
Use Restrictions	IntelliBond®M is intended only for use as a source of manganese in animal feeds or research purposes.
Manufacturer's Information	Micronutrients USA LLC 1550 Research Way Indianapolis, Indiana 46231 317-486-5880
Emergency Phone Number	CHEMTREC (800)424-9300 Micronutrients (317) 486-5880

2. Hazards Identification

GHS Classification of Substance	Target Organ Toxicity from Single Exposure, Category 2
National or Regional Information	Not Applicable
GHS Label Elements	WARNING May cause damage to organs  Wash hands thoroughly after handling. IF exposed or concerned: call a POISON CENTER / doctor.
Other Hazards	None known

3. Composition / Information on Ingredients

Ingredient Name	CAS Number	EC Number	Percent of Total Weight
Manganese Hydroxychloride ($Mn_2(OH)_3Cl$)	39438-40-9	Not Applicable	50 - 95%

4. First Aid Measures

Eye	Flush eyes with large amounts of water for at least 15 minutes. If irritation persists, seek medical advice.
Skin	Wash exposed skin with soap and water. If irritation persists, seek medical advice.
Ingestion	Contact Poison Control and occupational physician.
Inhalation	Remove individual to fresh air, and seek medical advice.
Note to Physician	Symptoms of acute manganese exposure include lung irritation. Treat symptomatically.

5. Firefighting Measures

Suitable extinguishing media	Utilize compatible fire extinguishing media, including water and any dry media, carbon dioxide (CO_2)
Fire and Explosion Hazards	Material is not considered combustible. Material may melt with decomposition under fire conditions.
PPE and precautions for firefighters	Self-contained breathing apparatus may be appropriate when fighting fires with manganese compounds present.

6. Accidental Release Measures

Suggested PPE, Equipment and Procedures	Wear disposable coveralls, FFP2 / P2 filter mask, rubber gloves, and protective eye goggles or total face protection.
Environmental Precautions	Prevent the product from entering water courses or sewers.
Methods and materials for containment and cleanup	Material is dry powder form. Lightly sweep or vacuum material to collect. Place in a clean, dry container.

7. Handling and Storage

Handling Precautions	Store in a cool, dry place. Practice good personal hygiene when handling product. Avoid dust formation. Do not breathe dust. Handle in a well-ventilated area or wear adequate respiratory protection (FFP2/P2 filter mask). Avoid contact with skin and eyes using working clothes, gloves and protective glasses. Do not eat, smoke or drink during use. After use keep the packaging tightly closed.
Storage Precautions	Do not allow bags to become wet, or exposed to fire or extreme heat. Keep in sealed containers away from humidity and sunlight. Store the product in a well-ventilated warehouse away from flammable products. Keep out of reach of children, animals and unauthorized personnel.

8. Exposure Controls / Personal Protection

Occupational Exposure Limit Values	There are no TLV established specifically for manganese hydroxychloride. The values provided are for Elemental Manganese. OSHA 8 hr PEL – 1 mg/m^3 NIOSH 15 min STEL – 3 mg/m^3
Engineering Controls	Local or general area ventilation to control dust.
Individual Protection Measures	Protective eyewear is prudent, especially in dusty areas Practice good personal hygiene when handling materials. Respiratory protection should be selected appropriate to the dustiness of the work environment

9. Physical and Chemical Properties

Appearance	Brown particulates (typical particle size 20 - 300 μm)
Odor	Odorless
Odor Threshold	Not applicable
pH	6.0 – 7.5 in water, measured by EPA method SW846-9045
Melting Point / Freezing Point	Melting Point – 617°F
Initial Boiling Point and Boiling Range	Not Applicable
Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability	Non-Flammable
Upper / Lower flammability or explosive limits	Not Applicable
Vapor Pressure	Not Applicable
Vapor Density	Not Applicable
Relative Density	2.8 – 3.0
Solubility	Material is soluble in mineral acids. Material soluble in ammonia, amine and EDTA solutions under complex formulation.
Partition Coefficient; n-octanol / water	Not Applicable
Auto-Ignition Temperature	Not Applicable
Decomposition Temperature	617°F

10. Stability and Reactivity

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur
Conditions to Avoid	None Known
Incompatible Materials	Strong oxidizing agents, organic peroxides, strong acids.
Hazardous Decomposition Products	Will decompose when heated about 617°F, May decompose to produce toxic fumes of manganese chloride.

11. Toxicological Information

Exposure Routes	Dermal absorption, inhalation, ingestion
Toxicological characteristics and symptoms	This material was subjected to a research study involving feeding this material to animals in varying concentrations greater than normal animal feed additive concentrations. The results of the study indicate that the animals were able to substitute this manganese material for the manganese supplement that they had been accustomed to being fed with no adverse health effects.
Delayed Effects	None known
Immediate Effects	Ingestion of large amounts of manganese containing material may be harmful. Metal chloride compounds have been reported to cause eye and / or skin irritation, which may be an allergic reaction. Discoloration of skin may occur, but it is not indicative of injury or illness. Manganese compounds can be toxic by ingestion. Manganese compounds may be toxic if inhaled. Inhalation of metal dust has caused damage to red blood cells, liver, pancreas, lung cells, and has the potential to cause neurological effects.
Chronic Effects	May cause potential neurological effects.

Acute Toxicity Estimates	Elemental Manganese - Oral LD_{50} (rat) 9,000 mg/kg. LD_{50} has not been established for this product.

12. Ecological Information

Ecotoxicity	None known
Persistence and degradability	The product is not environmentally persistent. It will release manganese as a trace mineral when it reacts with acids, bases, or complexing reagents.
Bio-accumulative potential	Manganese is an essential trace mineral, which is needed to sustain normal metabolic functions. Manganese is not bio-accumulative, and is readily cleared and excreted.
Mobility in soil	Not Applicable
Other adverse effects	Not Applicable

13. Disposal Considerations

Description of waste residues	Waste residues are not anticipated outside of commercial packaging or unintended spills of material.
Safe Handling and Disposal methods	Dispose of contents/containers in accordance with local/regional/international regulations.

14. Transport Information

UN Number	Material is not regulated by DOT/ADR
UN Proper Shipping Name	Material is not regulated by DOT/ADR
Transport Hazard Class(es)	Material is not regulated by DOT/ADR
Packing Group	Material is not regulated by DOT/ADR
Marine Pollutant	No
Special Precautions	Not Applicable

15. Regulatory Information

Applicable Regulations	Manganese compounds are considered to be toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. SARA – Acute Health Hazard Tier I / Tier II (40 CFR 370.25) reporting required if present and on-site in quantities equal to or exceeding 10,000 pounds. SARA Title III – Section 313 Form R / TRI Reportable Chemical (Manganese Compounds)

16. Other

Disclaimer	Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).
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SDS revision date	March 15, 2019