Agrium

Material Safety Data Sheet

NFPA Classification	DOT / TDG Pictograms	WHMIS Classification	HMIS		PROTECTIVE CLOTHING
Health 0, Flammability 0, Reactivity, Specific Hazard			Health	1	
			Flammability	0	
			Reactivity	0	
			PPE	A	

Section I. Chemical Product and Company Identification

PRODUCT NAME/ TRADE NAME Muriate of Potash

SYNONYM

This Material Safety Data Sheet applies to the following Agrium 0-0-60 or 0-0-62 Muriate of Potash products:

Blender Coarse Grade
Coarse Grade
Granular Grade
Industrial Standard Grade
Special Standard Grade
Specialty Coarse Grade
Standard Grade
Standard Grade, Low Sodium Chloride
Turf Granular
Water Soluble

Please refer to the appropriate Product Specification Sheet for technical information on each product.

MSDS NUMBER: 14083

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COMPLIANCE/SAFETY

REVISION NUMBER 4.9

CHEMICAL NAME Potassium chloride

CHEMICAL FAMILY Inorganic salt.

MSDS prepared by the Environment, Health and Safety Department on: August 25, 2009

CHEMICAL FORMULA KCl: 95 - 100%; NaCl: 0 - 5%

MATERIAL USES Fertilizer and/or industrial use.

24 HR EMERGENCY TELEPHONE NUMBER:

Transportation: 1-800-792-8311
Medical: 1-888-670-8123

MANUFACTURER

Agrium
North American Wholesale
13131 Lake Fraser Drive, S.E.
Calgary, Alberta, Canada
T2J 7E8

SUPPLIER

Agrium
North American Wholesale
13131 Lake Fraser Drive, S.E.
Calgary, Alberta, Canada, T2J 7E8

Agrium U.S. Inc.
Suite 1700, 4582 South Ulster St.
Denver, Colorado, U.S.A., 80237A

Section II. Hazardous Ingredients

NAME	CAS #	Exposure Limits (ACGIH) TLV-TWA mg/m³	TLV-TWA ppm	STEL mg/m³	STEL ppm	CEIL mg/m³	CEIL ppm	% by Weight
No regulated components.								

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ACGIH TLV notations:
--- No assigned TLV
(C) - Ceiling - the concentration not to be exceeded at any time
(I) - measured as the Inhalable fraction of the aerosol
(R) - measured as the Respirable fraction of the aerosol
(T) - measured as the Thoracic fraction of the aerosol

TOXICOLOGICAL DATA ON INGREDIENTS	**Potash TFI Product Testing Program Results:** Acute oral toxicity: 2,600 mg/kg rat; 1,500 mg/kg mouse Ecotoxicity: Acute toxicity to fish, species unspecified, LC_{50}, 96hr: 2,010 mg/L Acute toxicity to aquatic invertibrates, Daphnia magna, 48hr TLm 337mg/L Toxicity to aquatic plants (algae) Chlorella vulgaris, NOEC=600 mg/L, 3-4 months This product and its components are not considered hazardous according to WHMIS (Canada) HSC, (United States) and DSCL (Europe).

Section III. Hazards Identification.

POTENTIAL ACUTE HEALTH EFFECTS	This product may irritate eyes and skin upon contact due to mechanical action and drying action. Inhalation of dust may produce irritation to the gastro-intestinal or respiratory tract. Ingestion of excessive quantities of this substance may produce irritation of the gastro-intestinal tract, characterized by irritation, nausea, vomiting and diarrhea. Potassium chloride is rapidly excreted from the body in the absence of pre-existing kidney or circulatory system disfunction making acute toxic effects very rare. Potassium chloride is used as a salt substitute in human sodium reduced diets and as an animal nutrition suppliment.
POTENTIAL CHRONIC HEALTH EFFECTS	There is no known effect from chronic exposure to this product in healthy individuals. The product is not carcinogenic, mutagenic or teratogenic. Individuals with existing kidney problems should minimize their exposure to this substance. Potassium chloride is used as a dietary supplement in food for human consumption and is classed as being "generally recognized as safe" when used in accordance with good manufacturing practice. 21 CFR 182.5622

Section IV. First Aid Measures

EYE CONTACT	May cause irritation by mechanical action. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Obtain medical attention if irritation persists.
MINOR SKIN CONTACT	May cause skin irritation. Wash contaminated skin with soap and water. Cover dry or irritated skin with a good quality skin lotion. If irritation persists, seek medical attention.
EXTENSIVE SKIN CONTACT	No additional information.
MINOR INHALATION	Over-exposure by inhalation may cause respiratory irritation. Allow the person to rest in a well ventilated area. Loosen tight clothing around the neck and waist. Obtain medical attention if irritation persists.
SEVERE INHALATION	No additional information.
SLIGHT INGESTION	Low toxicity. Do not induce vomiting. May cause digestive tract irritation, with accompanying nausea, vomiting and diarrhea. If spontaneous vomiting does occur, lower the head so that the vomit will not reenter the mouth and throat. If tolerated, give no more than 1 cup of milk or water to rinse the mouth and throat, dilute the stomach contents, and minimize irritation. No more than 8 ounces (1 cup) in adults and 4 ounces (1/2 cup) in children is recommended to minimize the risk of vomiting. Obtain medical attention if irritation persists.
EXTENSIVE INGESTION	No additional information.

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Section V. Fire and Explosion Data

THE PRODUCT IS	Non-flammable.
AUTO-IGNITION TEMPERATURE	Not applicable.
FLASH POINT	Not applicable.
FLAMMABILITY LIMITS	Not applicable.
PRODUCTS OF COMBUSTION	Not applicable.
FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	Not applicable.
EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES	This product is non-explosive.
FIRE FIGHTING MEDIA AND INSTRUCTIONS	Non-flammable. Use extinguishing media suitable for surrounding materials.
SPECIAL REMARKS ON FIRE HAZARDS	Non combustible.
SPECIAL REMARKS ON EXPLOSION HAZARDS	No additional remark.

Section VI. Accidental Release Measures

SMALL SPILL	Use appropriate tools to put spilled solid in a suitable container for intended use or disposal.
LARGE SPILL	Prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses, wells, etc. Recover and place material in suitable containers for recycle, reuse, or disposal. Ensure disposal complies with government requirements and local regulations.

Section VII. Handling and Storage

PRECAUTIONS	If user operations generate excessive dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.
STORAGE	Contains moisture sensitive material; store in a dry place. Product will absorb moisture and will cake when dried.

Section VIII. Exposure Controls/Personal Protection

ENGINEERING CONTROLS	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust use appropriate ventilation to keep exposure to airborne contaminants below the exposure limit.
PERSONAL PROTECTION	The selection of personal protective equipment varies depending upon conditions of use. As in all industrial areas, use safety glasses with side shields. Under well controlled conditions where exposures are below the occupational exposure limit, normal work clothing should suffice. However, appropriate protective clothing and respiratory protection must be available in the event of an emergency.
PERSONAL PROTECTION IN CASE OF LARGE RELEASE	Where significant skin and eye contact may occur as a result of prolonged or repeated exposures, wear long sleeved clothing, coveralls, leather gloves, and safety glasses with side shields. Use a filtering facepiece dust respirator if concentrations may exceed the occupational exposure limit. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection meeting 29 CFR 1910.134 is in place.
EXPOSURE LIMITS	

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Saskatchewan TWA: 10 mg/m ^{3} Inhalable, 3 mg/m ^{3} Respirable, for Particulate Not Otherwise Classified.

Fed OSHA PEL: 15 mg/m ^{3} Total dust, 5 mg/m ^{3} Respirable fraction, for Particulates Not Otherwise Regulated.

Federal, State or Provincial exposure limits may vary by jurisdiction. Consult local authorities for acceptable exposure limits in your area.

Section IX. Physical and Chemical Properties

PHYSICAL STATE AND APPEARANCE	A crystalline solid ranging from translucent white to reddish-brown due to trace amounts of iron oxide in some products.		
MOLECULAR WEIGHT	74.55	COLOR	White to Brownish-red.
pH (10% SOLN/WATER)	9	ODOR	Odourless, however, product may have a slight oil odour due to dust suppression additive.
BOILING POINT	1411°C (2571.8°F)	ODOR THRESHOLD	Not applicable.
MELTING POINT	773.5°C (1424.3°F)	TASTE	Saline. (Strong.)
CRITICAL TEMPERATURE	Not applicable.	VOLATILITY	Not applicable.
SPECIFIC GRAVITY g/cc	1.984 (Water = 1)	SOLUBILITY	Readily soluble in hot water (56.7 g/100cc) Soluble in cold water (34.4 g/100cc)
BULK DENSITY kg/m^3 ; lbs/ft^3	Refer to the Product Specification Sheet for the density of each potash product.	DISPERSION PROPERTIES	See solubility in water.
VAPOR PRESSURE	Not applicable.	WATER/OIL DIST. COEFF.	Not applicable.
VAPOR DENSITY	Not applicable.		

Section X. Stability and Reactivity Data

STABILITY	The product is stable.
INSTABILITY TEMPERATURE	Not applicable.
CONDITIONS OF INSTABILITY	Not applicable.
INCOMPATABILITY WITH VARIOUS SUBSTANCES	Incompatable with bromine trifluouride or trichloride, potassium dichromate and sulfuric acid, or hot nitric acid.
CORROSIVITY	A salt. Dusts are corrosive to mild steel, aluminum, zinc, and copper. Solutions of potash are corrosive to 304 or 316 stainless steels, and may cause chloride induced stress cracking in these materials. Corrosive properties are highly dependent on operating parameters such as temperature and the strength of any solutions. Consult a metallurgical specialist regarding compatibility of materials of construction in handling systems.
SPECIAL REMARKS ON REACTIVITY	No additional remark.
SPECIAL REMARKS ON CORROSIVITY	Contact your sales representative or metallurgical specialist to ensure compatability with your equipment.

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Muriate of Potash

Section XI. Toxicological Information

SIGNIFICANT ROUTES OF EXPOSURE	Ingestion. Inhalation.
TOXICITY TO ANIMALS	See Section II.
SPECIAL REMARKS ON TOXICITY TO ANIMALS	Not considered to be toxic to animals. Used as an animal feed supplement.
OTHER EFFECTS ON HUMANS	Our data base contains no additional remark on the toxicity of this product
SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS	Not considered to be toxic for humans.
SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS	No additional remark.

Section XII. Ecological Information

ECOTOXICITY	Low toxicity to fish and other water organisms. Spills of large quantities of this product may affect fresh water species.
BOD and COD	Not applicable.
PRODUCTS OF DEGRADATION	Not applicable. Material dissolves to give potassium and chloride ions.
TOXICITY OF THE PRODUCTS OF DEGRADATION	The product itself and its products of degradation are not toxic.
SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION	Product may degrade water quality and taste. Notify downstream water users. Will dissolve and disperse in water. Reclaiming material may not be viable.

Section XIII. Disposal Considerations

WASTE DISPOSAL OR RECYCLING	Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.

Section XIV. Transport Information

DOT / TDG CLASSIFICATION	Not controlled under TDG (Canada) or D.O.T. (U.S.A.)
PIN and Shipping Name	Not applicable.
SPECIAL PROVISIONS FOR TRANSPORT	Not applicable.
DOT (U.S.A) (Pictograms)	

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Section XV. Other Regulatory Information and Pictograms

OTHER REGULATIONS

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product is on the Domestic Substances List (DSL), and is acceptable for use under the provisions of CEPA.

Potassium Chloride used as a dietary supplement in food for human consumption is generally recognized as safe when used in accordance with good manufacturing practice. 21 CFR 182.5622 (4/1/93)

Substance added directly to human food affirmed as generally recognized as safe (GRAS). 21 CFR 184.1622 (4/1/93)

Manufacturers, packers, and distributors of drug and drug products for human use are responsible for complying with the labeling, certification, and usage requirements as prescribed by the Federal Food, Drug, and Cosmetic Act, as amended (secs 201-902, 52 Stat. 1040 et seq., as amended; 21 U.S.C. 321-392). 21 CFR 200-299, 300-499, 820, and 860 (4/1/93)

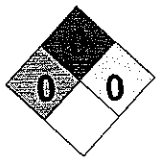
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and is not subject to control under WHMIS (Canada), or the Hazcom Standard (US).

OTHER CLASSIFICATIONS

HCS (U.S.A.)	Not controlled under the HCS (United States).
DSCL (EEC)	Not controlled under DSCL (Europe).

National Fire Protection Association (U.S.A.)

Hazards presented under acute emergency conditions only:



TDG (Pictograms - Canada)

DSCL (Europe) (Pictograms)

ADR (Europe) (Pictograms)

Section XVI. Other Information

REFERENCES

-Transportation of Dangerous Goods Act and Clear Language Regulations, current revision.
-Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
-Domestic Substances List, Canadian Environmental Protection Act.
-29 CFR Part 1910
-33 CFR Parts 151, 153, 154, 156
-40 CFR Parts 1-799
-46 CFR Part 153
-49 CFR Parts 1-199
-American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, 2009.
-NFPA 704, National Fire Codes Online, National Fire Protection Association, current edition at time of MSDS preparation.
-Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers
-CHRIS Hazardous Chemical Data: , U.S. Department of Transportation, U.S. Coast Guard, Washington, D.C.;
- HSDB:Hazardous Substances Data Bank. National Library of Medicine, Bethesda, Maryland
- IRIS: Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, D.C.;

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- NIOSH: Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health, Cincinnati, Ohio;
- OHM/TADS: Oil and Hazardous Materials TechnicalAssistance Data System. U.S. Environmental Protection Agency, Washington, D.C.;
- RTECS®:Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety andHealth, Cincinnati, Ohio;
-The Fertilizer Institute Product Testing Program Results, March 2003
- Saskatchewan Labour, Occupational Health and Safety Division, Occupational Health and Safety Regulations

OTHER SPECIALCONSIDERATIONS **3 Year renewal - references updated.**

FOR FURTHER SAFETY, HEALTH, OR ENVIRONMENTAL INFORMATION ON THIS PRODUCT, CONTACT

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