

# Corn Mix

## 1. Identification

**Product Identifier/Label Name:**            **Corn Mix**  
**Other means of Identification:**  
**Synonyms:**                                        Corn Mix

**Recommended use:**                            Fertilizer Micronutrient Additive  
**Recommended restrictions:**                None known

**Manufacturer/Importer/Distributor/Information**  
**Manufacturer/Supplier:**                    INDUSTRIAL AND AGRICULTURAL CHEMICALS, INC.  
**Address:**                                        2042 Buie Philadelphus Rd  
    Red Springs, NC 28377  
**Phone:**    910-843-2121  
**Contact Name:**                                Randall F. Andrews  
**Contact Email:**                                rfa@semr.net  
**Emergency Phone Number:**                Chemtrec USA: 800-424-9300 (24hrs)

## 2. Hazard(s) Identification

### Physical Hazards

Not Classified under GHS

### Health Hazards

Acute toxicity, oral	Category 4
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity, repeated exposure (inhalation)	Category 2 (central nervous system, lung)

### Environmental Hazards

Not Classified under GHS or OSHA

**GHS Signal Word:**                            **DANGER**

**GHS Hazard Statement(s):**

**H318 - Causes serious eye damage**  
**H335 - May cause respiratory irritation**  
**H373 - May cause damage to organs (Central Nervous System) through prolonged or repeated exposure (by inhalation)**

GHS Hazard Symbol(s):



GHS Precautionary Statement(s):

**Prevention:**

Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume. Do not eat, drink or smoke when using this product. Avoid release to the environment.

**Response:**

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. Collect spillage.

**Storage:**

Store away from incompatible materials.

**Disposal:**

Dispose of contents/container in accordance with local, regional, national, and international regulations.

**Hazard(s) not otherwise Classified (HNOC):** None known**Percentage of ingredient(s) of unknown acute toxicity:**

72% of the mixture consists of ingredients of unknown acute toxicity (oral).

81% of the mixture consists of ingredients of unknown acute toxicity (inhalation).

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Mixture of Borates and Oxides of Copper, Iron, Manganese, and Zinc

Chemical Name	CAS #	Concentration (weight %)
Copper Oxide	1317-38-0	1-3
Iron Oxide	1309-37-1	10-15
Manganese Oxide	1344-43-0	10-15
Ulexite	1319-33-1	8-12
Zinc Oxide	1314-13-2	20-40

Note: The balance of the ingredients are not classified as hazardous or are below the concentration limit to be classified as hazardous, under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

## 4. First Aid Measures

**Inhalation:** Remove to a fresh air environment. Seek medical attention.

**Eye Contact:** Wash with running water for at least 15 minutes. If easy to do, remove contact lenses. Seek medical attention if irritation persists.

**Skin Contact:** Wash with water at least 15 minutes. If irritation persists, seek medical attention.

**Ingestion:** Induce vomiting (lean victim forward to reduce risk of aspiration). Never induce vomiting or give anything by mouth if the victim is unconscious having convulsions. Seek medical attention.

**Most Important Symptoms/effects, Acute, and delayed:**

Harmful if swallowed

**Indication of immediate medical attention and special treatment needed, if necessary:**

Symptoms may be delayed. Treat symptomatically.

*After first aid, get appropriate in-plant, paramedic, or community medical support.*

**Note to Physicians:** None

**Special Precautions/Procedures:** None

## 5. Fire Fighting Measures

**Suitable Extinguishing Media:** Product is not combustible. Extinguish with foam, carbon dioxide, dry powder or water fog.

**Unsuitable extinguishing media:** None Known

**Special hazards arising from the chemical:** during fire, gases hazardous to health may be formed. Reacts with oxidizers such as H<sub>2</sub>O<sub>2</sub>, F<sub>2</sub>, Ca(OCl)<sub>2</sub> and organic peroxides.

**Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus and full protective clothing must be worn in the case of fire.

**Fire-Fighting Equipment/Instructions:** Cool containers exposed to heat with water spray and remove container, if no risk is involved

**Special Methods:** Keep unnecessary personnel away.

**General Fire hazards:** No unusual fire or explosion hazards noted.

## 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Wear appropriate personal protective equipment including respiratory protection. Ensure adequate ventilation and evacuate personnel to safe areas.

**Methods and materials for containment and cleaning up:**

**Small Spills:** Sweep up and try to keep dust to a minimum.

**Large Spills:** Sweep up and try to keep dust to a minimum.

**Containment:** Collect in a suitable container. Do not release into sewers or waterways.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

## 7. Handling and Storage

**Precautions for safe handling:** Use proper safety equipment at all times. Use good personal hygiene practices and wear appropriate protective equipment. Wash hands before breaks and at the end of work. Clothing being used around chemicals should be cleaned daily.

**Conditions for safe storage, including any incompatibles:**

Store materials in a cool dry place away from strong oxidizers. Keep container tightly closed.

## 8. Exposure Controls/Personal Protection

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available:

Substance	PEL-TWA (8 hr)	PEL-STEL (15 mins)
Copper Oxide	1 mg/m <sub>3</sub>	None Known
Iron Oxide	1 mg/m <sub>3</sub>	None Known
Manganese Oxide	5 mg/m <sub>3</sub> (ceiling)	None Known
Ulexite	5 mg/m <sub>3</sub>	None Known
Zinc Oxide	5 mg/m <sub>3</sub>	None Known

US ACGIH THRESHOLD LIMIT VALUES			
Substance	TLV-TWA	TLV-STEL	REMARKS
Copper Oxide	1 mg/m <sup>3</sup>	None Known	N/A
Iron Oxide	5 mg/m <sup>3</sup>	None Known	Pneumoconiosis Not classified as human carcinogen
Manganese Oxide	0.2 mg/m <sup>3</sup>	None Known	Central Nervous System impairment
Ulexite	2 mg/m <sup>3</sup>	None Known	Upper Respiratory Tract irritation
Zinc Oxide	2 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	Metal fume fever

Substance	TLV-TWA	TLV-STEL
Copper Oxide	0.1 mg/m <sup>3</sup>	None Known
Iron Oxide	5 mg/m <sup>3</sup>	None Known
Manganese Oxide	1 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
Ulexite	2 mg/m <sup>3</sup>	None Known
Zinc Oxide	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

**Appropriate engineering controls:** Provide good ventilation systems. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source. Provide eyewash station.

**Individual protection measures, such as personal protective equipment:**

**Eye/Face Protection:** Wear safety glasses with side shields (or Goggles).

**Skin and Hand Protection:** Wear protective gloves, boots and aprons to prevent prolonged or repeated skin contact.

**Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

**Other:**

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics. Consider periodic medical exams of exposed workers with emphasis on skin, respiratory, and blood screening.

## 9. Physical and Chemical Properties

**Physical State:** Granular Solid

**Appearance and Odor:** Gray to black with no appreciable odor.

**Odor Threshold:** Not determined.

**Vapor Pressure:** NA

**Vapor Density (Air=1):** NA

**Formula Weight:** Variable

**Bulk Density:** 75 - 98 lbs. cubic foot estimated

**pH:** 1/100 dilution 5-6

**Water Solubility:** Slightly soluble

**Boiling Point:** NA

**Freezing/Melting Point:** NA

**Viscosity:** NA  
**Refractive Index:** NA  
**Surface Tension:** NA  
**% Volatile:** NA  
**Evaporation Rate:** NA

## 10. Stability and Reactivity

**Stability/Reactivity:** This product is stable and non-reactive at room temperature in closed containers under normal storage, handling, and transport conditions.

**Possibility of hazardous reactions:** No dangerous reactions known under conditions of normal use.

**Conditions to Avoid:** Contact with incompatible materials.

**Hazardous Decomposition Products:** None expected.

## 11. Toxicological Information

### Information on likely routes of exposure:

**Inhalation:** Dust may irritate the respiratory system. Prolonged inhalation may be harmful.

**Skin:** Dust or powder may irritate the skin.

**Eye:** Causes serious eye irritation.

**Ingestion:** Harmful if swallowed. May cause stomach upset.

### Symptoms related to the physical, chemical, and toxicological characteristics:

Severe eye irritation. Dusts may irritate the respiratory tract, nose, skin and eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

**Skin corrosion/irritation:** May cause skin irritation

**Serious eye damage/eye irritation:** May cause eye irritation.

**Respiratory sensitization:** Not a respiratory sensitizer

**Skin sensitization:** Not a skin sensitizer

**Germ mutagenicity:** Not classified

**Carcinogenicity:** Not Classified

**Reproductive toxicity:** Not Classified

**Specific target organ toxicity- Single exposure:** Not Classified

**Specific target organ toxicity- Repeat exposure:** May cause damage to organs (Central nervous system, lung) through prolonged or repeated exposure by inhalation.

**Aspiration hazard:** Not classified

## 12. Ecological Information

**Ecotoxicity:** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.

**Persistence and Degradability:** None known

**Bioaccumulative Potential:** This material is not expected to bioconcentrate in fish.

**Soil Absorption/Mobility:** On soil this mix may leach into the groundwater. Because it is slightly soluble, removal by rain, snow or other precipitation is possible.

**Other adverse effects:** None known

## 13. Disposal Considerations

**Product:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations. This product has been evaluated for RCRA characteristics and should not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous.

**Contaminated packaging:** Contaminated packaging may contain residues of product. Dispose of in the manner as product. Comply with applicable local, state, or international regulations concerning solid or hazardous waste disposal and/or container disposal.

## 14. Transport Information

**Land Transport DOT Transportation Data (49 CFR 172.101):**

Not Regulated

**Maritime transport IMDG**

**UN Number:** UN 3077

**UN Proper shipping name:** Environmentally hazardous substance, solid, N.O.S. (Manganese Oxide, Zinc Oxide, Copper Oxide)

**Transport hazard class(es):** 9

**Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)**

Not applicable.



## 15. Regulatory Information

Safety, health and environmental regulations specific for the product in question.

**USA:**

**United States Federal Regulations:** This SDS complies with the OSHA, 29 CFR 1910.1200. This product is hazardous under OSHA.

**Toxic Substances Control Act (TSCA)** - This substance is listed, as required, on the TSCA inventory.

**SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):** None

**Section 311/312 (40 CFR 370):**

**Acute Health Hazard:** Yes

**Chronic Health Hazard:** Yes

**Fire Hazard:** No

**Pressure Hazard:** No

**Reactivity Hazard:** No

**Section 313 Toxic Release Inventory (40 CFR 372):** Manganese oxide, Manganese sulfate, Copper sulfate, Copper oxide, Zinc oxide and Zinc Sulfate are listed.

**STATE REGULATIONS**

This SDS contains specific health and safety data applicable for North Carolina's state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

## 16. Other Information

**Revision Date:** November 1, 2015

**National Fire Protection Association (NFPA) Rating  
 Hazardous Materials Identification System (HMIS) Rating**

	NFPA	HMIS
HEALTH	1	1
FIRE	0	0
REACTIVITY/INSTABILITY	0	0

4 = Extreme/Severe  
3 = High/Serious  
2 = Moderate  
1 = Slight  
0 = Minimum  
W = Water Reactive  
OX = Oxidizer  
\* = Chronic Health Hazard

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