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• **Hong, Jing-Yuan**  
**407 Taichung City (TW)**

(72) Inventors:  
• **Hung, Fu-An**  
**407 Taichung City (TW)**  
• **Hung, Jing-Kai**  
**407 Taichung City (TW)**  
• **Hong, Jing-Yuan**  
**407 Taichung City (TW)**

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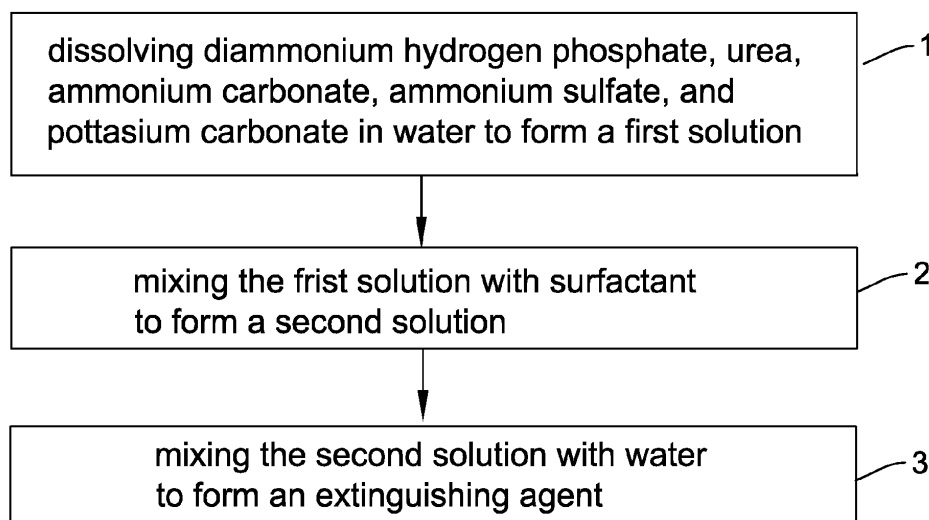
(71) Applicants:  
• **Hung, Fu-An**  
**407 Taichung City (TW)**  
• **Hung, Jing-Kai**  
**407 Taichung City (TW)**

(74) Representative: **Lang, Christian**  
**LangPatent Anwaltskanzlei IP Law Firm**  
**Ingolstädter Straße 5**  
**80807 München (DE)**

(54) **PROCESS OF PRODUCING EXTINGUISHING AGENT**

(57) A process of producing an extinguishing agent includes dissolving 5g to 90g of diammonium hydrogen phosphate, 0.1g to 60g of urea, 1g to 90g of ammonium carbonate, 5g to 90 of ammonium sulfate, and 20g to 250g of potassium carbonate in 400ml to 550ml of water at a temperature of 30°C to 90°C to form a first solution;

mixing the first solution with 5g to 500g of surfactant to undergo a first reaction for forming a second solution; and mixing the second solution with 1000ml of water to undergo a second reaction for forming an extinguishing agent.



**FIG.1**

## Description

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

**[0001]** The invention relates to extinguishing agent production and more particularly to a process of producing an extinguishing agent.

#### 2. Description of Related Art

**[0002]** Extinguishing agents have been made up of various compositions. For example, there is a conventional extinguishing agent comprising urea, sodium chloride, sodium carbonic anhydride, and ammonium sulfate.

**[0003]** There is a conventional process for producing an extinguishing agent comprising the steps of dissolving sodium chloride, ammonium dihydrogenphosphate, and ammonium hydrogen carbonate in hot water at a temperature of 30°C to 40°C to form a solution; allowing the ammonium dihydrogenphosphate and the ammonium hydrogen carbonate, as dissolved, to undergo a reaction; and adding water to raise the temperature of the solution from 60°C to 70°C.

**[0004]** Notwithstanding the conventional art, the invention is neither taught nor rendered obvious thereby.

### SUMMARY OF THE INVENTION

**[0005]** It is therefore one object of the invention to provide a process of producing an extinguishing agent comprising dissolving 5g to 90g of diammonium hydrogen phosphate, 0.1g to 60g of urea, 1g to 90g of ammonium carbonate, 5g to 90 of ammonium sulfate, and 20g to 250g of potassium carbonate in 400ml to 550ml of water at a temperature of 30°C to 90°C to form a first solution; mixing the first solution with 5g to 500g of surfactant to undergo a first reaction for forming a second solution; and mixing the second solution with 1000ml of water to undergo a second reaction for forming an extinguishing agent.

**[0006]** The above and other objects, features and advantages of the invention will become apparent from the following detailed description taken with the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0007]** FIG. 1 is a flow chart of a process of producing an extinguishing agent according to the invention.

### DETAILED DESCRIPTION OF THE INVENTION

**[0008]** Referring to FIG. 1, a process of producing an extinguishing agent in accordance with the invention is illustrated. The process comprises step 1 of dissolving 5 g to 90 g of diammonium hydrogen phosphate, 0.1 g to

60 g of urea, 1 g to 90 g of ammonium carbonate, 5 g to 90 g of ammonium sulfate, and 20 g to 250 g of potassium carbonate in 400ml to 550ml of water at a temperature of 30°C to 90°C to form a first solution; step 2 of mixing the first solution with 5 g to 500 g of surfactant to undergo a reaction for forming a second solution; and step 3 of mixing the second solution with 1000 ml of water to undergo a second reaction for forming an extinguishing agent.

**[0009]** Preferably, the surfactant is selected from the group consisting of 5 g to 500 g of protein being water dissolved, carbon-based surfactant, hydrocarbon-based surfactant, ester polyether surfactant, linear alkaloid sulfate ester salt surfactant, and alkaloid surfactant.

**[0010]** The extinguishing agent is further subjected to an environment at a temperature of 20°C to form a second extinguishing agent having a specific gravity of 1.0 to 1.2 and a pH value of 6.5 to 9.

**[0011]** While the invention has been described in terms of preferred embodiments, those skilled in the art will recognize that the invention can be practiced with modifications within the spirit and scope of the appended claims.

### Claims

1. A process of producing an extinguishing agent, comprising the steps of:

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(a) dissolving 5 g to 90 g of diammonium hydrogen phosphate, 0.1 g to 60 g of urea, 1 g to 90 g of ammonium carbonate, 5 g to 90 g of ammonium sulfate, and 20 g to 250 g of potassium carbonate in 400 ml to 550 ml of water at a temperature of 30°C to 90°C to form a first solution; (b) mixing the first solution with 5 g to 500 g of surfactant to undergo a first reaction for forming a second solution; and (c) mixing the second solution with 1000 ml of water to undergo a second reaction for forming an extinguishing agent.

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2. The process of claim 1, wherein the surfactant is selected from the group consisting of 5 g to 500 g of protein being water dissolved, carbon-based surfactant, hydrocarbon-based surfactant, ester polyether surfactant, linear alkaloid sulfate ester salt surfactant, and alkaloid surfactant.

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3. The process of claim 1, wherein the extinguishing agent is further subjected to an environment at a temperature of 20°C to form a second extinguishing agent having a specific gravity of 1.0 to 1.2 and a pH value of 6.5 to 9.

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4. The process of claim 2, wherein the extinguishing agent is further subjected to an environment at a

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temperature of 20°C to form a second extinguishing agent having a specific gravity of 1.0 to 1.2 and a pH value of 6.5 to 9.

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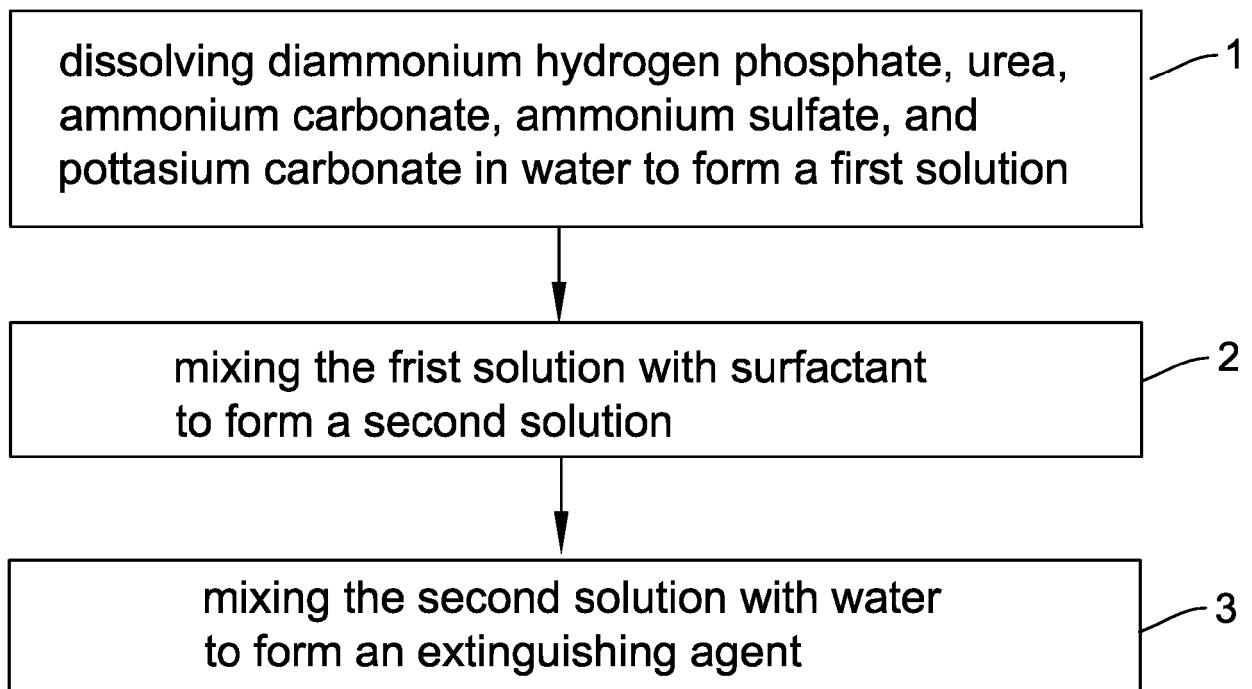


FIG.1



## EUROPEAN SEARCH REPORT

Application Number

EP 21 19 0907

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                    |                                                            |                                         |
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| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                      | Relevant to claim                                          | CLASSIFICATION OF THE APPLICATION (IPC) |
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| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                    |                                                            |                                         |
| Place of search<br><b>The Hague</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                    | Date of completion of the search<br><b>14 January 2022</b> | Examiner<br><b>Gault, Nathalie</b>      |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                                                                                                                    |                                                            |                                         |

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 21 19 0907

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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