



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

Substance: Aminopentamide, hydrogen sulfate

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

Controlled [checked]
Not Controlled [unchecked]

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

- Although the substance has not been reported to be a narcotic or display any abuse potential, the substance contains the root structure of the amidones.

Prepared by: Evelyn Soo Date: Dec 2nd 2010

Verified by: Marianne Tang Date:

Approved by: DIRECTOR, OFFICE OF CONTROLLED SUBSTANCES Date:

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

## Drug Status Report

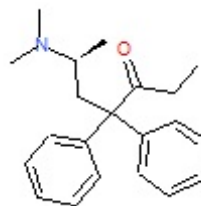
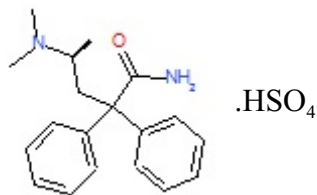
**Drug:** Aminopentamide, hydrogen sulfate

**Drug Name Status:** Aminopentamide, hydrogen sulfate is the common name.

**Chemical Name:** 4-Dimethylamino-2,2-diphenylvaleramide, hydrogen sulfate

**Other Names:** Centrine; DL-alpha, alpha-diphenyl-gamma-dimethylaminovaleramide; BL-139; alpha-phenyl, alpha-(2-(dimethylamino)propyl)-benzeneacetamide; dimevamide

**Chemical structure:**



*methadone*

**Molecular Formula:** C<sub>19</sub>H<sub>24</sub>N<sub>2</sub>O. HSO<sub>4</sub>

**CAS-RN:** 60-46-8; 35144-63-9

**Pharmacological class / Application:** Antispasmodic, antiemetic

**International status:**

US: Aminopentamide, hydrogen sulfate is not listed in the schedules to the CSA and is not mentioned anywhere on the DEA website.

United Nations: The substance is not listed 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: Aminopentamide, hydrogen sulfate, is a veterinarian drug used for the treatment of acute abdominal visceral spasm, pylorospasm or hypertrophic gastritis and associated nausea, vomiting and/or diarrhea<sup>1,2</sup>. The substance is not currently listed in the CDSA but it shares

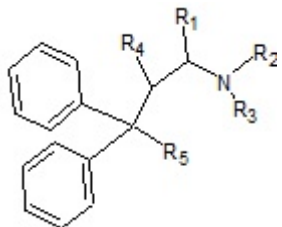
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<sup>1</sup>Hoekstra, JB. *et al.* (1954) The pharmacological activity of DL-alpha, alpha-diphenyl, gamma-dimethylaminovaleramide (centrine). *J. Pharmacol. Expt. Ther.* **110**:55-67.

<sup>2</sup><http://www.drugs.com/pro/centrine.html>

significant structural similarity to the amidones, which are currently listed under item 5 of Schedule I to the CDSA under the heading “Amidones, their intermediates, salts, derivatives and salts of intermediates and derivatives including”.

A review of the substances listed under item 5 of Schedule I reveal an amidone root structure shown below, where  $R_1$  and  $R_4$  may be H or  $\text{CH}_3$ ;  $R_2$  and  $R_3$  may be  $\text{CH}_3$  or a six membered ring;  $R_5$  may be an unsaturated carbon. The structure of methadone is shown above for comparison purposes.



Amidone root structure

In contrast to the amidones listed in the CDSA, there have been no reports in the scientific literature to suggest that aminopentamide, hydrogen sulfate is a narcotic or that it displays any abuse potential. While a previous review of 3-quinuclidinyl benzilate determined that the substance was structurally related to the amidones, 3-quinuclidinyl benzilate was not found to contain the essential structural elements of the amidones for it to be included under item 5 of Schedule I to the CDSA. In the case of aminopentamide, however, the substance clearly contains the root structure of the amidones described above and because there is no mention in the CDSA of any pharmacological criteria that must be met before a substance is included under item 5 of Schedule I to the CDSA, the substance is considered to be included under item 5 of Schedule I to the CDSA, purely on the basis that it contains the amidone root structure.

**Recommendation:** Aminopentamide and its hydrogen sulfate salt are included under item 5 of Schedule I to the CDSA and are controlled substances.

**Date:** 2 December 2010