CLAIMS

What is claimed is:

1. A composition comprising HFO-1234yf and at least one residual refrigerant selected from at least one of the following groups:

   (i) one or more of HFC-134a, CFC-12 and combinations thereof;

   (ii) one or more of E-HFO-1234ze, HFC-134a, HFC-227ea and combinations thereof;

   (iii) one or more of CFC-12, HFC-32, HFC-134a, HFC-227ea, Z-HCFO-1224yd, E-HFO-1234ze, E-HFO-1336mzz and combinations thereof;

   (iv) one or more of HCFC-22, HFC-32, HFC-115, HFC-125, HFC-134a, HFC-143a, E-HFO-1234ze, CO_2 and combinations thereof;

   (v) one or more of HCFC-22, HFC-32, HFC-125, HFC-134a, HFC-143a, E-HFO-1234ze and combinations thereof;

   (vi) one or more of CFC-12, HCFC-22, HFC-32, HFC-115, HFC-125, HFC-134a, HFC-143a, HFC-152a, HFC-227ea, E-HFO-1132, Z-HFO-1132, Z-HCFO-1224yd, E-HFO-1234ze, HFO-1252zc, E-HFO-1336mzz, CO_2 and combinations thereof; or

   (vii) combinations of any of groups (i), (ii), (iii), (iv), (v) and/or (vi).

2. The composition of claim 1, wherein:

   a first refrigerant portion comprises the HFO-1234yf and at least one additional compound selected from the group consisting of HFO-1225ye, HFO-1243zf, E-HFO-1234ze, HFC-236ea, HCFC-244bb, HFC-245fa, HFC-245eb, HFC-245cb, 3,3,3-trifluoropropyne, HFC-152a, FO-1114, HFO-1123, HCFO-1131a, trans-HCFO-1131, HCO- 1140, CFO-1214ya, FO-1216, HCFO-1224yd, HFO-1252 isomers, HFC-143a, HCFC-225, HFC-254eb, HFC-263fb, HFC- 236fa, HCFC-142b, HCFC-244cc, HCFO-1223, HFO-1132a, HCC-40 and combinations thereof; and

   a second refrigerant portion comprises the at least one residual refrigerant.

3. A composition comprising E-HFO-1234ze and at least one residual refrigerant selected from at least one of the following groups:

   (i) one or more of HFC-134a, HFC-227ea and combinations thereof;

(ii) one or more of CFC-12, HFC-32, HFC-134a, HFC-227ea, Z-HCFO-1224yd, HFO-1234yf, Z-HFO-1234ze, E-HFO-1336mzz and combinations thereof;

(iii) one or more of HCFC-22, HFC-32, HFC-115, HFC-125, HFC-134a, HFC-143a, HFO-1234yf, HFC-152a, CO_2 and combinations thereof;

(iv) one or more of HCFC-22, HFC-32, HFC-125, HFC-134a, HFC-143a, HFO-1234yf and combinations thereof;

(v) one or more of CFC-12, HCFC-22, HFC-32, HFC-115, HFC-125, HFC-134a, HFC-143a, HFC-152a, HFC-227ea, E-HFO-1132, Z-HFO-1132, Z-HCFO-1224yd, HFO-1234yf, HFO-1252zc, Z-HFO-1234ze, E-HFO-1336mzz, CO_2 and combinations thereof;

(vi) combinations of any of groups (i), (ii), (iii), (iv) and/or (v).

4. The composition of claim 3, wherein:

a first refrigerant portion comprises the E-HFO-1234ze and at least one additional compound selected from the group consisting of HFO-1234yf, HFC-245cb, HFO-1225ye(E), HFO-1225ye(Z), HFO-1225zc, HFC-236fa, HFC-152a, HFC-143a, HFC-125, HFC-134a, HFO-1234zc, HCFO-1233xf , HCFO-1233zd, CFC-114, HCFC-124, 3,3,3-trifluoropropyne, HFO-1234ze(Z), HFC-245fa, HFC-227ea, HFO-1243zf, HFC-263fb, HFC-134 and combinations thereof; and

a second refrigerant portion comprises the at least one residual refrigerant.

5. A composition comprising HFC-32 and at least one residual refrigerant selected from at least one of the following groups:

(i) one or more of HCFC-22, HFC-125, HFO-1234yf and combinations thereof;

(ii) one or more of CFC-12, HFC-134a, HFC-227ea, Z-HCFO-1224yd, HFO-1234yf, E-HFO-1234ze, E-HFO-1336mzz and combinations thereof;

(iii) one or more of HCFC-22, HFC-115, HFC-125, HFC-134a, HFC-143a, HFO-1234yf, E-HFO-1234ze, CO_2 and combinations thereof;

(iv) one or more of HCFC-22, HFC-125, HFC-134a, HFC-143a, E-HFO-1234ze, HFO-1234yf and combinations thereof;

(v) one or more of CFC-12, HCFC-22, HFC-115, HFC-125, HFC-134a, HFC-143a, HFC-152a, HFC-227ea, E-HFO-1132, Z-HFO-1132, Z-HCFO-1224yd, HFO-1234yf, E-HFO-1234ze, HFO-1252zc, E-HFO-1336mzz, CO_2 and combinations thereof; or

(vi) combinations of any of groups (i), (ii), (iii), (iv) and/or (v).

6. The composition of claim 5, wherein:

a first refrigerant portion comprises the HFC-32 and at least one additional compound selected from the group consisting of HFC-143a, HFC-41, HFC-134a, HCFC-22, CFC-12, HCC-40 and combinations thereof; and

a second refrigerant portion comprises the at least one residual refrigerant.

7. The composition according to claim 1, wherein a total amount of the residual refrigerants is from about 0.00001 to about 2 weight percent.

8. The composition according to claim 1, wherein the composition is a reprocessed product of a thermal management fluid blend.

9. A container or cylinder, preferably a recovery container or recovery cylinder, containing the composition of claim 1.

10. A recovery container, a recovery cylinder, or a recycle, recover, recharge (“RRR”) machine containing the composition of claim 1.

11. The composition of claim 1, wherein the composition is selected from the group consisting of a spent thermal management fluid, a used thermal management fluid, a recovered thermal management fluid, a recycled thermal management fluid and a reclaimed thermal management fluid.

12. The composition according to claim 3, wherein a total amount of the residual refrigerants is from about 0.00001 to about 2 weight percent.

13. The composition according to claim 3, wherein the composition is a reprocessed product of a thermal management fluid blend.

14. A container or cylinder, preferably a recovery container or recovery cylinder, containing the composition of claim 3.

15. A recovery container, a recovery cylinder, or a recycle, recover, recharge (“RRR”) machine containing the composition of claim 3.

16. The composition of claim 3, wherein the composition is selected from the group consisting of a spent thermal management fluid, a used thermal management fluid, a recovered thermal management fluid, a recycled thermal management fluid and a reclaimed thermal management fluid.

17. The composition according to claim 5, wherein a total amount of the residual refrigerants is from about 0.00001 to about 2 weight percent.

18. The composition according to claim 5, wherein the composition is a reprocessed product of a thermal management fluid blend.

19. A container or cylinder, preferably a recovery container or recovery cylinder, containing the composition of claim 5.

20. A recovery container, a recovery cylinder, or a recycle, recover, recharge (“RRR”) machine containing the composition of claim 5.

21. The composition of claim 5, wherein the composition is selected from the group consisting of a spent thermal management fluid, a used thermal management fluid, a recovered thermal management fluid, a recycled thermal management fluid and a reclaimed thermal management fluid.