Health Canada Santé Canada

STATUS DECISION OF CONTROLLED AND NON-CONTROLLED SUBSTANCE(S)

Substance: Monopotassium phosphite

Based on the current information available to the Office of Controlled Substances, it appears that the above substance is:

Controlled	☐
Not Controlled	✓

under the schedules of the *Controlled Drugs and Substances Act* (CDSA) for the following reason(s):

- The substance is a derivative of phosphorous acid and is not included under item 22 of Schedule VI to the CDSA.

Prepared by: _____ Date: Jan 18th 2010
Evelyn Soo

Verified by: _____ Date: _____
Marianne Tang

Approved by: _____ Date: _____
DIRECTOR, OFFICE OF CONTROLLED SUBSTANCES

This status was requested by: "third party information removed as per agreement with applicant"

Drug Status Report

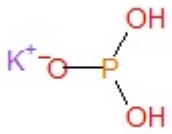
Drug: Monopotassium phosphite

Drug Name Status: Potassium phosphite is the common name.

Chemical Name: Phosphonic acid, monopotassium salt

Other Names: Potassium dihydrogen phosphite; Mono potassium phosphite; Monopotassium dihydrogen phosphite; Potassium phosphite monobasic

Chemical structure:



Molecular Formula: $H_2O_3P.K$

Pharmacological class / Application: Fertilizer

CAS-RN: 13977-65-6

International status:

US: Monopotassium phosphite is not listed specifically in the Schedules to the US *Controlled Substances Act* and is not mentioned anywhere on the DEA website.

United Nations: The substance is not listed specifically on the Yellow List - List of Narcotic Drugs under International Control, the Green List - List of Psychotropic Substances under International Control, nor the Red List - List of Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control.

Canadian Status: Monopotassium phosphite is not listed specifically in the Schedules to the CDSA. The substance (H_3KO_3P) has been reported to be used in the manufacture of fertilizers[1] and synthesized from phosphorous acid and potassium hydroxide, presumably *via* the following reaction:

$$H_3PO_3 + KOH \rightarrow H_2O_3P.K + H_2O$$

A earlier review considered phosphorous acid to be controlled on the basis that the substance is synthesized from hypophosphorus acid and a copy of the status report for phosphorous is

[1]Hofgaard, IS. et al. (2010) The effect of potential resistance inducers on development of Microdochium majus and Fusarium culmorun in winter wheat, Eur. J. Plant Pathol. **128**:269-281.

appended. Monopotassium phosphite, however, is not derived directly from hypophosphorus acid and therefore cannot be considered a derivative of hypophosphorus acid nor included under item 22 of Part I to Schedule VI of the CDSA, under the heading “Hypophosphorous acid, its salts and derivatives”.

Recommendation: Monopotassium phosphite is not included under item 22 of Schedule VI to the CDSA and is not a controlled substance nor a precursor.

Date: 18 January 2011

Health Canada Santé Canada

STATUS DECISION OF CONTROLLED AND NON-CONTROLLED SUBSTANCE(S)

Substance: Phosphorous acid

Based on the current information available to the Office of Controlled Substances, it appears that the above substance is:

Controlled	X
Not Controlled	☐

under the schedules of the *Controlled Drugs and Substances Act* (CDSA) for the following reason(s):

- Phosphorous acid is a derivative of hypophosphorous acid and is therefore included in Part I of Schedule VI to the CDSA

Supporting document(s) attached:

Prepared by: _____ Date: _____
SHEREEN KHAN

Verified by: See email Date: _____
MICHAEL LEBELLE

Approved by: _____ Date: _____
DIRECTOR, OFFICE OF CONTROLLED SUBSTANCES

Drug Status Report

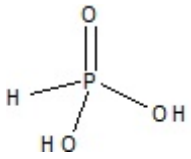
Drug: Phosphorous acid

Drug Name Status: Phosphorous acid is the common name.

Chemical Name: Phosphonic acid

Other Names: Orthophosphorous acid; dihydroxyphosphine oxide

Chemical structure:



Phosphorous acid

Molecular Formula: H_3PO_3

Pharmacological class / Application: reducing agent

International status:

US: It has been recognized that hypophosphorous and phosphorous acids may be used as reducing agents in the hydrogen iodide catalysed reductions[2]. However, it is unclear from the DEA website whether hypophosphorous and phosphorous acid are listed as precursor chemicals.

United Nations: Hypophosphorous and phosphorous acids are not included in the Red List - List of Precursors .... Under International Control.

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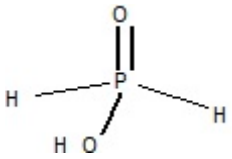
[2] SC. DiPari, JA. Bordelon, and HF. Skinner, Microgram Journal, Vol. 1 (2003).

Canadian Status: "Hypophosphorous acid, its salts and derivatives" was added[3] to Part I of Schedule VI to the CDSA. Its structure is shown on the next page.



Hypophosphorous acid

Hypophosphorous acid is more correctly known as phosphinic acid. The nomenclature of the phosphorus oxy acids has been somewhat confused due to the number of common names associated with the acids. The confusion has been compounded by the incorrect spelling of the element phosphorus as phosphorous.

Hypophosphorous acid is a strong reducing agent. This can be represented as follows:

$$H_3PO_2 + H_2O \quad \rightarrow \quad H_3PO_3 + 2H^+ + 2e^-$$

Phosphorous acid (H_3PO_3) is derived from hypophosphorous acid during this reaction.

Recommendation: Phosphorous acid is a derivative of hypophosphorous acid and is therefore included in Part I of Schedule VI to the CDSA.

March 15, 2006

[3] SOR/2005-364