

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Monopotassium Phosphate**

Product Code(s) : MKP

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: white, granular - crystalline, hygroscopic solid.

Odour: Odourless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not applicable.

Hazard statement(s)

Not applicable.

Precautionary statement(s)

Not applicable.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 2 of 10

SAFETY DATA SHEET

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

Solutions may be corrosive to metals.

Product dust may be irritating to eyes, skin and respiratory system.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Not expected to be harmful to aquatic organisms. Avoid release to the environment.

See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Dihydrogen potassium phosphate	Phosphoric acid, Monopotassium salt; MKP	7778-77-0	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical advice/attention if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.
- Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 3 of 10

SAFETY DATA SHEET

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. Decomposes at high temperatures. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Phosphorus oxides; Phosphine; Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Keep away from incompatibles. Solutions may be corrosive to metals. Keep away from extreme heat and flame. Keep containers closed when not in use. Empty containers retain residue and can be dangerous.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 4 of 10

SAFETY DATA SHEET

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Material is hygroscopic and may absorb moisture from air. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Solutions may be corrosive to metals. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from heat and sources of ignition. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
- Incompatible materials** : Strong acids; Strong bases; Oxidizing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Dihydrogen potassium phosphate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

- : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

Other protective equipment

- : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : white, granular - crystalline, hygroscopic solid
- Odour** : Odourless.
- Odour threshold** : N/Av
- pH** : 4.2-4.5 (208 g/l @ 68°F / 20°C)
- Melting/Freezing point** : 487°F / 252.6°C Melting point
- Initial boiling point and boiling range** : >842°F / >450°C
- Flash point** : N/Av

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 5 of 10

SAFETY DATA SHEET

Flashpoint (Method) : N/Ap
Evaporation rate (BuAe = 1) : N/Ap
Flammability (solid, gas) : Not considered flammable.
Lower flammable limit (% by vol.)
: N/Ap
Upper flammable limit (% by vol.)
: N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : Does not form vapours at normal room temperatures.
Vapour density : N/Ap
Relative density / Specific gravity
: 2.34 g/cm³
Solubility in water : Soluble (208 g/l @ 68°F / 20°C)
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: N/Ap
Auto-ignition temperature : N/Ap
Decomposition temperature : >842°F / >450°C
Viscosity : N/Ap
Volatiles (% by weight) : N/Ap
Volatile organic Compounds (VOC's)
: N/Ap
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. Solutions may be corrosive to metals.
Chemical stability : Stable under normal conditions. Material is hygroscopic and may absorb moisture from air. Decomposes on heating.
Possibility of hazardous reactions
: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Moisture. High humidity. Extreme heat.
Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials : Strong acids; Strong bases; Oxidizing agents.
Hazardous decomposition products
: Phosphorus oxides; Phosphine.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 6 of 10

SAFETY DATA SHEET

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Potential Chronic Health Effects

: Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation. Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	LC₅₀(4hr)	LD₅₀	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Dihydrogen potassium phosphate	N/Av	4640 mg/kg	>4640 mg/kg

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 7 of 10

SAFETY DATA SHEET

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Dihydrogen potassium phosphate	7778-77-0	>100 mg/L (Rainbow trout) (Read-across)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Dihydrogen potassium phosphate	7778-77-0	>100 mg/L(Read-across)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Dihydrogen potassium phosphate	7778-77-0	>100 mg/L/72hr (Read-across)	>100 mg/L/72hr (Read-across)	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Dihydrogen potassium phosphate (CAS 7778-77-0)	N/Av	Not expected to bioaccumulate.

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Monopotassium Phosphate



PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 8 of 10

SAFETY DATA SHEET

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Dihydrogen potassium phosphate	7778-77-0	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Dihydrogen potassium phosphate	7778-77-0	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 9 of 10

SAFETY DATA SHEET

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECS</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
Dihydrogen potassium phosphate	7778-77-0	231-913-4	Present	Present	(1)-452	KE-28622	Present	HSR003211

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 AICS: Australian Inventory of Chemical Substances
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CSA: Canadian Standards Association
 EC50: Effective Concentration 50%.
 EINECS: European Inventory of Existing Commercial chemical Substances
 ENCS: Existing and New Chemical Substances
 EPA: Environmental Protection Agency
 IECSC: Inventory of Existing Chemical Substances
 Inh: Inhalation
 IOC: Inventory of Chemicals
 KECI: Korean Existing Chemicals Inventory
 KECL: Korean Existing Chemicals List
 LC: Lethal Concentration
 LD: Lethal Dose
 MA: Massachusetts
 MN: Minnesota
 N/Ap: Not Applicable
 N/Av: Not Available
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NOEC: No observable effect concentration
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 SARA: Superfund Amendments and Reauthorization Act
 SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TSCA: Toxic Substance Control Act
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 10 of 10

SAFETY DATA SHEET

- References** :
1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
 2. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
 3. IARC Monographs. Overall Evaluation of Carcinogenicity
 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
 5. US EPA Title III List of Lists: March 2015 Version
 6. California Proposition 65 List: May 20, 2016 Version
 7. European Chemicals Agency, Classification Legislation, 2015
 8. Material Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 06/01/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT