MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Test Blend Fertilizer Materials - Muriate of Potash
Chemical Name:	Mixture of inorganic and organic fertilizer salts, and oxides
Chemical Family:	NA
Synonyms:	Fertilizer Test Sample Blends
Chemical Formula:	NA
Primary Use:	Test Material For Analytical Method Development
Responsible Party:	Mosaic 3095 Highway 640 West Mulberry, FL 33860
Non-Emergency Technical Contact:	8:00am – 4:00pm, Mon – Fri: 863-428-7161

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Number:
For Chemical Emergencies:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

Health Hazards:	Dusts, if generated, may cause eye and respiratory irritation
Physical Hazards:	None expected
Physical Form:	Solid or Liquid
Appearance:	Grey to Brown Powder or clear liquids
Odor:	None

NFPA HAZARD CLASS		**HMIS HAZARD CLASS**	
Health:	1 (Slight)	Health:	1 (Slight)
Flammability:	0 (Least)	Flammability:	0 (Least)
Instability:	0 (Least)	Reactivity:	0 (Least)
Special Hazard:	None	PPE	Section 8

2. COMPOSITION/INFORMATION ON INGREDIENTS

Possible Components	**% Weight**	**Exposure Guideline**		
		Limits	**Agency**	**Type**
May contain Manganese compounds at unknown percentages	Possibly >1%	5.0 mg/m^3 0.2% mg/m^3	OSHA ACGIH	All All
May contain Lead compounds at unknown percentages	Possibly >1%	0.05% mg/m^3 0.05% mg/m^3 0.1 mg/m^3	OSHA ACGIH NIOSH	All All All
May contain Iron compounds at unknown percentages	Possibly >1%	2500 mg/m^3 1 mg/m^3	NIOSH OSHA ACGIH	IDLH TWA
Free Silica (Quartz) CAS No. (14808-60-7)	Possibly > 1%	10 mg/m^3 (%SiO_2 + 2) respirable dust	OSHA MSHA	TWA
NE = Not established, but the following particulate limits apply to all inert inorganic dusts.				
Particulates Not Otherwise Classified (PNOC)		10 mg/m^3 3 mg/m^3	ACGIH	TWA – Inhalable TWA - Respirable
Particulates Not Otherwise Regulated (PNOR)		15 mg/m3 5 mg/m3	OSHA	TWA – Total Dust TWA - Respirable

Notes:

State, local or other agencies or advisory groups may have published more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS	
Eye:	Dusts, if generated, may be abrasive and irritating to the eyes and cause stinging, watering and redness.
Skin:	Dusts, if generated, may be abrasive and mildly irritating to the skin. No harmful effects from skin absorption are expected.
Inhalation (Breathing):	The toxicological properties of this material have not been fully investigated, however, a low degree of toxicity by inhalation of dusts, if generated, is expected. Effects of overexposure to dusts may include irritation of the nose and throat, coughing, shortness of breath and lung disease.
Ingestion (Swallowing):	The toxicological properties of this material have not been fully investigated, however, a low degree of toxicity by ingestion is expected. Ingestion of large amounts may cause local gastrointestinal upset.
Signs and Symptoms:	Effects of overexposure may include irritation of nose, throat, and respiratory tract.
Cancer:	No data available on mixture
Target Organs:	No data available on mixture. Studies of specific occupational groups with high-level silica exposure (e.g., miners) have shown increased rates of autoimmune diseases compared to the expected rates in the general population.
Developmental:	No data available on mixture.
Other Comments:	This material may contain iron compound(s). Effects of overexposure to dusts can include irritation of the eyes and respiratory tract, pneumoconiosis (dust congested lungs) pneumonitis (lung inflammation), coughing, vomiting, diarrhea, abdominal pain and jaundice. Prolonged or repeated overexposure to fluoride compounds may cause fluorosis. Fluorosis is characterized by skeletal changes, consisting of osteosclerosis (hardening or abnormal density of bone) and osteomalacia (softening of bones) and by mottled discoloration of the enamel of teeth (if exposure occurs during enamel formation). Symptoms may include bone and joint pain and limited range of motion. Prolonged exposure to respirable crystalline silica, a component of the dust (if generated) from this product, may cause delayed lung injury called fibrosis (silicosis). Symptoms of exposure include cough and shortness of breath.
Pre-Existing Medical Conditions:	Respiratory (asthma-like) and skin disorders.

4. FIRST AID MEASURES

Eye:	Use of this product is highly unlikely to cause eye irritation if proper precautions are followed. If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water for at least 15 minutes. If symptoms persist, seek medical attention.
Skin:	Use of this product is highly unlikely to cause skin irritation. Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.
Inhalation (Breathing):	Use of this product is highly unlikely to cause respiratory problems if proper precautions are followed. If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
Ingestion (Swallowing):	First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.
Note to Physicians:	Use of this product is highly unlikely to cause respiratory problems if proper precautions have been followed. Prolonged exposure to respirable crystalline quartz, a component of dust from this material, may cause delayed lung injury/fibrosis (silicosis). If silicosis develops, chances of getting tuberculosis are increased.

5. FIRE FIGHTING MEASURES

Flammable Properties:	**This material is non-flammable.** Flash Point—Not applicable OSHA Flammability Class—Not applicable LEL/UEL—Not applicable Autoignition Temperature—Not applicable
Unusual Fire & Explosion Hazards:	None known.
Extinguishing Media:	Use extinguishing agent suitable for type of surrounding fire. Avoid excessive water to minimize runoff.
Fire Fighting Instructions:	Positive pressure, self-contained breathing apparatus is required for all fire fighting activities involving hazardous materials. Full structural fire fighting (bunker) gear is the minimum acceptable attire. The need for proximity, entry, flashover and/or special chemical protective clothing (see Section 8) needs to be determined for each incident by a competent fire fighting safety professional.

6. ACCIDENTAL RELEASE MEASURES

- Cleanup workers should wear appropriate protective clothing as conditions warrant (see Section 8). Minimize dust generation. Sweep up for recovery if uncontaminated.

7. HANDLING AND STORAGE

Handling:	The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8). Wash thoroughly after handling. Wash contaminated clothing or shoes. Use good personal hygiene practice.
Storage:	When possible, store and use this material in cool, dry, well ventilated areas to protect product quality. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required.

Personal Protective Equipment (PPE)	
Respiratory:	A NIOSH approved air purifying respirator with a type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2). Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed if workplace conditions warrant a respirator.
Skin:	The use of cloth or leather work gloves is advised to prevent skin contact, possible irritation and absorption (see glove manufacturer literature for information on permeability).
Eye/Face:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended.
Other PPE:	A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point:	NA

Flammable/ Explosive Limits(%):	NA
Autoignition Temperature:	NA
Appearance:	Grey to Brown Powder
Physical State:	Solid
Odor:	None
Molecular Weight of Pure Material:	NA
pH:	5-8
Vapor Pressure (mm Hg):	NA
Vapor Density (air=1):	NA
Boiling Point:	NA
Freezing/Melting Point:	NA
Solubility in Water:	10-99%
Specific Gravity:	1.5-3.0
Volatility:	NA
Bulk Density:	50-90 lb/ft^3

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal conditions
Conditions to Avoid:	Extreme heat will cause emissions of toxic fumes.
Incompatible Materials:	Contact with acids may cause release of toxic decomposition products.
Corrosivity:	Not known
Hazardous Decomposition Products:	If heated to the point of decomposition, fumes of metal oxides and fluoride may be released.
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Fluorides	No LD50 or LC50 information located No data located regarding skin irritation Prolonged or repeated overexposure to fluoride compounds may cause fluorosis. Fluorosis is characterized by skeletal changes, consisting of osteosclerosis (hardening or abnormal density of bone), osteomalacia (softening of bones) and by mottled discoloration of the enamel of teeth if exposure occurs during enamel formation. Symptoms may include bone/joint pain and limited range of motion.

Iron Compounds/ Target Organ(s):	No LD50 or LC50 information located No data located regarding eye or skin irritation Chronic exposure to high concentrations of iron have been associated with hemosiderosis, hemochromatosis and in severe cases, liver cirrhosis. Typical occupational exposures to iron compounds are not expected to cause these effects. Chronic inhalation can produce "mottling" of the lungs (siderosis). This is considered a benign pneumoconiosis and does not normally lead to fibrosis or cause significant physiologic impairment.
Crystalline Silica:	Acute oral toxicity, (LD50): 3160 mg/kg (rat). No data located regarding eye or skin irritation Prolonged exposure to respirable crystalline silica, a component of the dust (if generated) from this product, may cause delayed lung injury called fibrosis (silicosis). Symptoms of exposure include cough and shortness of breath. Persons with silicosis may develop tuberculosis. The International Agency for Research on Cancer (IARC) has classified crystalline silica inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1). The National Toxicology Program (NTP) has listed crystalline silica (respirable) as reasonably anticipated to be a carcinogen. Studies of specific occupational groups with high-level silica exposure (e.g., miners) have shown increased rates of autoimmune diseases compared to the expected rates in the general population.
No definitive information available for this product on skin irritation, carcinogenicity, mutagenicity, target organs or developmental toxicity.	

12. ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data located.
BOD and COD:	No data found.

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not an RCRA "listed" or "characteristic" hazardous waste. Contamination may subject it to hazardous waste regulations. Properly characterize all waste materials. Consult state and local regulations regarding the proper disposal of this material.

14. TRANSPORT INFORMATION

Hazard Class or Division:	Not listed in the hazardous materials shipping regulations (49 CFR, Table 172.101) by the U.S. Department of Transportation, or in the Transport of Dangerous Goods (TDG) Regulations Canada.

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15. REGULATORY INFORMATION

CERCLA:	Not listed.
RCRA 261.33:	Not listed.
SARA Title III: (Exemptions at 40 CFR, Part 370 may apply for agricultural use, or quantities of less than 10,000 pounds on-site)	**SARA 313:** Not listed **SARA 311/312:** Acute: Yes (dust); Chronic: Yes (dust); Fire: No; Pressure: No; Reactivity: No **SARA 302/304:** Not listed
TSCA:	All ingredients are listed in the TSCA Inventory
Proposition 65: (CA Health & Safety Code Section 25249.5)	(CA Health & Safety Code Section 25249.5): Warning: This product contains substances that are known to the State of California to cause cancer and/or reproductive harm.
NTP, IARC, OSHA:	IARC & NTP have classified crystalline silica manganese and lead compounds possible components of this mixture as carcinogenic.
Canada DSL:	Yes
Canada NDSL:	No
WHMIS:	This MSDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** This information and product are furnished on the condition that the person receiving them shall make his own determination as to suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.