

Claims:

1. An apparatus to make a peracetic acid high level disinfectant solution comprising:
 - a) a solid dispensing system comprising a bulk dispenser for a solid mixture of TAED, a bulk dispenser for a solid mixture of sodium percarbonate, and a bulk dispenser for solid citric acid monohydrate,
 - b) a heated water delivery system,
 - c) a first reactor chamber to mix solid TAED and solid sodium percarbonate with heated water to provide a first peracetic acid solution,
 - d) a first conduit to deliver heated water from the heated water system to the first reactor chamber,
 - e) a second reactor chamber to mix the first peracetic acid solution with solid citric acid monohydrate to provide a pH controlled peracetic acid solution,
 - f) a second conduit to deliver the peracetic acid solution from the first reactor chamber to the second reactor chamber,
 - g) a storage reservoir to dilute the pH controlled peracetic acid solution with water to provide the peracetic acid high level disinfectant solution,
 - h) a third conduit to deliver the pH controlled peracetic acid from the second reactor chamber to the reservoir, and
 - i) a fourth conduit to deliver water to the storage reservoir.
2. The apparatus of claim 1 wherein the heated water delivery system comprises a pump to deliver heated water to the first reactor chamber.
3. The apparatus of claim 1 wherein the heated water delivery system delivers water to the first reactor chamber at a temperature of about 40° C.
4. The apparatus of claim 1 wherein the first reactor chamber comprises a rotary mixing blade.
5. The apparatus of claim 1 wherein the first reactor chamber mixes the water, the solid TAED and the solid sodium percarbonate for about 1 minute.
6. The apparatus of claim 1 wherein the second conduit to deliver peracetic acid solution to the second reactor chamber includes a first filter to prevent transfer of undissolved solids.

7. The apparatus of claim 1 wherein the third conduit to deliver pH controlled peracetic acid to the storage reservoir includes a second filter to prevent transfer of undissolved solids.

8. The apparatus of claim 1 wherein the water to dilute the pH controlled peracetic acid is delivered to the storage reservoir at a temperature in the range of about 18 to about 40° C.

9. The apparatus of claim 1 wherein the peracetic acid high level disinfectant solution is at a temperature greater than about 25° C., has a pH in the range of between about 5 and about 7, a peracetic acid concentration of about 1200-2200 ppm, and a hydrogen peroxide concentration of less than about 300 ppm.

10. A method of making a peracetic acid high level disinfectant solution comprising the steps of:

- a) dispensing a solid TAED from a first bulk container into a first reactor chamber,
- b) dispensing a solid sodium percarbonate from a second bulk container into the first reactor chamber,
- c) adding heated water to the first reactor chamber,
- d) mixing the heated water, TAED and sodium percarbonate to form a peracetic acid solution,
- e) dispensing solid citric acid monohydrate from a third bulk container into a second reactor chamber,
- f) adding the peracetic acid solution to the second reactor chamber to provide a pH controlled peracetic acid solution,
- g) adding the pH controlled solution to a storage reservoir, and
- h) diluting the pH controlled peracetic acid solution with water to provide the peracetic acid high level disinfectant solution.

11. The method of claim 10 wherein the heated water is pumped into the first reactor chamber.

12. The method of claim 10 wherein the heated water is at a temperature of about 40° C.

13. The method of claim 10 wherein the heated water, solid TAED and solid sodium percarbonate are mixed in the first reactor chamber by a rotary mixing blade.

14. The method of claim 10 wherein the heated water, solid TAED and solid sodium percarbonate are mixed in the first reactor chamber for about 1 minute.
15. The method of claim 10 wherein the peracetic acid solution is pumped into the second reactor chamber.
16. The method of claim 10 wherein the peracetic acid solution is filtered to prevent transfer of undissolved solids into the second reactor chamber.
17. The method of claim 10 wherein the pH controlled peracetic acid is filtered to prevent transfer of undissolved solids into the storage reservoir.
18. The method of claim 10 wherein the water to dilute the pH controlled peracetic acid is at a temperature in the range of about 18 to about 40° C.
19. The method of claim 10 wherein the peracetic acid high level disinfectant solution is at a temperature of about 30° C., has a pH in the range of about 5 and about 7, a peracetic acid concentration of about 1200-2200 ppm, and a hydrogen peroxide concentration of less than about 300 ppm.