Title: SYNTHESIS OF TRIETHYLENETETRAMINES

Abstract: Methods and intermediates for synthesizing triethylenetetramine and salts thereof, as well as novel triethylenetetramine salts and their crystal structure, and triethylenetetramine salts of high purity.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

Int. Cl.

- **C07C 209/62** (2006.01)
- **A61P 39/04** (2006.01)
- **C07C 211/13** (2006.01)
- **A61K 31/32** (2006.01)
- **C07C 5/00** (2006.01)
- **C07D 233/02** (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

**B. MINIMUM DOCUMENTATION SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<th>Category&lt;sup&gt;*&lt;/sup&gt;</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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**X** Further documents are listed in the continuation of Box C  

**X** See patent family annex

* Special categories of cited documents:
  **T** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  **X** document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  **Y** document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  **&** document member of the same patent family

Date of the actual completion of the international search  
09 February 2006

Date of mailing of the international search report  
15 FEB 2006

**Name and mailing address of the ISA/AU**

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IAN DOWD

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Form PCT/ISA/210 (second sheet) (April 2005)
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<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<td>File Registry, Registry Number 81904-67-8, Entered STN: 16 Nov 1984, 3-Imidazolidinediethanamine, 2-phenyl-N,N'-bis(phenylmethylene)-. See abstract</td>
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<td>STN File CA: Chemical abstracts accession number: 93:95005 &amp; PL 105793 (Witek, Edward) 31 October 1979. See abstract</td>
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Form PCT/ISA/210 (continuation of second sheet) (April 2005)
**INTERNATIONAL SEARCH REPORT**

**Box No. II** Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 57
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
   The breadth in scope of claim 57 is such that a meaningful search could not be undertaken.

3. ☐ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III** Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (3)) (April 2005)
This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

<table>
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<td>PL 105793</td>
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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX