CLAIMS

1. A method of reducing bioburden of a chromatography resin comprising:

exposing a container comprising a composition comprising (i) a chromatography resin and (ii) a liquid comprising 0.01% v/v to 10% v/v benzyl alcohol, 5 mM to 45 mM sodium ascorbate, 5 mM to 45 mM methionine, 5 mM to 45 mM mannitol, and 5 mM to 45 mM histidine, to a dose of gamma-irradiation sufficient to reduce the bioburden of the container and the chromatography resin, wherein the chromatography resin is an anion exchange chromatography resin, a cation exchange chromatography resin, or an affinity chromatography resin comprising a protein ligand.

2. The method of claim 1, wherein the container is a storage vessel.

3. The method of claim 1, wherein the container is a chromatography column.

4. The method of claim 1, wherein the container is a packed chromatography column.

5. The method of claim 1, wherein the composition is a slurry of sedimented chromatography resin.

6. The method of claim 1, wherein the liquid comprises:

(iii) 10 mM to 40 mM sodium ascorbate, 10 mM to 40 mM methionine, 10 mM to 40 mM mannitol, and 10 mM to 40 mM histidine.

7. The method of claim 6, wherein the liquid comprises 15 mM to 35 mM sodium ascorbate, 15 mM to 35 mM methionine, 15 mM to 35 mM mannitol, and 15 to 35 mM histidine.

8. The method of claim 7, wherein the liquid comprises 20 mM to 30 mM sodium ascorbate, 20 mM to 30 mM methionine, 20 mM to 30 mM mannitol, and 20 mM to 30 mM histidine.

9. The method of claim 1, wherein the chromatography resin is an affinity chromatography resin comprising a protein ligand.

10. The method of claim 9, wherein the protein ligand is protein A.

11. The method of claim 1, wherein the chromatography resin is an anion exchange chromatography resin.

12. The method of claim 11, wherein the anion exchange chromatography resin comprises N-benzyl-N-methyl-ethanolamine groups.

13. The method of claim 1, wherein the dose of gamma-irradiation is between 15 kGy and 45 kGy.

14. The method of claim 1, further comprising:

packing the chromatography resin into a reduced bioburden column in an aseptic environment.

15. A composition comprising (i) a chromatography resin and (ii) a liquid comprising 0.01% v/v to 10% v/v benzyl alcohol, 5 mM to 45 mM sodium ascorbate, 5 mM to 45 mM methionine, 5 mM to 45 mM mannitol, and 5 mM to 45 mM histidine, wherein the chromatography resin is an anion exchange chromatography resin, a cation exchange chromatography resin, or an affinity chromatography resin comprising a protein ligand.

16. The composition of claim 15, wherein the liquid comprises 10 mM to 40 mM sodium ascorbate, 10 mM to 40 mM methionine, 10 mM to 40 mM mannitol, and 10 mM to 40 mM histidine.

17. The composition of claim 16, wherein the liquid comprises 15 mM to 35 mM sodium ascorbate, 15 mM to 35 mM methionine, 15 mM to 35 mM mannitol, and 15 to 35 mM histidine.

18. The composition of claim 17, wherein the liquid comprises 20 mM to 30 mM sodium ascorbate, 20 mM to 30 mM methionine, 20 mM to 30 mM mannitol, and 20 mM to 30 mM histidine.

19. The composition of claim 15, wherein the chromatography resin is an affinity chromatography resin comprising a protein ligand.

20. The composition of claim 19, wherein the protein ligand is protein A.

21. The composition of claim 15, wherein the chromatography resin is an anion exchange chromatography resin.

22. The composition of claim 21, wherein the anion exchange chromatography resin comprises N-benzyl-N-methyl-ethanolamine groups.