Claims

1. A composition comprising an azeotropic or azeotropic-like composition consisting essentially of perfluoroheptene and a chlorotrifluoropropene.

2. The composition according to claim 1 wherein the perfluoroheptene is at least one isomer selected from 1,1,1,2,2,3,4,5,5,6,6,7,7,7-tetradecafluoro-3-heptene, 1,1,1,2,3,4,4,5,5,6,6,7,7,7-tetradecafluoro-2-heptene, and isomers thereof.

3. The composition according to claim 1 or claim 2, wherein the chlorotrifluoropropene is at least one isomer selected from 1-chloro-2,3,3-trifluoropropene, 1-chloro-3,3,3-trifluoro-1-propene, and isomers thereof.

4. The composition according to claim 3, comprising:
10.0 to 75.0 weight % of perfluoroheptene; and
25.0 to 90.0 weight % of 1-chloro-2,3,3-trifluoro-1-propene.

5. The composition according to claim 4, comprising:
20.0 to 75.0 weight % of perfluoroheptene; and
25.0 to 80.0 weight % of 1-chloro-2,3,3-trifluoro-1-propene.

6. The composition according to claim 4, comprising:
45.0 to 55.0 weight % of perfluoroheptene; and
45.0 to 55.0 weight % of 1-chloro-2,3,3-trifluoro-1-propene.

7. The composition according to claim 3, comprising:
5.0 to 30.0 weight % of perfluoroheptene; and
70.0 to 95.0 weight % of 1-chloro-3,3,3-trifluoro-1-propene.

8. The composition according to claim 7, comprising:
10.0 to 20.0 weight % of perfluoroheptene; and
80.0 to 90.0 weight % of 1-chloro-3,3,3-trifluoro-1-propene.

9. A method of removing residue from a surface comprising contacting the surface with a composition comprising an azeotropic or azeotropic-like composition consisting essentially of perfluoroheptene and a chlorotrifluoropropene, and recovering the surface from the composition.

10. A method of claim 9, wherein said contacting is accomplished by vapor degreasing.

11. The method of claim 9 or claim 10, wherein said composition further comprises a propellant.

12. The method of claim 11, wherein said propellant is selected from the group consisting of air, nitrogen, carbon dioxide, difluoromethane (CF_2H_2, HFC-32), trifluoromethane (CF_3H, HFC-23), difluoroethane (CHF_2CH_3, HFC-152a), trifluoroethane (CH_3CF_3, HFC-143a; or CHF_2CH_2F, HFC-143), tetrafluoroethane (CF_3CH_2F, HFC-134a; or CF_2HCF_2H, HFC-134), pentafluoroethane (CF_3CF_2H, HFC-125), 1,3,3,3-tetrafluoro-1-propene (HFO-1234ze), 2,3,3,3-tetrafluoro-1-propene (HFO-1234yf), 1,2,3,3,3-pentafluoropropene (HFO-1225ye), 1,1,3,3,3-pentafluoropropene (HFO-1225ze), hydrocarbons, and dimethyl ether.

13. The method of any one of claims 9 to 12, wherein said composition further comprises at least one surfactant.

14. A method for depositing a fluorolubricant on a surface comprising:

a. combining a fluorolubricant and a solvent, said solvent comprising an azeotropic or azeotropic-like composition consisting essentially of perfluoroheptene and a chlorotrifluoropropene,
b. contacting the combination of lubricant-solvent with the surface, and
c. evaporating the solvent from the surface to form a fluorolubricant coating on the surface.

15. The method of claim 14, wherein the surface is that of a semiconductor material, metal, metal oxide, vapor deposited carbon, or glass.

16. The method of claim 15, wherein the surface is that of a magnetic medium.