



SECTION 1		PRODUCT AND COMPANY INFORMATION			
TRADE NAME:		Aspire® with Boron			
CHEMICAL NAME:		Potassium Chloride plus Boron, MOP plus Boron			
CHEMICAL FAMILY:		Inorganic Salt			
SYNONYMS:		Potassium Chloride plus Sodium Tetraborate Potash plus Sodium Tetraborate Potassium Muriate plus Sodium Tetraborate Muriate of Potash (MOP) plus Sodium Tetraborate			
CHEMICAL FORMULA		MOP plus 0.5% Boron			
PRIMARY USE:		Crop nutrient			
COMPANY INFORMATION:		The Mosaic Company 3033 Campus Drive Plymouth, MN 55441 USA www.mosaicco.com For non-emergency questions, phone hours are 8 AM to 5 PM Central Time US 800.918.8270 (toll free) 763.577.2700 (phone)			
EMERGENCY TELEPHONE:		EMERGENCY OVERVIEW 24 Hour Emergency Telephone Number: <u>For Chemical Emergencies:</u> Spill, Leak, Fire or Accident Call CHEMTREC North America: (800) 424-9300 (CCN 201871) Others: (1-703) 527-3887 (collect)			
SECTION 2		HAZARD IDENTIFICATION			
EMERGENCY OVERVIEW :		Health Hazards:		Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Potassium chloride is generally recognized as safe (GRAS). Reproductive and developmental effects have been reported in animal data for Sodium Tetraborate.	
		Physical Hazards:		None expected	
		Physical Form:		Solid	
		Appearance:		White to reddish-brown, crystalline or granular	
		Odor:		None	
		Toxicity:		None expected under normal use.	
		NFPA HAZARD CLASS		HMIS HAZARD CLASS	
		Health:	1	Health:	1*
		Flammability:	0	Flammability:	0
		Instability:	0	Physical Hazard:	0
		Special Hazard:	None	PPE:	Section 8
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				WHMIS HAZARD CLASS	
				Symbol	
				Classification	D2
				Sub Class (N/A)	A, B



POTENTIAL HEALTH EFFECTS:	Eye:	Contact may cause mild eye irritation including stinging, watering and redness.	
	Skin:	Contact may cause mild irritation including redness and a burning sensation. No information available on skin absorption. May cause irritation through mechanical abrasion.	
	Inhalation (Breathing):	Dust may irritate throat and respiratory system and cause coughing.	
	Ingestion (Swallowing):	May be harmful if swallowed. Do not take internally. Do not taste or swallow.	
	Signs and Symptoms:	Effects of overexposure may include irritation of the nose, throat and digestive tract, nausea, vomiting, diarrhea, abdominal cramping, irregular heartbeats (arrhythmias), dehydration, and hypertension. Repeated overexposure to dusts may result in irritation of the respiratory tract, coughing and shortness of breath.	
	Cancer:	Inadequate data available to evaluate the cancer hazard of Potassium Chloride. Sodium Tetraborate is not classifiable as a human carcinogen.	
	Target Organs:	No data available for Potassium Chloride. Individuals exposed to Sodium Tetraborate may experience eye tearing, redness, and discomfort. Dust may irritate throat and respiratory system and cause coughing.	
	Developmental:	Inadequate data available for Potassium Chloride. This product is not classified as a mutagenic material.	
	Other Comments:	Chronic effects are not expected when this product is used as intended.	
	Pre-Existing Medical Conditions:	Conditions aggravated by exposure may include kidney disorders, and abnormal blood pressure.	
POTENTIAL ENVIRONMENTAL EFFECTS:	Potassium Chloride is a naturally occurring mineral used as a crop nutrient and plant food however; large spills can harm or kill vegetation.		
SECTION 3	COMPOSITION INFORMATION ON INGREDIENTS		
FORMULA:	MOP plus 0.5% Boron		
COMPOSITION:	Potassium Chloride	CAS No. 7447-40-7	95 - 99.5 %
	Sodium Chloride	CAS No. 7647-14-5	0.3 - 3.7 %
	Sodium Tetraborate	CAS No. 1330-43-4	<3 %
	Calcium and Magnesium Chlorides and Sulfates	CAS No. Various	0.2 - 1.3 %
SECTION 4	FIRST AID MEASURES		
FIRST AID PROCEDURES:	Eyes:	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:	Cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.	



	Inhaled:	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:	If large amounts are swallowed, seek emergency medical attention. If victim is drowsy or unconscious and vomiting, place on left side with the head down and do not give anything by mouth. If victim is conscious and alert and ingestion occurred within the last hour, vomiting should be induced for ingestion of large amounts (more than 5 ounces or a little more than 1/2 cup in an adult) preferably under direction from a physician or poison center. If possible, do not leave victim unattended and observe closely for adequacy of breathing.
NOTE TO PHYSICIAN:	None known.	
SECTION 5	FIRE FIGHTING MEASURES	
FLAMMABLE PROPERTIES:	Flash Point:	Not applicable
	OSHA Flammability Class:	Not applicable
	LEL/UEL:	LEL: Not applicable / UEL: Not applicable
	Auto-Ignition Temperature:	Not applicable
EXTINGUISHING MEDIA:	Use extinguishing agent suitable for type of surrounding fire.	
PROTECTION OF FIREFIGHTERS:	<p>No unusual fire or explosion hazards are expected. When this material is subjected to high temperatures, it may release small amounts of chloride gas. 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.</p> <p>Water used for fire suppression and cooling may become contaminated. Discharge to sewer system(s) or the environment may be restricted, requiring containment and proper disposal of water (see Section 6).</p>	
SECTION 6	ACCIDENTAL RELEASE MEASURES	
RESPONSE TECHNIQUES:	<p>Muriate of Potash is a naturally occurring mineral used as a crop nutrient and plant food however; large spills can harm or kill vegetation.</p> <ul style="list-style-type: none"> Stay upwind and away from spill (dust hazard). Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Notify appropriate federal, state, and local agencies as may be required (see Section 13). Minimize dust generation. Sweep up and package appropriately for disposal. 	
RELEASE NOTES:	<p>If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802. In case of accident or road spill notify: CHEMTREC in North America at 800-424-9300; CHEMTREC in other countries at (International code) +1-703-527-3887 (collect).</p>	



SECTION 7		HANDLING AND STORAGE	
HANDLING:	Avoid inhalation of dust and contact with skin and eyes. Use work methods which minimize dust production. Wear appropriate personal protective equipment. Wash thoroughly after handling. Wash contaminated clothing. Use good personal hygiene practice.		
STORAGE:	Keep container(s) tightly closed. When possible use and store this material in cool, dry, well ventilated areas. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.		
SECTION 8		EXPOSURE CONTROLS / PERSONAL PROTECTION	
ENGINEERING CONTROLS:	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional ventilation or exhaust systems may be required.		
PERSONAL PROTECTIVE EQUIPMENT (PPE):	Eye/Face:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.	
	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).	
	Respiratory:	Protection is not required where adequate ventilation conditions exist. Use a dust mask or other appropriate respiratory protection where engineering controls are not feasible or during operations that generate airborne concentrations exceeding the relevant standards. 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.	
	Other:	A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.	
GENERAL HYGIENE CONSIDERATIONS:	Wash thoroughly after handling. Wash contaminated clothing. Use adequate ventilation. Use good personal hygiene practice.		
EXPOSURE GUIDELINES:	Potassium Chloride	Particulates Not Otherwise Regulated (PNOR): 5 mg/m3 TWA – Respirable - OSHA 15 mg/m3 TWA - Total Dust - OSHA	
	Sodium Tetraborate	2 mg/m ³ (TWA) – Inhalable fraction – ACGIH 6 mg/m ³ (STEL) – Inhalable fraction - ACGIH	
SECTION 9		PHYSICAL AND CHEMICAL PROPERTIES	
Note: Unless otherwise stated, values in this section are determined at 20°C (68°F) and 760 mm Hg (1 atm).			
Flash Point:	No data available		
Flammability/ Explosive Limits (%):	LEL: Not applicable	UEL: Not applicable	
Auto-Ignition Temperature:	No data available		



Appearance:	White to reddish-brown, crystalline or granular
Physical State:	Solid
Odor:	None/Strong saline
pH:	5.4 - 10.0 in a 5% solution
Vapor Pressure (mm Hg):	No data available
Vapor Density (air=1):	No data available
Boiling Point:	Sublimes at 1,500°C (2,732°F)
Freezing/Melting Point:	772 to 776°C (1423 to 1428°F)
Solubility in Water:	99.5 - 99.999%; 34.2 g/100mL at 20°C
Specific Gravity:	1.986 - 1.990
Volatility:	No data available
Bulk Density:	Loose - 64 to 75 lbs/ft ³ (1025 to 1200 kg/m ³)
SECTION 10	STABILITY AND REACTIVITY
Chemical Stability:	Stable under normal conditions of storage and handling. Material is hygroscopic (May absorb moisture from air when relative humidity >72%).
Conditions to Avoid:	None known
Incompatible Materials:	Avoid contact with hot nitric acid, which may cause evolution of toxic nitrosyl chloride. Contact with other strong acids may produce irritating hydrogen chloride gas. KCl may react violently with bromine trifluoride and may explode if mixed with potassium permanganate and sulfuric acid. NaCl can react with most noble metals, such as iron or steel, building materials (such as cement), bromine, or trifluoride. A potentially explosive reaction may occur if NaCl is mixed with dichloromaleic anhydride and urea. Electrolysis of mixtures containing NaCl and nitrogen compounds may form explosive nitrogen trichloride. Avoid contact with strong acids, oxidizers, nitric acid and sulfuric acid.
Hazardous Decomposition Products:	None known.
Corrosiveness:	Similar to salt. Mildly corrosive to metals in the presence of moisture.
Hazardous Polymerization:	Will not occur

SECTION 11	TOXICOLOGICAL INFORMATION
Acute Oral Toxicity	Potassium Chloride: LD ₅₀ (rat) = 2.6 g/kg LD ₅₀ (mouse) = 1.5 g/kg Sodium Chloride: LD ₅₀ (rat) = 3 g/kg LD ₅₀ (mouse) = 4 g/kg Sodium Tetraborate: LD ₅₀ (rat) >2.5 g/kg
Acute Inhalation Toxicity	No data available for Potassium Chloride or Sodium Tetraborate. Sodium Chloride: LC ₅₀ (rat) >42 g/m ³ / 1 hour
Acute Dermal Toxicity	Sodium Tetraborate: LD ₅₀ (rabbit) > 2g/kg
Mutagenesis	This product is not classified as a mutagenic material.



Target Organ	No data available for Potassium Chloride. Individuals exposed to Sodium Tetraborate may experience eye tearing, redness, and discomfort. Dust may irritate throat and respiratory system and cause coughing.		
Developmental Toxicity	Inadequate data available for Potassium Chloride. This product is not classified as a mutagenic material.		
Carcinogenicity	Inadequate data available to evaluate the cancer hazard of Potassium Chloride. Sodium Tetraborate is not classifiable as a human carcinogen.		
SECTION 12	ECOLOGICAL INFORMATION		
ECOTOXICOLOGY:	Dissolution of large quantities of Potassium Chloride and Sodium Chloride in water may create an elevated level of salinity that may be harmful to fresh water aquatic species and to plants that are not salt-tolerant.		
	Potassium Chloride:		
	Lepomis macrochirus	LC ₅₀	2010 mg/L
	Physa heterostrapha	LC ₅₀	940 mg/L
	Scenedesmus subspicatus	EC ₅₀	2500 mg/L
	Sodium Chloride:		
	Ceriodaphania dubia	LC ₅₀	280,000 - 3,540,000 ug/L
	Daphnia magna	LC ₅₀	3,144,000 - 10,000,000 ug/L
	Daphnia pulex	EC ₅₀	56.40 mM
	Pimephales promelas	LD ₅₀	6,020,000 - 10,000,000 ug/L
Sodium Tetraborate:			
Gambusia affinis	LC ₅₀	104 mg/L, 96 hours	
SECTION 13	DISPOSAL CONSIDERATIONS		
	This material, if discarded as produced, is not an RCRA "listed" or "characteristic" hazardous waste (USA). Contamination may subject it to hazardous waste regulations. It is the generator's responsibility to properly characterize all waste materials prior to disposal. Consult federal, state/provincial and local regulations regarding the proper disposal of this material.		
SECTION 14	TRANSPORTATION INFO		
Regulatory Status	Not listed in the hazardous materials shipping regulation (49 CFR, Table 172.101) by the U.S. Department of Transportation, or in the Transport of Dangerous Goods (TDG) regulations in Canada.		
Proper Shipping Name	Not applicable		
Hazard Class	Not applicable		
Packing Group	Not applicable		
Identification Number	Not applicable		
Guide Number	Not applicable		
HTS (Harmonized Tariff Schedule) Code	3104.20.00		



SECTION 15	REGULATORY INFORMATION				
FDA:	Potassium Chloride used as a nutrient and/or dietary supplement in food for human consumption. FDA Food Substances Generally Recognized as Safe 21 CFR 184.1 (2010).				
CERCLA:	Not listed				
RCRA 261.33:	Not listed				
SARA TITLE III: (Exemptions at 40 CFR, Part 370 may apply for agricultural use, or for quantities of less than 10,000 pounds on-site.)	SARA – 311/312:				
	Acute: Yes	Chronic: Yes	Fire: No	Pressure: No	Reactivity: No
	SARA – 313: No				
	SARA – 302/304:		RQ: No		TPQ: No
NTP, IARC, OSHA:	This material has not been identified as a carcinogen by NTP, IARC, or OSHA.				
Canada DSL and NDSL:	DSL: Yes			NDSL: No	
TSCA:	TSCA 8 (b) Chemical Inventory: Yes TSCA 8 (d): No				
CA Proposition 65: (Health & Safety Code Section 25249.5)	Warning: This product contains a chemical known to the State of California to cause cancer; and/or birth defects or other reproductive harm.				
WHMIS:	D2-A, D2-B.				

SECTION 16	OTHER INFORMATION
Disclaimer:	<p>The information in this document is believed to be correct as of the date issued. Nothing herein contained shall be deemed to be a representation or warranty with respect to the product described herein. 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, AND ALL SUCH REPRESENTATIONS AND WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED BY MOSAIC. This information and product are furnished on the condition that the person receiving them shall make their own determination as to suitability of the product for their particular purpose and on the condition that they assume the risk of their use thereof. The conditions and use of this product are beyond the control of Mosaic, and Mosaic disclaims any liability for loss or damage incurred in connection with the use or misuse of this substance.</p>
Preparation:	The preparation of this MSDS was in accordance with ANSI Z400.1-2010.
Revision Date:	November 14, 2013
Sections Revised:	1, 2, 3, 8, 9, 11, 12, 15
MSDS Number:	MOS114753.01
References:	Toxline, Tokes, ECHA, OECD SIDS