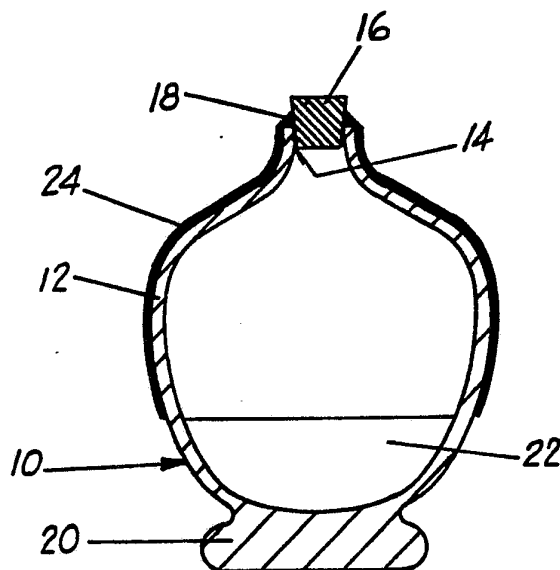




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/AU84/00087 (22) International Filing Date: 17 May 1984 (17.05.84) (31) Priority Application Numbers: PF 9400 PG 1121 (32) Priority Dates: 18 May 1983 (18.05.83) 30 August 1983 (30.08.83) (33) Priority Country: AU (71)(72) Applicants and Inventors: ALACS, Les [AU/AU]; 123 Lawrence Street, Bedford, W.A. 6052 (AU). SZABO, Zoltan [HU/AU]; NAGY, Zsuzsanna [HU/AU]; 7/32 York Street, North Perth, W.A. 6006 (AU). ALACS, Anna, Ildiko [AU/AU]; 123 Lawrence Street, Bedford, W.A. 6052 (AU). (74) Agent: LORD, Kelvin, Ernest; Suite 3, 703 Murray Street, West Perth, W.A. 6005 (AU).</p>		<p>(81) Designated States: AT, AT (European patent), AU, BE (European patent), DE, DE (European patent), DK, FI, FR (European patent), GB, GB (European patent), LU (European patent), NL, NL (European patent), NO, SE, SE (European patent). <b>Published</b> <i>With international search report.</i></p>

(54) Title: POROUS CLAY POTTERY CONTAINER WITH VOLATILE FLUID



## (57) Abstract

A hollow clay pottery container (10) having an opening (14) characterised in that the hollow clay pottery container (10) has an outer wall (12), contains a quantity of active fluid (22), the opening is sealed, the clay pottery of the container has been fired at a temperature below the vitrification point of the clay so that the clay pottery is permeable to vapour emitted from the active fluid (22) and the container (10) is arranged so that the vapour can permeate through the outer wall (12) thereof.

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1.

TITLE

POROUS CLAY POTTERY CONTAINER WITH VOLATILE FLUID

DESCRIPTION

The present invention relates to containers.

FIELD OF THE INVENTION

It is known to manufacture hollow containers of clay or  
5 similar material. In particular, hollow containers are  
often formed from stoneware clay or other clay, by  
hand.

The containers are normally small in size but they can  
be made to any desired size or shape.

10 The formed clay containers are dried in known manner  
using methods which are well known in the pottery art.  
Subsequently the dried articles are fired to turn them  
into articles of pottery.

15 SUMMARY OF THE INVENTION

The firing is, in accordance with the present invention,  
arranged so that the pottery has a required capillarity.  
If the pottery is fired at a temperature which is too  
high then it becomes impermeable to vapour. On the  
20 other than, if the pottery is fired at a temperature  
which is too low then it may be excessively porous.  
In accordance with one aspect of the present invention  
there is provided a hollow clay pottery container having  
an opening, wherein the hollow clay pottery container  
25 has an outer wall, contains a quantity of active fluid,  
the opening is sealed, the clay pottery of the container  
has been fired at a temperature below the vitrification



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point of the clay so that the clay pottery is permeable to vapour emitted from the active fluid and the container is arranged so that the vapour can permeate through the outer wall thereof.

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#### DESCRIPTION OF THE INVENTION

The active fluid used in the present invention is usually a liquid. Further, the active fluid can take many forms but it is particularly envisaged that it will be a  
10 fragrance or an insect repellent. In the case of a fragrance the active fluid may be an essential oil but it would be possible to use an artificial synthetic fragrance. Preferably, the fragrance is oil based but it could have an aqueous base and be thickened with a suitable material  
15 such as paraffin oil and talc powder. A wide range of clays can be used in the present invention. The vitrification point of clays varies considerably. For example, porcelain has a vitrification point of about 1260° - 1500°C, stoneware clay has a vitrification point  
20 of about 1350°C but this can be as low as 1100°C for some stoneware clays, while earthenware clay has a vitrification point which is usually around 950° - 1100°C depending on the type of clay.

The firing temperature needs to be below the vitrification  
25 point such as less than 100°C below this point preferably between 10 and 50°C below this point. If the firing temperature is too low, then the container is too porous and liquid can escape. Also, the preferred firing temperature varies with the viscosity of the active fluid.  
30 For example, a container containing lemon essential oil



## 3.

preferably has a firing temperature of 1280°C in a stoneware clay having a vitrification point of 1300°C, whereas in the same clay a rose essential oil containing container preferably has a firing temperature of 1260°C.

5 This is because the rose essential oil is more viscous than the lemon essential oil. The lower firing temperature leads to larger capillaries in the finished product.

In the firing step, it is essential that the container  
10 being fired reach the required temperature. It can be held at the temperature for as long as desired and this time is not critical. It can be, for example, up to five minutes or up to thirty minutes, or for any length of time which completes the desired processes.

15 The pottery container of the present invention contains capillaries through which vapour emitted from the active fluid can escape but not otherwise.

Thus, the rate of release of the vapour from the container is controlled by the degree of capillarity of the  
20 pottery.

Essentially, the container is liquid tight, although in hot weather the capillaries may open up a little and a small amount of liquid can seep out.

Whilst a wide range of different pottery clays can be  
25 used to manufacture the product of the present invention, it has been found that stoneware clay gives very satisfactory results.

The container may be glazed externally for visual appeal but it is essential to leave some of the pottery  
30 unglazed to avoid blocking all of the capillaries of the



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pottery. Typically, the underside of the container and/or part of the side thereof is left unglazed. Preferably, the outer wall has a thickness in the range from 3 to 30 mm, more preferably in the range from

5 5 to 15 mm.

The product of the present invention may be used for deodorising rooms where it contains a fragrance, or in cupboards to repel silverfish and other insects where it contains insect repellent. The container emits a vapour continuously over an extended period of time through the capillaries in the pottery.

The present invention will now be described, by way of example, with reference to the accompanying drawing which is a vertical sectional view of a hollow clay pottery container in accordance with the present invention.

In the drawing, there is shown a hollow clay pottery container 10 which is formed of stoneware clay and has an outer wall 12 and an opening 14. As shown, the opening 14 is closed by a plug 16 and a quantity of sealant 18 is applied around the opening 14 and the plug 16 to ensure that the opening 14 is sealed.

The outer wall 12 has a base portion 20 to enable the container to rest on a flat horizontal surface. Further, the stoneware clay of the outer wall 12 has been fired at a temperature less than 100°C below the vitrification point of the clay so that it is permeable to vapours emitted from a quantity of fragrant essential oil or other active fluid 22 in the container 10.

30 Further, a portion of the outer wall 12 may have a



5.

glazed layer 24 applied to it for decorative purposes. However, it is essential that a portion of the outer wall be unglazed to enable the vapour to permeate through the outer wall 12.

- 5 In the embodiment shown an upper portion of the wall 12 of the container 10 is glazed on its outer face while a lower portion and the base 20 is left unglazed. In use, it is found that a container 10, as shown in the drawing, with a wall thickness between 5 and 15 mm
- 10 can emit vapour from the active fluid for a period of several months. Subsequently, the container 10 can be used as a decorative ornament.
- 15 Modifications and variations such as would be apparent to a skilled addressee are deemed within the scope of the present invention.



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CLAIMS

1. A hollow clay pottery container having an opening, characterised in that the hollow clay pottery container has an outer wall, contains a quantity of active fluid, the opening is sealed, the clay pottery of the container  
5 has been fired at a temperature below the vitrification point of the clay so that the clay potter is permeable to vapour emitted from the active fluid and the container is arranged so that the vapour can permeate through the outer wall thereof.
- 10 2. A container according to claim 1 characterised in that the active fluid is a fragrance.
3. A container according to claim 1 or 2, characterised  
15 in that the active fluid is a liquid.
4. A container according to claim 3, characterised in that the active fluid is an essential oil.
- 20 5. A container according to any one of the preceding claims, characterised in that the clay pottery of the container has been fired at a temperature less than 100°C below the vitrification point of the clay.
- 25 6. A container according to claim 5, characterised in that the clay pottery of the container has been fired at a temperature between 10 and 50°C below the



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→  
vitrification point of the clay.

7. A container according to any one of the preceding  
claims, characterised in that it is formed of stoneware  
5 clay.

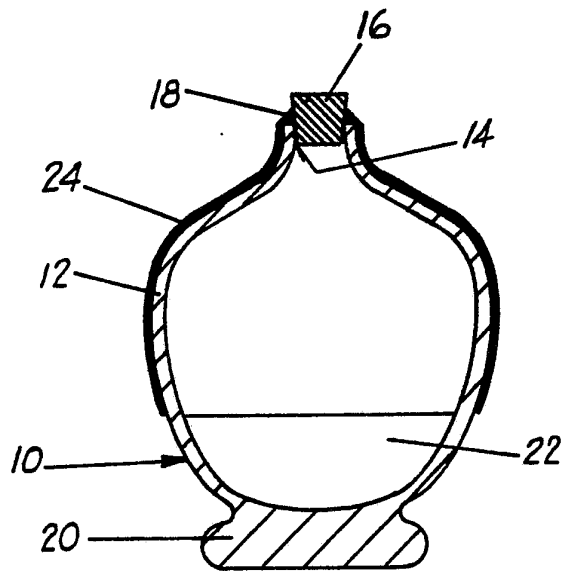
8. A container according to any one of the preceding  
claims, characterised in that the outer wall has a  
thickness in the range from 3 to 30 mm.

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9. A container according to claim 8, characterised in  
that the outer wall has a thickness in the range from  
5 to 15mm.



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# INTERNATIONAL SEARCH REPORT

International Application No **PCT/AU 84/00087**

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) <sup>3</sup>				
According to International Patent Classification (IPC) or to both National Classification and IPC				
Int. Cl. <sup>3</sup> A61L 9/04, 9/12				
<b>II. FIELDS SEARCHED</b>				
Minimum Documentation Searched <sup>4</sup>				
Classification System	Classification Symbols			
IPC US Cl.	A61L 9/04, 9/12, A45D 34/02 239/34			
Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched <sup>5</sup>				
AU: IPC AS ABOVE; AUSTRALIAN CLASSIFICATION 37.18				
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <sup>14</sup>				
Category <sup>6</sup>	Citation of Document, <sup>14</sup> with indication, where appropriate, of the relevant passages <sup>17</sup>	Relevant to Claim No. <sup>18</sup>		
P	AU, A, 19046/83 (de LAIRE, INC.) 15 March 1984 (15.03.84)	(1-9)		
A	AU, B, 57128/73 (480591) (S.C. JOHNSON & SON, INC.) 9 January 1975 (09.01.75)	(1-9)		
A	AU, A, 19485/76 (RECKITT AND COLMAN PRODUCTS LIMITED) 18 May 1978 (18.05.78)	(1-9)		
A	AU, B, 33327/71 (N.V. PHILIPS' GLOEILAMPENFABRIEKEN) 15 March 1973 (15.03.73)	(1-9)		
A	GB, A, 1570608 (DOULTON INDUSTRIAL PRODUCTS LIMITED) 2 July 1980 (02.07.80)	(1-9)		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; border: none;"> <p><sup>15</sup> Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width: 50%; vertical-align: top; border: none;"> <p>"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</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p> </td> </tr> </table>			<p><sup>15</sup> Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p>
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<b>IV. CERTIFICATION</b>				
Date of the Actual Completion of the International Search <sup>1</sup>	Date of Mailing of this International Search Report <sup>1</sup>			
22 August 1984 (22.08.84)	23 AUG 1984 (23.08.84)			
International Searching Authority <sup>1</sup>	Signature of Authorized Officer <sup>1</sup>			
AUSTRALIAN PATENT OFFICE	J.W. ASIMAN			

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON  
INTERNATIONAL APPLICATION NO. PCT/AU 84/00087

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.

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Patent Document  
Cited in Search  
Report

Patent Family Members

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AR 198419  
CA 992457  
FR 2191535  
GB 1404082  
IT 985766  
US 2790081

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AU 33327/71

BE 772536  
DE 2143454  
FR 2107689  
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END OF ANNEX