previous inventions, including U.S. Pub. No. 2005/0163651 to Vellutato, and U.S. Patent No. 7,066,354 to Stank.

SUMMARY OF THE INVENTION

[0007] Embodiments of the invention seek to provide a mixing and dispensing apparatus. Embodiments of the invention also seek to provide a mixing and dispensing apparatus which is easy to use in a clean room by a user that is fully gowned and gloved. Embodiments of the invention further seek to provide a mixing and dispensing apparatus which is suitable for use in a clean room.

[0007a] According to a first aspect of the present invention, there is provided a mixing and dispensing apparatus, comprising a first container and a second container, wherein:

the first container includes:

a main body portion configured to receive a first substance;

a compartment configured to receive the second container and including an opening, wherein the opening includes a first portion and a second portion; and

an angled neck extending between the main body portion and the opening of the compartment; and

the second container is configured to receive a second substance different than the first substance, and wherein the second container includes:

a spout configured to be inserted into the opening of the compartment, wherein the first portion of the opening is wider than a mouth of the spout and the second portion of the opening is narrower than the mouth of the spout; and,

a plunger configured to open the spout to release the second substance into the angled neck of the first container.

[0007b] According to a second aspect of the present invention, there is provided a mixing and dispensing apparatus, comprising a first container and a second container wherein:

the first container includes:

a main body portion retaining a first substance;

a compartment enclosing the second container and including an opening, wherein the opening includes a first portion and a second portion; and

an angled neck extending between the main body portion and the compartment; and

the second container retains a second substance different than the first substance and includes:

a sealed spout inserted into the opening, wherein the first portion of the opening is wider than a mouth of the spout and the second portion of the opening is narrower than the mouth of the spout;

a plunger configured to release the second substance into the first container through the spout.

[0007c] According to a third aspect of the present invention, there is provided a method of mixing and dispensing a composition within a cleanroom, comprising the steps of:

providing an apparatus including:

a first container having a main body portion and a compartment,

a second container in the compartment of the first container and having a closed spout extending through a passageway in the compartment wherein the passageway includes a first portion wider than a mouth of the spout and a second portion narrower than the mouth of the spout,

an angled neck extending between the main body portion and the compartment, wherein the closed spout is in fluid communication with the angled neck, and

a plunger;

filling the main body portion of the first container with a first liquid;

filling the main body portion of the second container with a second liquid;

placing the plunger in the second container and aligning the plunger with the closed spout;

applying downward pressure to the plunger, such that the plunger opens the closed spout to release the second liquid into the main body portion of the first container through the angled neck, whereby the first and second liquids mix to form a composition.

[0008] A mixing and dispensing apparatus having first and second containers. The first container has a main body portion which retains a first substance. A separate compartment is located in the first container and an internal passageway is formed between the main body portion and the compartment. The second container is configured to retain a second substance, and is compressible. The second container has a top end and a closed spout, wherein the closed spout is located in the compartment with the spout extending through the internal passageway into the main body portion of said first container. A release mechanism is formed by a plunger extending within the second container. The plunger has a first end in communication with the top end of the second container, and a second end aligned with the closed spout. The second end opens the closed spout when the second container is compressed to release the second substance into the main body portion of the first container.

[0009] These and other objects of the invention, as well as many of the intended advantages thereof, will become more readily apparent when reference is made to the following description, taken in conjunction with the accompanying drawings.

CLAIMS

1. A mixing and dispensing apparatus, comprising a first container and a second container, wherein:

the first container includes:

a main body portion configured to receive a first substance;

a compartment configured to receive the second container and including an opening, wherein the opening includes a first portion and a second portion; and

an angled neck extending between the main body portion and the opening of the compartment; and

the second container is configured to receive a second substance different than the first substance, and wherein the second container includes:

a spout configured to be inserted into the opening of the compartment, wherein the first portion of the opening is wider than a mouth of the spout and the second portion of the opening is narrower than the mouth of the spout; and,

a plunger configured to open the spout to release the second substance into the angled neck of the first container.

2. A mixing and dispensing apparatus according to claim 1, wherein the second container is compressible.

3. A mixing and dispensing apparatus according to claim 1, wherein the angled neck extends from a longitudinal side of the main body portion of the first container.

4. A mixing and dispensing apparatus according to claim 1, wherein the first substance is sterile water and the second substance is a concentrated cleaner.

5. A mixing and dispensing apparatus according to claim 1, wherein the first container includes a dispensing mechanism, the dispensing mechanism includes a tube extending into the first container.

6. A mixing and dispensing apparatus according to claim 5, wherein the compartment of the first container is oriented substantially parallel to the tube in the first container.

7. A mixing and dispensing apparatus according to claim 1, wherein the compartment is spaced from the main body portion.

8. A mixing and dispensing apparatus according to claim 7, wherein a web extends between the compartment and the main body portion of the first container.

9. A mixing and dispensing apparatus according to claim 1, wherein the compartment includes a flexible barrier configured to exert pressure on the second container to maintain the spout in the second portion of the opening.

10. A mixing and dispensing apparatus, comprising a first container and a second container wherein:

the first container includes:

a main body portion retaining a first substance;

a compartment enclosing the second container and including an opening, wherein the opening includes a first portion and a second portion; and

an angled neck extending between the main body portion and the compartment; and

the second container retains a second substance different than the first substance and includes:

a sealed spout inserted into the opening, wherein the first portion of the opening is wider than a mouth of the spout and the second portion of the opening is narrower than the mouth of the spout;

a plunger configured to release the second substance into the first container through the spout.

11. A method of mixing and dispensing a composition within a cleanroom, comprising the steps of:

providing an apparatus including:

a first container having a main body portion and a compartment,

a second container in the compartment of the first container and having a closed spout extending through a passageway in the compartment, wherein the passageway includes a first portion wider than a mouth of the spout and a second portion narrower than the mouth of the spout,

an angled neck extending between the main body portion and the compartment, wherein the closed spout is in fluid communication with the angled neck, and

a plunger;

filling the main body portion of the first container with a first liquid;

filling the main body portion of the second container with a second liquid;

placing the plunger in the second container and aligning the plunger with the closed spout;

applying downward pressure to the plunger, such that the plunger opens the closed spout to release the second liquid into the main body portion of the first container through the angled neck, whereby the first and second liquids mix to form a composition.

12. The method of claim 11, wherein the first liquid is different than the second liquid.

13. The method of claim 12, wherein the first liquid is sterile water and the second liquid is a concentrated cleaner.

14. The method of claim 11, wherein the second container includes a compressible member upon which the downward pressure is applied.

15. The method of claim 11, further comprising the step of actuating a dispensing mechanism of the first container, such that the composition is expelled from the first container through the dispensing mechanism into the cleanroom.

16. The method of claim 15, wherein the dispensing mechanism is a spray head that has a trigger and an adjustable nozzle through which the composition is expelled.

17. The method of claim 16, wherein the apparatus further comprises a dip tube extending from the dispensing mechanism into the main body portion of the first container, such that the composition is drawn into the dip tube when the dispensing mechanism is actuated.