Thames River Chemical, 905-681-5353 (Phone), 905-681-5377 (Fax)
3228 South Service Road, Unit #112, Burlington, Ontario, L7N 3H8

THAMES RIVER CHEMICAL

Material Safety Data for: Dipotassium Phosphate (anhydrous)

1. PRODUCT INDENTIFICATION

Name	**dipotassium phosphate**
Synonyms	**dibasic potassium phosphate, dipotassium (mono)hydrogen phosphate, dipotassium orthophosphate**
CAS#	**7758-11-4**
EC#	**231-834-5**
Product Uses	**corrosion inhibitor in radiator antifreeze, buffer in foodstuffs, paper processing, fertiliser, pharmaceuticals & others**

2. INGREDIENTS

	%	TWAEV / TLV ppm / mg/m^3	LD_{50} ORAL	(mg/kg) SKIN	LC_{50} ppm INHALATION
Dipotassium Phosphate	>98%	not listed	1700	not known	not known

3. (a) HAZARDS SUMMARY

Hazards, Quick Guide: may irritate eyes, forms irritating & toxic phosphorus oxides on decomposition

Canada – WHMIS **not controlled under WHMIS**
Key: ***B 2*** *– Flash Point <38°C,* ***B 3*** *– Flash Point >38°C & <93°C*
D 1 *– Immediately Toxic,* ***D 2*** *– Chronic Toxicity*
C – *Oxidising Substance,* ***E -*** *Corrosive*

U.S.A. – HMIS **Health – 0, Fire – 0, Reactivity – 0**
Key: ***0****=minimal,* ***1****=slight,* ***2****=moderate,* ***3****=serious,* ***4****=severe*

3. (b) HAZARDS – TOXICITY

Effects, Acute Exposure

Skin Contact	little or no effect
Skin Absorption	no; no toxic effects likely by this route
Eye Contact	may irritate eyes (as a mechanical irritant or dust)
Inhalation	not known – dust may irritate nose & throat
Ingestion	not known – very low toxicity – not a route of industrial exposure

Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis (*due to alkaline pH*)
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD_{50} (oral)	1700mg/kg (mouse)
LD_{50} (skin)	not known
LC_{50} (inhalation)	not known

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4. FIRST AID

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION: Remove from contaminated area promptly. ***CAUTION: Rescuer must not endanger himself!*** If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. PHYSICAL PROPERTIES

Odour & Appearance	white odourless, hygroscopic crystals
Odour Threshold	not known – odourless
Vapour Pressure	not known – does not vapourise
Evaporation Rate (*Butyl Acetate = 1*)	not known – not volatile
Vapour Density (air = 1)	>6 (*theoretical*)
Boiling Range	does not boil
Melting Point	~360°C / 680°F – *begins to decomposes to potassium pyrophosphate above 300°C / 570°F*
Density	not known
Water Solubility	1500grams/litre – extremely soluble
Also soluble in	slightly soluble in ethanol
Viscosity	not applicable – solid material
pH	8.8 (1% solution) – *slightly alkaline*
Molecular Weight	174grams per mole

6. FLAMMABILITY & FIRE FIGHTING

Flash Point	cannot burn
Autoignition Temperature	cannot burn
Flammable Limits	cannot burn
Combustion Products	oxides of phosphorus
Firefighting Precautions	as for substances sustaining fire; firefighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

7. STABILITY / REACTIVITY

Dangerously Reactive With	may react violently with strong acids
Also Reactive With	none known
Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

8. PROTECTIVE EQUIPMENT / EXPOSURE CONTROL

ACGIH TLV	not listed
OSHA PEL	not listed
STEL	not listed
Ventilation	no special ventilation required
Hands	rubber, neoprene or nitrile gloves may be worn – *others also protect; consult supplier to confirm suitability*
Eyes	safety glasses with side shields – *always protect the eyes*
Clothing	no special protective clothing required

9. HANDLING & STORAGE

Store in a dry environment, away from acids. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use.

Avoid creating or breathing product dust. Always sweep with a dust-suppressing sweeping compound. This substance is hygroscopic. It absorbs moisture from the air, becoming the trihydrate or the hexahydrate.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

10. SPILL PROCEDURES

Leak Precaution	not applicable – solid material
Handling Spill	sweep with dust-suppressing sweeping compound, shovel & store in closed containers for recycling or disposal

11. DISPOSAL

Waste Disposal	**do not flush to sewer**, if local regulations permit, may be put in sanitary landfill,
Containers	**Drums** should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. **Pails** must be vented and thoroughly dried prior to crushing and recycling. **IBCs** (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. ***Never cut, drill, weld or grind on or near this container, even if empty***

12. ENVIRONMENTAL INFORMATION

Bioaccumulation	this product is not a bioaccumulator
Biodegradation	this product cannot biodegrade; once neutralised, plants will absorb it as a fertiliser
Abiotic Degradation	this product is eventually absorbed by plant life
Mobility in soil, water water	this product is water soluble and may move readily in soil and water; the phosphate ion becomes insoluble (and immobile) when attached to calcium or magnesium ions often found in soil
Aquatic Toxicity	
LC_{50} (Fish, 96hr)	not known
EC_{50} (Crustacea, 24hr)	not known
EC_{50} (Algae)	not known – *this product fertilises surface waters algae, greatly promoting plant and algal growth with the potential to cause eutrophication in surface waters*

13. TRANSPORT REGULATIONS

Canada TDG	**PIN**	**UN-not regulated for transport**
AND	**Shipping Name**	**not regulated for transport**
U.S.A. 49 CFR	**Class**	**not regulated for transport**
	Packing Group	**not regulated for transport**
Marine Pollutant		not a marine pollutant

14. EMERGENCY INFORMATION

Canada	**Call CANUTEC (collect)**	**(613) 996-6666**
U.S.A.	**Call CHEMTREC**	**(800) 424-9300**

15. REGULATIONS

Canada DSL	**on inventory**
U.S.A. TSCA	**on inventory**
Europe EINECS	**on inventory**
Korea ECL	**on inventory**
Japan ENCS	**on inventory**
China IECS	**on inventory**
Australia AICS	**on inventory**
Philippines PICCS	**on inventory**
Europe Risk Phrases	**not classified in Europe**
Europe Safety Phrases	**not classified in Europe**

Acceptable Daily Intakes: FAO/WHO expert committee on food additives...recommended.../levels/ for total dietary phosphorus... Unconditional acceptance level /of less than 30 mg/kg body wt/ is considered safe in any type of diet... Conditional acceptance level /of 30-70 mg/kg body wt/ is acceptable only when dietary calcium level is high /phosphates/

Allowable Tolerances: Dipotassium hydrogen phosphate is exempted from the requirement of a tolerance when used as a buffering agent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Residues of potassium phosphate are exempted from the requirement of a tolerance when used as a buffer in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. /Potassium phosphate/

FIFRA Requirements: Dipotassium hydrogen phosphate is exempted from the requirement of a tolerance when used as a buffering agent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Residues of potassium phosphate are exempted from the requirement of a tolerance when used as a buffer in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest. /Potassium phosphate/

FDA Requirements: Dipotassium phosphate used as a sequestrant in food for human consumption is generally recognized as safe when used in accordance with good manufacturing practice. Dipotassium phosphate used as a sequestrant in animal drugs, feeds, and related products is generally recognized as safe when used in accordance with good manufacturing or feeding practice. Potassium phosphates (mono-, di-, and tribasic) are indirect food additives for use only as a component of adhesives. /Potassium phosphates (mono-, di-, and tribasic)/

16. PREPARATION INFORMATION

Prepared for Thames River Chemical by Peter Bursztyn, (705) 734-1577
With data from RTECS, Haz. Substance Data Base, Cheminfo (CCOHS), IUCLID Datasheets (European Chem. Substance Info. System), & others, as available
Preparation Date: ***September 2009*** *Revision Date*: **-**

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