

WHAT IS CLAIMED:

1. A solution of L-cysteine comprising,
  - a pharmaceutically acceptable carrier,
  - about 50 mg/mL of L-cysteine hydrochloride monohydrate, or equivalent amount of a pharmaceutically acceptable L-cysteine or a salt or hydrate thereof,
  - less than about 150 ppb of aluminum for at least about 6 months from the time of manufacture of the solution, and
  - a pH from about 1.0 to about 2.5,wherein the solution is suitable for use as an additive in a parenteral nutrition composition for administration to an individual.
2. The solution of claim 1, wherein the solution is safe for use as an additive in a parenteral nutrition composition for administration to a neonate or infant requiring parenteral nutrition.
3. The solution of claim 1, which comprises less than about 100 ppb of aluminum for at least about 6 months from the time of manufacture of the solution.
4. The solution of claim 1, which comprises less than about 50 ppb of aluminum for at least about 6 months from the time of manufacture of the solution.
5. The solution of claim 1, which comprises less than about 20 ppb of aluminum for at least about 6 months from the time of manufacture of the solution.
6. The solution of claim 1, which comprises less than about 10 ppb of aluminum for at least about 6 months from the time of manufacture of the solution.

7. The solution of claim 1, which comprises less than about 150 ppb of aluminum for at least about 12 months from the time of manufacture of the solution.
8. The solution of claim 7, further comprising a pharmaceutically acceptable amount of cystine for at least about 12 months from the time of manufacture of the solution.
9. The solution of claim 8, wherein the solution is stored in a silica-coated vial.
10. The solution of claim 1, which comprises less than about 100 ppb of aluminum for at least about 12 months from the time of manufacture of the solution.
11. The solution of claim 10, further comprising a pharmaceutically acceptable amount of cystine for at least about 12 months from the time of manufacture of the solution.
12. The solution of claim 11, wherein the solution is stored in a silica-coated vial.
13. The solution of claim 1, which comprises less than about 50 ppb of aluminum for at least about 12 months from the time of manufacture of the solution.
14. The solution of claim 1, further comprising a pharmaceutically acceptable amount of cystine for at least about 6 months from the time of manufacture of the solution.
15. The solution of claim 14, which has a dissolved oxygen content of less than 2 ppm.
16. The solution of claim 14, wherein the solution is stored in a coated vial.

17. The solution of claim 16, wherein the vial is a silica-coated vial.
18. The solution of claim 16, wherein the vial has a headspace, wherein the headspace comprises nitrogen, argon, or other inert gas.
19. The solution of claim 1, wherein the pharmaceutically acceptable carrier is water.
20. A solution of L-cysteine, comprising,
  - about 50 mg/mL of L-cysteine hydrochloride monohydrate,
  - water,
  - a pH between about 1.0 and about 2.5, andwherein the solution is stored in a container that minimizes both oxygen penetration into the container and aluminum leaching into the solution, such that the solution comprises less than about 150 ppb of aluminum for at least about 6 months from the time of manufacture of the solution.
21. The solution of claim 20, wherein the solution is suitable to be admixed with a parenteral nutrition composition for administration to an individual.
22. The solution of claim 21, wherein said individual has liver disease.
23. The solution of claim 21, wherein said individual has impairment in the enzymatic conversion of cysteine.
24. The solution of claim 21, wherein said individual is a neonate or infant requiring parenteral nutrition.

25. The solution of claim 20, wherein the container is a coated vial.
26. The solution of claim 25, wherein the container is a silica-coated vial.
27. The solution of claim 20, further comprising a pharmaceutically acceptable amount of cystine for at least about 6 months from the time of manufacture of the solution.