pumping system is adapted to perform the at least three modes of operation and dispense the mixed substance to the feeding tube.

[0008] An example includes a device and method for sterilizing, including the steps of: providing a first container with a first substance; providing a second container with a second substance; connecting the first container to the second container with at least one tube; enclosing the first and second containers and the at least one tube in at least one bag; closing the at least one bag to form a container enclosure; and sterilizing the container enclosure.

[0008A] According to various embodiments, a mixing and dispensing apparatus may be provided. The mixing and dispensing apparatus may include: a first container for containing a first substance; a second container for containing a second substance; a tube system that, when engaged with a pump, combines the first and second substances into one combined substance, mixes the combined substance, and dispenses the combined substance; a fluid-impermeable enclosure enclosing the first container, the second container, and the tube system, wherein the first container, the second container, and the tube system are configured such that they may be enclosed in the fluid-impermeable enclosure without the pump.

[0008B] According to various embodiments, a method may be provided. The method may include: filling a first container with a first substance; filling a second container with a second substance; providing a tube system that, when engaged with a pump, combines the first and second substances into one combined substance, mixes the combined substance, and dispenses the combined substance; enclosing the first container, the second container, and the tube system in a fluid-impermeable enclosure without the pump.

CLAIMS

1. A mixing and dispensing apparatus, comprising:

a first container for containing a first substance;

a second container for containing a second substance;

a tube system that, when engaged with a pump, combines the first and second substances into one combined substance, mixes the combined substance, and dispenses the combined substance;

a fluid-impermeable enclosure enclosing the first container, the second container, and the tube system,

wherein the first container, the second container, and the tube system are configured such that they may be enclosed in the fluid-impermeable enclosure without the pump.

2. The apparatus of claim 1, wherein the tube system comprises a tube section configured to engage with the pump such that the tube system and the pump combines the first and second substance without opening the tube system.

3. The apparatus of claim 1, wherein the pump is a peristaltic pump.

4. The apparatus of claim 1, wherein the tube system is configured to combine only the first substance, the second substance, and air.

5. The apparatus of claim 1, wherein the second container comprises:

a top including an input neck and an output neck, each of which is sealed by a sealing device;

an input pipe disposed inside the second container and attached to the sealing device at the input neck; and

an output pipe disposed inside the second container and attached to the sealing device at the output neck.

6. The apparatus of claim 5, wherein the input pipe is approximately half the height of the second container.

7. The apparatus of claim 5, wherein the output pipe extends almost to a bottom of the second container.

8. The apparatus of claim 5, further comprising:

a feeding tube, connected to the tube system, configured to receive the combined substance.

9. The apparatus of claim 8, wherein:

the tube system comprises:

a main tube;

a first valve connected between the first container and one end of the main tube;

a second valve connected between the main tube and the feeding tube; and

a third valve connected between the main tube and the input neck, and

the main tube comprises:

a first tube section connecting the first valve and a first Y-connector;

a second tube section connecting the output neck and the first Y-connector;

a third tube section connecting the first Y-connector to a second Y-connector;

a fourth tube section connecting the second Y-connector to the third valve;

a fifth tube section connecting the second Y-connector to the second valve; and

a sixth tube section connecting the third valve to the input neck.

10. The apparatus of claim 9, wherein a pump is configured to be removably connected to the main tube and the main tube is configured to provide a fluid impermeable path from the first Y-connector to the second Y-connector regardless of whether the pump is connected to the main tube.

11. The apparatus of claim 9, wherein:

during a combining of the first substance and the second substance, the first and third valves are configured to be opened and the second valve is configured to be closed;

during a mixing of the combined substance, the first and second valves are configured to be closed and the third and fourth valves are configured to be opened; and

during a dispensing of the combined substance, the first and third valves are configured to be closed and the second and fourth valves are configured to be opened.

12. The apparatus of claim 9, wherein the first and second Y-connectors are one-way connectors.

13. The apparatus of claim 9, wherein the main tube and the feeding tube are flexible.

14. The apparatus of claim 9, wherein the main tube and the feeding tube are hard pipes.

15. The apparatus of claim 9, further comprising an exhaust pipe attached to the output neck, the exhaust pipe including an seventh tube section connected between the output neck and

a fourth valve, and an eighth tube section connected between the fourth valve and an exhaust cap,

wherein the exhaust cap includes a first filter.

16. The apparatus of claim 9, further comprising a tube connected to the output neck and disposed inside the second container, the tube comprising a filter.

17. The apparatus of claim 1, wherein the first container includes a body and at least one of a neck and a nozzle.

18. The apparatus of claim 1, wherein the second container comprises an outer layer, an inner drum, and a space of insulation therebetween.

19. The apparatus of claim 1, wherein the second container is a 200-liter container and the first container is smaller than the second container.

20. The apparatus of claim 1, further comprising:

the first substance; and

the second substance,

wherein first substance comprises an active disinfectant and the second substance comprises a diluting solution.

21. A method, comprising:

filling a first container with a first substance;

filling a second container with a second substance;

providing a tube system that, when engaged with a pump, combines the first and second substances into one combined substance, mixes the combined substance, and dispenses the combined substance;

enclosing the first container, the second container, and the tube system in a fluid-impermeable enclosure without the pump.

22. The method of claim 21, wherein the tube system comprises a tube section configured to engage with the pump such that the tube system and the pump combines the first and second substance without opening the tube system.

23. The method of claim 21, wherein the pump is a peristaltic pump.

24. The method of claim 21, wherein the tube system is configured to combine only the first substance, the second substance, and air.

25. The method of claim 21, wherein the second container comprises:

a top including an input neck and an output neck, each of which is sealed by a sealing device;

an input pipe disposed inside the second container and attached to the sealing device at the input neck; and

an output pipe disposed inside the second container and attached to the sealing device at the output neck.

26. The method of claim 25, wherein the input pipe is approximately half the height of the second container.

27. The method of claim 25, wherein the output pipe extends almost to a bottom of the second container.

28. The method of claim 25, further comprising:

providing a feeding tube, connected to the tube system, configured to receive the combined substance.

29. The method of claim 28, wherein:

the tube system comprises:

a main tube;

a first valve connected between the first container and one end of the main tube;

a second valve connected between the main tube and the feeding tube; and

a third valve connected between the main tube and the input neck, and

the main tube comprises:

a first tube section connecting the first valve and a first Y-connector;

a second tube section connecting the output neck and the first Y-connector;

a third tube section connecting the first Y-connector to a second Y-connector;

a fourth tube section connecting the second Y-connector to the third valve;

a fifth tube section connecting the second Y-connector to the second valve; and

a sixth tube section connecting the third valve to the input neck.

30. The method of claim 29, wherein a pump is configured to be removably connected to the main tube and the main tube is configured to provide a fluid impermeable path from the first

Y-connector to the second Y-connector regardless of whether the pump is connected to the main tube.

31. The method of claim 30, wherein:

during a combining of the first substance and the second substance, the first and third valves are configured to be opened and the second valve is configured to be closed;

during a mixing of the combined substance, the first and second valves are configured to be closed and the third and fourth valves are configured to be opened; and

during a dispensing of the combined substance, the first and third valves are configured to be closed and the second and fourth valves are configured to be opened.

32. The method of claim 29, wherein the first and second Y-connectors are one-way connectors.

33. The method of claim 29, wherein the main tube and the feeding tube are flexible.

34. The method of claim 29, wherein the main tube and the feeding tube are hard pipes.

35. The method of claim 29, further comprising:

providing an exhaust pipe attached to the output neck, the exhaust pipe including an seventh tube section connected between the output neck and a fourth valve, and an eighth tube section connected between the fourth valve and an exhaust cap,

wherein the exhaust cap includes a first filter.

36. The method of claim 29, further comprising:

providing a tube connected to the output neck and disposed inside the second container, the tube comprising a filter.

37. The method of claim 31, wherein the first container includes a body and at least one of a neck and a nozzle.

38. The method of claim 31, wherein the second container comprises an outer layer, an inner drum, and a space of insulation therebetween.

39. The method of claim 31, wherein the second container is a 200-liter container and the first container is smaller than the second container.

40. The method of claim 31, wherein first substance comprises an active disinfectant and the second substance comprises a diluting solution.