SAFETY DATA SHEET

IntelliBond Z

1. Identification of Substance and Supplier

Product Name	IntelliBond Z
Alternative Names	Zinc Hydroxychloride Zinc Chloride Hydroxide Monohydrate Tetrabasic Zinc Chloride (TBZC) Basic Zinc Chloride Selko IntelliBond Z
Recommended Use of Chemical	Animal feed additive
Use Restrictions	IntelliBond®Z is intended only for use as a source of zinc in animal feeds or research purposes only.
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	Not Applicable
National or Regional Information	Not Applicable
GHS Label Elements	Not Applicable
Other Hazards	None known

3. Composition / Information on Ingredients

Ingredient Name	CAS Number	EC Number	Percent of Total Weight
Zinc Hydroxychloride ($Zn_5(OH)_8Cl_2 \cdot (H_2O)$)	12167-79-2	Not Applicable	50 - 98%

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 zinc metal exposure include; convulsions, vomiting, abdominal pain, shock and death. Treat symptomatically.

SAFETY DATA SHEET

IntelliBond Z

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 zinc compounds present.

6. Accidental Release Measures

Suggested PPE, Equipment and Procedures	Wear rubber gloves, and protective eye goggles or total face protection.
Environmental Precautions	None Known
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 un-authorized personnel.

8. Exposure Controls / Personal Protection

Occupational Exposure Limit Values	There are no TLV established specifically for zinc hydroxychloride The values provided are for Zinc Metal Dust. OSHA 8 hr PEL – 1 mg/m^3 ACGIH 8 hr TLV: 1mg/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	Off-white to tan particulate (particle size may range from : 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 – 329°F Freezing Point – Not Applicable
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	3.1 - 3-3
Solubility	Material is insoluble in water. 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	329º F

10. Stability and Reactivity

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur
Conditions to Avoid	None Known
Incompatible Materials	None known
Hazardous Decomposition Products	Will decompose with emissions of zinc chloride above 329ºF.

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 zinc material for the zinc supplement that they had been accustomed to being fed with no adverse health effects.
Delayed Effects	None Known
Immediate Effects	Symptoms of harmful levels of zinc metal include: convulsions, vomiting, abdominal pain, shock and death. Material is potentially moderately irritating to eyes.
Chronic Effects	None Known
Acute Toxicity Estimates	As with any zinc compound, ingestion or inhalation of large amounts, (30mg/Kg) body weight can trigger acute zinc toxicity. LD_{50} not established for this product.

12. Ecological Information

Ecotoxicity	None Known
Persistence and degradability	IntelliBond®Z is not environmentally persistent, and when reacted with acids, bases or complexing reagents, will release trace zinc minerals.
Bioaccumulative potential	Zinc is an essential trace mineral, which is needed to sustain normal metabolic functions. Zinc is not bio-accumulative, and is readily cleared and excreted.
Mobility in soil	Not Applicable
Other adverse effects	None Known

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	None Known

15. Regulatory Information

Applicable Regulations	SARA Hazard Classes – SARA – Acute Health Hazard SARA Title III – Section 313 Supplier Notification SARA Title III component: Zinc Tier I / Tier II (40 CFR 370.25) reporting required if present and on-site in quantities equal to or exceeding 10,000 lbs. SARA Title III – Section 313 Form R / TRI Reportable Chemical.

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).
SDS Preparation	Carla Jackson, Mingsheng Huang
SDS revision date	March 15, 2019