CLAIMS

What is claimed is:

1. A composition comprising HFC-1225ye and at least one compound selected from the group consisting of:

HFC-1234ze, HFC-1234yf, HFC-1234ye, HFC-1243zf, HFC-32, HFC-125, HFC-134, HFC-134a, HFC-143a, HFC-152a, HFC-161, HFC-227ea, HFC-236ea, HFC-236fa, HFC-245fa, HFC-365mfc, propane, n-butane, isobutane, 2-methylbutane, n-pentane, cyclopentane, dimethylether, CF_3SCF_3, CO_2 and CF_3I.

2. A composition comprising HFC-1234ze and at least one compound selected from the group consisting of:

HFC-1234yf, HFC-1234ye, HFC-1243zf, HFC-32, HFC-125, HFC-134, HFC-134a, HFC-143a, HFC-152a, HFC-161, HFC-227ea, HFC-236ea, HFC-236fa, HFC-245fa, HFC-365mfc, propane, n-butane, isobutane, 2-methylbutane, n-pentane, cyclopentane, dimethylether, CF_3SCF_3, CO_2 and CF_3I.

3. A composition comprising HFC-1234yf and at least one compound selected from the group consisting of:

HFC-1234ye, HFC-1243zf, HFC-32, HFC-125, HFC-134, HFC-134a, HFC-143a, HFC-152a, HFC-161, HFC-227ea, HFC-236ea, HFC-236fa, HFC-245fa, HFC-365mfc, propane, n-butane, isobutane, 2-methylbutane, n-pentane, cyclopentane, dimethylether, CF_3SCF_3, CO_2 and CF_3I.

4. A composition comprising HFC-1234ye and at least one compound selected from the group consisting of:

HFC-1243zf, HFC-32, HFC-125, HFC-134, HFC-134a, HFC-143a, HFC-152a, HFC-161, HFC-227ea, HFC-236ea, HFC-236fa, HFC-245fa, HFC-365mfc, propane, n-butane, isobutane, 2-methylbutane, n-pentane, cyclopentane, dimethylether, CF_3SCF_3, CO_2 and CF_3I.

5. A composition comprising HFC-1243zf and at least one compound selected from the group consisting of:

HFC-32, HFC-125, HFC-134, HFC-134a, HFC-143a, HFC-152a, HFC-161, HFC-227ea, HFC-236ea, HFC-236fa, HFC-245fa, HFC-365mfc, propane, n-butane, isobutane, 2-methylbutane, n-pentane, cyclopentane, dimethylether, CF_3SCF_3, CO_2 and CF_3I.

6. A composition of claim 1 selected from the group consisting of:

HFC-1225ye and HFC-32;
HFC-1225ye and HFC-134a;
HFC-1225ye and HFC-134;
HFC-1225ye and CO_2;
HFC-1225ye, HFC-152a, and HFC-32;
HFC-1225ye, HFC-152a, and CO_2;
HFC-1225ye, HFC-152a, and propane;
HFC-1225ye, HFC-152a, and isobutane;
HFC-1225ye, HFC-152a, and dimethylether;
HFC-1225ye, HFC-134a, and HFC-152a;
HFC-1225ye, HFC-134a, HFC-152a and HFC-32;
HFC-1225ye, HFC-134a, and HFC-32;
HFC-1225ye, HFC-134a, and HFC-161;
HFC-1225ye, HFC-134a, and CO_2;
HFC-1225ye, HFC-134a, and propane;
HFC-1225ye, HFC-134a, and isobutane;
HFC-1225ye, HFC-134a, and dimethylether;
HFC-1225ye, HFC-134, and HFC-32;
HFC-1225ye, HFC-1234yf and HFC-134a;
HFC-1225ye, HFC-1234yf and HFC-32;
HFC-1225ye, HFC-1234yf and HFC-152a;
HFC-1225ye, HFC-1234yf and HFC-125;
HFC-1225ye, HFC-1234yf and CF_3I;
HFC-1225ye, HFC-32 and HFC-125;
HFC-1225ye, HFC-125 and n-butane;
HFC-1225ye, HFC-125 and isobutane;
HFC-1225ye, trans-HFC-1234ze and HFC-134;
HFC-1225ye, trans-HFC-1234ze and HFC-227ea;

HFC-1225ye, trans-HFC-1234ze and propane;
HFC-1225ye, trans-HFC-1234ze and n-butane;
HFC-1225ye, trans-HFC-1234ze and dimethylether;
HFC-1225ye, trans-HFC-1234ze and CF_3SCF_3;
HFC-1225ye, HFC-1243zf and HFC-134;
HFC-1225ye, HFC-1243zf and n-butane;
HFC-1225ye, HFC-1243zf and isobutane;
HFC-1225ye, HFC-1243zf and dimethylether;
HFC-1225ye, HFC-1243zf and CF_3I;
HFC-1225ye, HFC-134 and HFC-152a;
HFC-1225ye, HFC-134 and HFC-227ea;
HFC-1225ye, HFC-134 and n-butane;
HFC-1225ye, HFC-134 and isobutane;
HFC-1225ye, HFC-134 and dimethylether;
HFC-1225ye, HFC-227ea and dimethylether;
HFC-1225ye, n-butane and dimethylether;
HFC-1225ye, n-butane and CF_3SCF_3;
HFC-1225ye, isobutane and dimethylether;
HFC-1225ye, isobutane and CF_3I;
HFC-1225ye, HFC-32 and CF_3I;
HFC-1225ye, HFC-1234yf, HFC-32 and HFC-125;
HFC-1225ye, HFC-1234yf, HFC-32, HFC-125 and CF_3I;
HFC-1225ye, HFC-32, HFC-125 and HFC-152a;
HFC-1225ye, HFC-32, HFC-125 and isobutane;
HFC-1225ye, HFC-32, HFC-125 and propane;
HFC-1225ye, HFC-32, HFC-125 and dimethylether;
HFC-1225ye, HFC-32, CF3I and dimethylether;
HFC-1225ye, HFC-32, HFC-125 and CF_3I; and
HFC-1225ye, HFC-1234yf, HFC-32 and HFC-134a.

7. A composition of claim 1 selected from the group consisting of:
about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-32;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-134a;

about 0.1 weight percent to about 99.9 weight percent HFC-1225ye and about 99.9 weight percent to about 0.1 weight percent CO_2;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 1 to about 98 weight percent HFC-32;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 0.1 to about 98 weight percent CO_2;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 1 to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 1 to about 98 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 1 to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 to about 98 weight percent HFC-152a;

about 1 weight percent to about 97 weight percent HFC-1225ye, about 1 weight percent to about 97 weight percent HFC-134a, about 1 weight percent to about 97 weight percent HFC-152a, and about 0.1 weight percent to about 97 weight percent HFC-32;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent HFC-32;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent HFC-161;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 0.1 weight percent to about 98 weight percent CO_2;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent dimethylether; and

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134, and about 1 weight percent to about 98 weight percent HFC-32;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent HFC-134a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent HFC-32;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent HFC-125;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent CF_3I;

about 0.1 weight percent to about 98 weight percent HFC-32, about 0.1 weight percent to about 98 weight percent HFC-125, and about 0.1 weight percent to about 98 weight percent HFC-1225ye;

about 0.1 weight percent to about 98 weight percent HFC-125, about 0.1 weight percent to about 98 weight percent HFC-1225ye, and about 0.1 weight percent to about 98 weight percent n-butane; and

about 0.1 weight percent to about 98 weight percent HFC-125, about 0.1 weight percent to about 98 weight percent HFC-1225ye, and about 0.1 weight percent to about 98 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent HFC-134;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 60 weight percent HFC-1225ye, about 1 weight percent to about 60 weight percent trans-HFC-1234ze and about 39 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent CF_3SCF_3;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent HFC-134;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent dimethylether;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 59 weight percent HFC-227ea

and about 1 weight percent to about 30 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 30 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 20 weight percent n-butane and about 1 weight percent to about 98 weight percent CF_3SCF_3;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 60 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 97 weight percent HFC-1225ye, about 1 weight percent to about 97 weight percent HFC-1234yf and about 1 weight percent to about 97 weight percent HFC-32 and about 1 weight percent to about 97 weight percent HFC-125;

about 1 weight percent to about 97 weight percent HFC-1225ye, about 1 weight percent to about 97 weight percent HFC-1234yf and about 1 weight percent to about 97 weight percent HFC-32 and about 1 weight percent to about 97 weight percent HFC-134a;

about 1 weight percent to about 96 weight percent HFC-1225ye, about 1 weight percent to about 96 weight percent HFC-1234yf and about 1 weight percent to about 96 weight percent HFC-32 and about 1 weight percent to about 96 weight percent HFC-125 and about 1 weight percent to about 97 weight percent CF_3I;

about 1 weight percent to about 97 weight percent HFC-1225ye, about 1 weight percent to about 97 weight percent HFC-32 and

about 1 weight percent to about 97 weight percent HFC-125 and
about 1 weight percent to about 97 weight percent HFC-152a;
about 1 weight percent to about 97 weight percent HFC-1225ye,
about 1 weight percent to about 97 weight percent HFC-32 and
about 1 weight percent to about 97 weight percent HFC-125 and
about 1 weight percent to about 50 weight percent isobutane;
about 1 weight percent to about 97 weight percent HFC-1225ye,
about 1 weight percent to about 97 weight percent HFC-32 and
about 1 weight percent to about 97 weight percent HFC-125 and
about 1 weight percent to about 50 weight percent propane;
about 1 weight percent to about 97 weight percent HFC-1225ye,
about 1 weight percent to about 97 weight percent HFC-32 and
about 1 weight percent to about 97 weight percent HFC-125 and
about 1 weight percent to about 50 weight percent DME;
about 1 weight percent to about 97 weight percent HFC-1225ye,
about 1 weight percent to about 97 weight percent HFC-32 and
about 1 weight percent to about 97 weight percent HFC-125 and
about 1 weight percent to about 97 weight percent CF_3I; and
about 1 weight percent to about 97 weight percent HFC-1225ye,
about 1 weight percent to about 97 weight percent HFC-32 and
about 1 weight percent to about 97 weight percent CF_3I and
about 1 weight percent to about 50 weight percent DME.

8. A composition of claim 1 selected from the group consisting of:

about 50 weight percent to about 99 weight percent HFC-1225ye and about 50 weight percent to about 1 weight percent HFC-32;

about 40 weight percent to about 99 weight percent HFC-1225ye and about 60 weight percent to about 1 weight percent HFC-134a;

about 70 weight percent to about 99.7 weight percent HFC-1225ye and about 30 weight percent to about 0.3 weight percent CO_2;

about 51 weight percent to about 99 weight percent HFC-1225ye and about 49 weight percent to about 1 weight percent HFC-1234yf;

about 50 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent HFC-152a, and about 1 to about 40 weight percent HFC-32;

about 50 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent HFC-152a, and about 0.3 to about 30 weight percent HFC-CO_2;

about 50 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent HFC-152a, and about 1 to about 20 weight percent propane;

about 50 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent HFC-152a, and about 1 weight percent to about 20 weight percent isobutane;

about 50 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent HFC-152a, and about 1 weight percent to about 20 weight percent dimethylether;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 1 weight percent to about 40 weight percent HFC-152a;

about 20 weight percent to about 97 weight percent HFC-1225ye, about 1 weight percent to about 80 weight percent HFC-134a, about 1 weight percent to about 50 weight percent HFC-152a, and about 0.1 weight percent to about 50 weight percent HFC-32;

about 20 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 1 weight percent to about 40 weight percent HFC-32;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 1 weight percent to about 20 weight percent HFC-161;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 0.3 weight percent to about 30 weight percent CO_2;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 1 weight percent to about 20 weight percent propane;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 1 weight percent to about 20 weight percent isobutane;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134a, and about 1 weight percent to about 20 weight percent dimethylether;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 50 weight percent HFC-134, and about 1 weight percent to about 40 weight percent HFC-32;

about 10 weight percent to about 90 weight percent HFC-1225ye, about 10 weight percent to about 90 weight percent HFC-1234yf, and about 0.1 weight percent to about 50 weight percent HFC-134a;

about 10 weight percent to about 90 weight percent HFC-1225ye, about 11 weight percent to about 90 weight percent HFC-1234yf, and about 0.1 weight percent to about 50 weight percent HFC-32;

about 10 weight percent to about 90 weight percent HFC-1225ye, about 10 weight percent to about 90 weight percent HFC-1234yf, and about 0.1 weight percent to about 50 weight percent HFC-152a;

about 10 weight percent to about 90 weight percent HFC-1225ye, about 10 weight percent to about 90 weight percent HFC-1234yf, and about 0.1 weight percent to about 50 weight percent HFC-125;

about 9 weight percent to about 90 weight percent HFC-1225ye, about 9 weight percent to about 90 weight percent HFC-1234yf, and about 1 weight percent to about 60 weight percent CF_3I;

about 5 weight percent to about 70 weight percent HFC-32, about 5 weight percent to about 70 weight percent HFC-125, and about 5 weight percent to about 70 weight percent HFC-1225ye;

about 5 weight percent to about 70 weight percent HFC-125, about 5 weight percent to about 70 weight percent HFC-1225ye, and about 1 weight percent to about 20 weight percent n-butane;

about 5 weight percent to about 70 weight percent HFC-125, about 5 weight percent to about 70 weight percent HFC-1225ye, and about 1 weight percent to about 20 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent trans-HFC-1234ze and about 10 weight percent to about 80 weight percent HFC-134;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent trans-HFC-1234ze and about 10 weight percent to about 80 weight percent HFC-227ea;

about 10 weight percent to about 60 weight percent HFC-1225ye, about 10 weight percent to about 60 weight percent trans-HFC-1234ze and about 39 weight percent to about 80 weight percent propane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent trans-HFC-1234ze and about 1 weight percent to about 20 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent trans-HFC-1234ze and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent trans-HFC-1234ze and about 10 weight percent to about 80 weight percent CF_3SCF_3;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-1243zf and about 10 weight percent to about 80 weight percent HFC-134;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-1243zf

and about 1 weight percent to about 20 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-1243zf and about 10 weight percent to about 80 weight percent CF_3I;

about 10 weight percent to about 80 weight percent HFC-1225ye about 10 weight percent to about 80 weight percent, HFC-134 and about 1 weight percent to about 50 weight percent HFC-152a;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-134 and about 10 weight percent to about 80 weight percent HFC-227ea;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 30 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 30 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 30 weight percent dimethylether;

about 50 weight percent to about 80 weight percent HFC-1225ye, about 1 weight percent to about 49 weight percent HFC-227ea and about 1 weight percent to about 20 weight percent dimethylether;

about 60 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 20 weight percent n-butane and about 1 weight percent to about 20 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 1 weight percent to about 10 weight percent n-butane and about 10 weight percent to about 80 weight percent CF_3SCF_3;

about 40 weight percent to about 90 weight percent HFC-1225ye, about 1 weight percent to about 30 weight percent isobutane and about 1 weight percent to about 30 weight percent dimethylether; and

about 10 weight percent to about 80 weight percent HFC-1225ye, about 1 weight percent to about 30 weight percent isobutane and about 10 weight percent to about 80 weight percent CF_3I;

about 5 weight percent to about 80 weight percent HFC-1225ye, about 1 weight percent to about 70 weight percent HFC-32 and about 1 weight percent to about 80 weight percent CF_3I;

about 1 weight percent to about 80 weight percent HFC-1225ye, about 1 weight percent to about 70 weight percent HFC-1234yf and about 5 weight percent to about 70 weight percent HFC-32 and about 5 weight percent to about 70 weight percent HFC-125;

about 5 weight percent to about 80 weight percent HFC-1225ye, about 5 weight percent to about 70 weight percent HFC-1234yf and about 5 weight percent to about 70 weight percent HFC-32 and about 5 weight percent to about 70 weight percent HFC-134a;

about 1 weight percent to about 70 weight percent HFC-1225ye, about 1 weight percent to about 60 weight percent HFC-1234yf and about 1 weight percent to about 70 weight percent HFC-32 and about 1 weight percent to about 60 weight percent HFC-125 and about 1 weight percent to about 60 weight percent CF_3I;

about 10 weight percent to about 80 weight percent HFC-1225ye, about 5 weight percent to about 70 weight percent HFC-32 and about 5 weight percent to about 70 weight percent HFC-125 and about 5 weight percent to about 70 weight percent HFC-152a;

about 5 weight percent to about 70 weight percent HFC-1225ye,
about 5 weight percent to about 70 weight percent HFC-32 and
about 5 weight percent to about 70 weight percent HFC-125 and
about 1 weight percent to about 30 weight percent isobutane;
about 5 weight percent to about 70 weight percent HFC-1225ye,
about 5 weight percent to about 70 weight percent HFC-32 and
about 5 weight percent to about 70 weight percent HFC-125 and
about 1 weight percent to about 30 weight percent propane;
about 5 weight percent to about 70 weight percent HFC-1225ye,
about 5 weight percent to about 70 weight percent HFC-32 and
about 5 weight percent to about 70 weight percent HFC-125 and
about 1 weight percent to about 30 weight percent DME;
about 10 weight percent to about 80 weight percent HFC-1225ye,
about 5 weight percent to about 70 weight percent HFC-32 and
about 5 weight percent to about 70 weight percent HFC-125 and
about 1 weight percent to about 80 weight percent CF_3I; and
about 5 weight percent to about 70 weight percent HFC-1225ye,
about 5 weight percent to about 70 weight percent HFC-32 and
about 5 weight percent to about 70 weight percent CF_3I and
about 1 weight percent to about 30 weight percent DME.

9. A composition of claim 1 selected from the group consisting of:
about 95 weight percent HFC-1225ye and about 5 weight percent HFC-32;
about 97 weight percent HFC-1225ye and about 3 weight percent HFC-32;
about 90 weight percent HFC-1225ye and about 10 weight percent HFC-134a;
about 99 weight percent HFC-1225ye and about 1 weight percent CO_2;
about 75 weight percent HFC-1225ye and about 25 weight percent HFC-1234yf;
about 60 weight percent HFC-1225ye and about 40 weight percent HFC-1234yf;
about 85 weight percent HFC-1225ye, about 10 weight percent HFC-152a, and about 5 weight percent HFC-32;

about 81 weight percent HFC-1225ye, about 15 weight percent HFC-152a, and about 4 weight percent HFC-32;

about 82 weight percent HFC-1225ye, about 15 weight percent HFC-152a, and about 3 weight percent HFC-32;

about 84 weight percent HFC-1225ye, about 15 weight percent HFC-152a, and about 1 weight percent CO_2;

about 84 weight percent HFC-1225ye, about 15.5 weight percent HFC-152a, and about 0.5 weight percent CO_2;

about 85 weight percent HFC-1225ye, about 13 weight percent HFC-152a, and about 2 weight percent propane;

about 85 weight percent HFC-1225ye, about 13 weight percent HFC-152a, and about 2 weight percent isobutane;

about 85 weight percent HFC-1225ye, about 13 weight percent HFC-152a, and about 2 weight percent dimethylether;

about 76 weight percent HFC-1225ye, about 9 weight percent HFC-134a, and about 15 weight percent HFC-152a;

about 74 weight percent HFC-1225ye, about 8 weight percent HFC-134a, 17 weight percent HFC-152a, and about 1 weight percent HFC-32;

about 88 weight percent HFC-1225ye, about 9 weight percent HFC-134a, and about 3 weight percent HFC-32;

about 86 weight percent HFC-1225ye, about 10 weight percent HFC-134a, and about 4 weight percent HFC-161;

about 88.5 weight percent HFC-1225ye, about 11 weight percent HFC-134a, and about 0.5 weight percent CO_2;

about 87 weight percent HFC-1225ye, about 10 weight percent HFC-134a, and about 3 weight percent propane;

about 87 weight percent HFC-1225ye, about 10 weight percent HFC-134a, and about 3 weight percent isobutane;

about 87 weight percent HFC-1225ye, about 10 weight percent HFC-134a, and about 3 weight percent dimethylether;

about 88 weight percent HFC-1225ye, about 9 weight percent HFC-134, and about 3 weight percent HFC-32;

about 70 weight percent HFC-1225ye, about 20 weight percent HFC-1234yf, and about 10 weight percent HFC-134a;

about 20 weight percent HFC-1225ye, about 70 weight percent HFC-1234yf, and about 10 weight percent HFC-134a;

about 25 weight percent HFC-1225ye, about 73 weight percent HFC-1234yf, and about 2 weight percent HFC-32;
about 75 weight percent HFC-1225ye, about 23 weight percent HFC-1234yf, and about 2 weight percent HFC-32;
about 70 weight percent HFC-1225ye, about 25 weight percent HFC-1234yf, and about 5 weight percent HFC-152a;
about 25 weight percent HFC-1225ye, about 70 weight percent HFC-1234yf, and about 5 weight percent HFC-152a;
about 25 weight percent HFC-1225ye, about 71 weight percent HFC-1234yf, and about 4 weight percent HFC-125;
about 75 weight percent HFC-1225ye, about 21 weight percent HFC-1234yf, and about 4 weight percent HFC-125;
about 75 weight percent HFC-1225ye, about 24 weight percent HFC-1234yf, and about 1 weight percent HFC-125;
about 40 weight percent HFC-1225ye, about 40 weight percent HFC-1234yf, and about 20 weight percent CF_3I;
about 45 weight percent HFC-1225ye, about 45 weight percent HFC-1234yf, and about 10 weight percent CF_3I;
about 25 weight percent HFC-1225ye, about 74 weight percent HFC-1234yf, and about 1 weight percent HFC-125;
about 30 weight percent HFC-32, about 40 weight percent HFC-125, and about 30 weight percent HFC-1225ye;
about 23 weight percent HFC-32, about 25 weight percent HFC-125, and about 52 weight percent HFC-1225ye;
about 65 weight percent HFC-125, about 32 weight percent HFC-1225ye, and about 3 weight percent n-butane; and
about 85.1 weight percent HFC-125, about 11.5 weight percent HFC-1225ye, and about 3.4 weight percent isobutane.

10. A composition of claim 2 selected from the group consisting of:
cis-HFC-1234ze and HFC-1234ye;
cis-HFC-1234ze and HFC-236ea;
cis-HFC-1234ze and HFC-236fa;
cis-HFC-1234ze and HFC-245fa;
cis-HFC-1234ze and n-butane;
cis-HFC-1234ze and isobutane;
cis-HFC-1234ze and 2-methylbutane;

cis-HFC-1234ze and n-pentane;
trans-HFC-1234ze and HFC-134a;
trans-HFC-1234ze and HFC-152a;
trans-HFC-1234ze and HFC-32;
trans-HFC-1234ze, HFC-125 and n-butane;
trans-HFC-1234ze, HFC-32 and HFC-125;
trans-HFC-1234ze, HFC-125 and isobutane;
trans-HFC-1234ze, HFC-1243zf and HFC-227ea;
trans-HFC-1234ze, HFC-1243zf and n-butane;
trans-HFC-1234ze, HFC-1243zf and isobutane;
trans-HFC-1234ze, HFC-1243zf and dimethylether;
trans-HFC-1234ze, HFC-134 and HFC-152a;
trans-HFC-1234ze, HFC-134 and HFC-227ea;
trans-HFC-1234ze, HFC-134 and diemthylether;
trans-HFC-1234ze, HFC-134a and HFC-152a;
trans-HFC-1234ze, HFC-152a and n-butane;
trans-HFC-1234ze, HFC-152a and dimethylether;
trans-HFC-1234ze, HFC-227ea and n-butane;
trans-HFC-1234ze, n-butane and dimethylether;
trans-HFC-1234ze, n-butane and CF_3I;
trans-HFC-1234ze, isobutane and dimethylether;
trans-HFC-1234ze, isobutane and CF_3I; and
trans-HFC-1234ze, isobutane and CF_3SCF_3.

11. A composition of claim 2 selected from the group consisting of:
about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-1234ye;
about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-236ea;
about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-236fa;

about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-245fa;

about 1 weight percent to about 80 weight percent cis-HFC-1234ze and about 99 weight percent to about 20 weight percent n-butane;

about 1 weight percent to about 69 weight percent cis-HFC-1234ze and about 99 weight percent to about 31 weight percent isobutane;

about 60 weight percent to about 99 weight percent cis-HFC-1234ze and about 40 weight percent to about 1 weight percent 2-methylbutane;

about 63 weight percent to about 99 weight percent cis-HFC-1234ze and about 37 weight percent to about 1 weight percent n-pentane;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-32;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 0.1 weight percent to about 98 weight percent HFC-32, about 0.1 weight percent to about 98 weight percent HFC-125, and about 0.1 weight percent to about 98 weight percent trans-HFC-1234ze;

about 0.1 weight percent to about 98 weight percent HFC-125, about 0.1 weight percent to about 98 weight percent trans-HFC-1234ze, and about 0.1 weight percent to about 98 weight percent n-butane;

about 0.1 weight percent to about 98 weight percent HFC-125, about 0.1 weight percent to about 98 weight percent trans-HFC-1234ze, and about 0.1 weight percent to about 98 weight percent isobutane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 50 weight percent n-butane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-227ea and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 40 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 30 weight percent n-butane and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 60 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3I; and

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3SCF_3.

12. A composition of claim 2 selected from the group consisting of:

about 30 weight percent to about 99 weight percent trans-HFC-1234ze and about 70 weight percent to about 1 weight percent HFC-134a;

about 40 weight percent to about 99 weight percent trans-HFC-1234ze and about 60 weight percent to about 1 weight percent HFC-32;

about 40 weight percent to about 99 weight percent trans-HFC-1234ze and about 60 weight percent to about 1 weight percent HFC-152a;

about 5 weight percent to about 70 weight percent HFC-32, about 5 weight percent to about 70 weight percent HFC-125, and about 5 weight percent to about 70 weight percent trans-HFC-1234ze;

about 5 weight percent to about 70 weight percent HFC-125, about 5 weight percent to about 70 weight percent trans-HFC-1234ze, and about 1 weight percent to about 20 weight percent n-butane; and

about 5 weight percent to about 70 weight percent HFC-125, about 5 weight percent to about 70weight percent trans-HFC-1234ze, and about 1 weight percent to about 20 weight percent isobutane;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-1243zf and about 10 weight percent to about 80 weight percent HFC-227ea;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-1243zf and about 1 weight percent to about 20 weight percent n-butane;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent isobutane;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-1243zf and about 1 weight percent to about 40 weight percent dimethylether;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 50 weight percent HFC-152a;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent

HFC-134 and about 10 weight percent to about 80 weight percent HFC-227ea;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 30 weight percent diemthylether;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-134a and about 1 weight percent to about 50 weight percent HFC-152a;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 30 weight percent n-butane;

about 20 weight percent to about 90 weight percent trans-HFC-1234ze, about 1 weight percent to about 50 weight percent HFC-152a and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 10 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent n-butane;

about 10 weight percent to about 90 weight percent trans-HFC-1234ze, about 1 weight percent to about 30 weight percent n-butane and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 1 weight percent to about 20 weight percent n-butane and about 10 weight percent to about 80 weight percent CF_3I;

about 10 weight percent to about 90 weight percent trans-HFC-1234ze, about 1 weight percent to about 30 weight percent isobutane and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 1 weight percent to about 20 weight percent

isobutane and about 10 weight percent to about 80 weight percent CF_3I; and

about 10 weight percent to about 80 weight percent trans-HFC-1234ze, about 1 weight percent to about 20 weight percent isobutane and about 10 weight percent to about 80 weight percent CF_3SCF_3..

13. A composition of claim 2 selected from the group consisting of:

about 90 weight percent trans-HFC-1234ze and about 10 weight percent HFC-134a;

about 95 weight percent trans-HFC-1234ze and about 5 weight percent HFC-32;

about 80 weight percent trans-HFC-1234ze and about 20 weight percent HFC-152a;

about 30 weight percent HFC-32, about 50 weight percent HFC-125, and about 20 weight percent trans-HFC-1234ze;

about 23 weight percent HFC-32, about 25 weight percent HFC-125, and about 52 weight percent trans-HFC-1234ze;

about 66 weight percent HFC-125, about 32 weight percent trans-HFC-1234ze, and about 2 weight percent n-butane; and

about 86.1 weight percent HFC-125, about 11.5 weight percent trans-HFC-1234ze, and about 2.4 weight percent isobutane.

14. A composition of claim 3 selected from the group consisting of:

HFC-1234yf and HFC-134a;

HFC-1234yf and HFC-152a;

HFC-1234yf and HFC-32;

HFC-1234yf, HFC-125 and n-butane;

HFC-1234yf, HFC-32 and HFC-125;

HFC-1234yf, HFC-125 and isobutane;

HFC-1234yf, HFC-32 and HFC-143a;

HFC-1234yf, HFC-32 and isobutane;

HFC-1234yf, HFC-125 and HFC-143a;

HFC-1234yf, HFC-125 and isobutane;

HFC-1234yf, HFC-134 and propane;

HFC-1234yf, HFC-134 and dimethylether;
HFC-1234yf, HFC-134a and propane;
HFC-1234yf, HFC-134a and n-butane;
HFC-1234yf, HFC-134a and isobutane;
HFC-1234yf, HFC-134a and dimethylether;
HFC-1234yf, HFC-143a and propane;
HFC-1234yf, HFC-143a and dimethylether;
HFC-1234yf, HFC-152a and n-butane;
HFC-1234yf, HFC-152a and isobutane;
HFC-1234yf, HFC-152a and dimethylether;
HFC-1234yf, HFC-227ea and propane;
HFC-1234yf, HFC-227ea and n-butane;
HFC-1234yf, HFC-227ea and isobutane;
HFC-1234yf, HFC-227ea and dimethylether;
HFC-1234yf, n-butane and dimethylether;
HFC-1234yf, isobutane and dimethylether;
HFC-1234yf, dimethylether and CF_3I;
HFC-1234yf, dimethylether and CF_3SCF_3;
HFC-1234yf, HFC-32 and CF_3I;
HFC-1234yf, HFC-32 and HFC-125;
HFC-1234yf, HFC-32, HFC-125 and CF_3I; and
HFC-1234yf, HFC-32, HFC-134a and CF_3I.

15. A composition of claim 3 selected from the group consisting of:
about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-134a;
about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-32;
about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-152a;
about 0.1 weight percent to about 98 weight percent HFC-32, about 0.1 weight percent to about 98 weight percent HFC-125, and about 0.1 weight percent to about 98 weight percent HFC-1234yf;

about 0.1 weight percent to about 98 weight percent HFC-125, about 0.1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent n-butane; and

about 0.1 weight percent to about 98 weight percent HFC-125, about 0.1 weight percent to about 98 weight percent HFC-1234yf, and about 0.1 weight percent to about 98 weight percent isobutane;

about 1 weight percent to about 50 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 98 weight percent HFC-143a;

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 30 weight percent isobutane;

about 1 weight percent to about 60 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-125 and about 1 weight percent to about 98 weight percent HFC-143a;

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-125 and about 1 weight percent to about 20 weight percent isobutane;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 70 weight percent HFC-134 and about 19 weight percent to about 90 weight percent propane;

about 1 weight percent to about 70 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134 and about 29 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 80 weight percent HFC-134a and about 19 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 30 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 40 weight percent dimethylether;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-143a and about 1 weight percent to about 98 weight percent propane;

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-143a and about 1 weight percent to about 20 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 90 weight percent HFC-152a and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 70 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 70 weight percent HFC-227ea and about 29 weight percent to about 98 weight percent propane;

about 40 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 59 weight percent HFC-227ea and about 1 weight percent to about 20 weight percent n-butane;

about 30 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 69 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 40 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 50 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent dimethylether and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 40 weight percent dimethylether and about 1 weight percent to about 98 weight percent CF_3SCF_3;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 98 weight percent HFC-125;

about 1 weight percent to about 97 weight percent HFC-1234yf, about 1 weight percent to about 97 weight percent HFC-32 and about 1 weight percent to about 97 weight percent HFC-125 and about 1 weight percent to about 97 weight percent CF_3I;

about 1 weight percent to about 97 weight percent HFC-1234yf, about 1 weight percent to about 97 weight percent HFC-32 and about 1 weight percent to about 97 weight percent HFC-134a and about 1 weight percent to about 97 weight percent CF_3I; and

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 98 weight percent CF_3I.

16. A composition of claim 3 selected from the group consisting of:

about 30 weight percent to about 99 weight percent HFC-1234yf and about 70 weight percent to about 1 weight percent HFC-134a;

about 40 weight percent to about 99 weight percent HFC-1234yf and about 60 weight percent to about 1 weight percent HFC-32;

about 40 weight percent to about 99 weight percent HFC-1234yf and about 60 weight percent to about 1 weight percent HFC-152a

about 5 weight percent to about 70 weight percent HFC-32, about 5 weight percent to about 70 weight percent HFC-125, and about 5 weight percent to about 70 weight percent HFC-1234yf;

about 5 weight percent to about 70 weight percent HFC-125, about 5 weight percent to 70 weight percent HFC-1234yf, and about 1 weight percent to about 20 weight percent n-butane;

about 5 weight percent to about 70 weight percent HFC-125, about 5 weight percent to about 70 weight percent HFC-1234yf, and about 1 weight percent to about 20 weight percent isobutane;

about 15 weight percent to about 50 weight percent HFC-1234yf, about 20 weight percent to about 80 weight percent HFC-32 and about 5 weight percent to about 60 weight percent HFC-143a;

about 10 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 90 weight percent

HFC-32 and about 1 weight percent to about 10 weight percent isobutane;

about 10 weight percent to about 60 weight percent HFC-1234yf, about 20 weight percent to about 70 weight percent HFC-125 and about 20 weight percent to about 70 weight percent HFC-143a;

about 10 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 90 weight percent HFC-125 and about 1 weight percent to about 10 weight percent isobutane;

about 20 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 70 weight percent HFC-134 and about 19 weight percent to about 50 weight percent propane;

about 20 weight percent to about 70 weight percent HFC-1234yf, about 10 weight percent to about 70 weight percent HFC-134 and about 29 weight percent to about 50 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-134a and about 19 weight percent to about 50 weight percent propane;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-134a and about 1 weight percent to about 20 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-134a and about 1 weight percent to about 20 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-134a and about 1 weight percent to about 20 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent

HFC-143a and about 1 weight percent to about 50 weight percent propane;

about 5 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 90 weight percent HFC-143a and about 1 weight percent to about 10 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 20 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 20 weight percent isobutane;

about 10 weight percent to about 70 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 20 weight percent dimethylether;

about 10 weight percent to about 60 weight percent HFC-1234yf, about 10 weight percent to about 60 weight percent HFC-227ea and about 29 weight percent to about 50 weight percent propane;

about 50 weight percent to about 98 weight percent HFC-1234yf, about 10 weight percent to about 49 weight percent HFC-227ea and about 1 weight percent to about 10 weight percent n-butane;

about 50 weight percent to about 98 weight percent HFC-1234yf, about 10 weight percent to about 49 weight percent HFC-227ea and about 1 weight percent to about 10 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 20 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 40 weight percent

n-butane and about 1 weight percent to about 20 weight percent dimethylether;

about 10 weight percent to about 90 weight percent HFC-1234yf, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 20 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 20 weight percent dimethylether and about 10 weight percent to about 80 weight percent CF_3I;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 20 weight percent dimethylether and about 10 weight percent to about 70 weight percent CF_3SCF_3;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 10 weight percent to about 80 weight percent HFC-32 and about 10 weight percent to about 80 weight percent HFC-125;

about 10 weight percent to about 80 weight percent HFC-1234yf, about 5 weight percent to about 70 weight percent HFC-32 and about 10 weight percent to about 80 weight percent HFC-125 and about 5 weight percent to about 80 weight percent CF_3I;

about 1 weight percent to about 70 weight percent HFC-1234yf, about 5 weight percent to about 70 weight percent HFC-32 and about 5 weight percent to about 80 weight percent HFC-134a and about 5 weight percent to about 70 weight percent CF_3I; and

about 10 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 70 weight percent HFC-32 and about 1 weight percent to about 80 weight percent CF_3I.

17. A composition of claim 3 selected from the group consisting of:

about 90 weight percent HFC-1234yf and about 10 weight percent HFC-134a;

about 95 weight percent HFC-1234yf and about 5 weight percent HFC-32;
about 80 weight percent HFC-1234yf and about 20 weight percent HFC-152a
about 40 weight percent HFC-32, about 50 weight percent HFC-125, and about 10 weight percent HFC-1234yf;
about 23 weight percent HFC-32, about 25 weight percent HFC-125, and about 52 weight percent HFC-1234yf;
about 15 weight percent HFC-32, about 45 weight percent HFC-125, and about 40 weight percent HFC-1234yf;
about 10 weight percent HFC-32, about 60 weight percent HFC-125, and about 30 weight percent HFC-1234yf;
about 67 weight percent HFC-125, about 32 weight percent HFC-1234yf, and about 1 weight percent n-butane; and
about 87.1 weight percent HFC-125, about 11.5 weight percent HFC-1234yf, and about 1.4 weight percent isobutane.

18. A composition of claim 5 selected from the group consisting of:
HFC-1243zf, HFC-134 and HFC-227ea;
HFC-1243zf, HFC-134 and n-butane;
HFC-1243zf, HFC-134 and dimethylether;
HFC-1243zf, HFC-134 and CF_3I;
HFC-1243zf, HFC-134a and HFC-152a;
HFC-1243zf, HFC-134a and n-butane;
HFC-1243zf, HFC-152a and propane;
HFC-1243zf, HFC-152a and n-butane;
HFC-1243zf, HFC-152a and isobutane;
HFC-1243zf, HFC-152a and dimethylether;
HFC-1243zf, HFC-227ea and n-butane;
HFC-1243zf, HFC-227ea and isobutane;
HFC-1243zf, HFC-227ea and dimethylether;
HFC-1243zf, n-butane and dimethylether;
HFC-1243zf, isobutane and dimethylether;
HFC-1243zf, isobutane and CF_3I; and
HFC-1243zf, dimethylether and CF_3SCF_3.

19. A composition of claim 5 selected from the group consisting of:

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 70 weight percent HFC-1243zf, about 1 weight percent to about 70 weight percent HFC-152a and about 29 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-

152a and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-227ea and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 90 weight percent HFC-227ea and about 1 weight percent to about 50 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 90 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 40 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 60 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3I; and

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 40 weight percent dimethylether and about 1 weight percent to about 90 weight percent CF_3SCF_3.

20. A composition of claim 5 selected from the group consisting of:

about 10 weight percent to about 80 weight percent HFC-1243zf, about 10 weight percent to about 80 weight percent HFC-134 and about 10 weight percent to about 80 weight percent HFC-227ea;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 30 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 10 weight percent to about 80 weight percent HFC-134 and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 10 weight percent to about 80 weight percent HFC-134 and about 10 weight percent to about 80 weight percent CF_3I;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 10 weight percent to about 80 weight percent HFC-134a and about 1 weight percent to about 50 weight percent HFC-152a;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 10 weight percent to about 80 weight percent HFC-134a and about 1 weight percent to about 30 weight percent n-butane;

about 10 weight percent to about 70 weight percent HFC-1243zf, about 1 weight percent to about 50 weight percent HFC-152a and about 29 weight percent to about 40 weight percent propane;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 20 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 30 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-152a and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent n-butane;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent isobutane;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 90 weight percent HFC-1243zf, about 109 weight percent to about 30 weight percent n-butane and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 90 weight percent HFC-1243zf, about 1 weight percent to about 30 weight percent isobutane and about 1 weight percent to about 30 weight percent dimethylether;

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 30 weight percent isobutane and about 10 weight percent to about 80 weight percent CF_3I; and

about 10 weight percent to about 80 weight percent HFC-1243zf, about 1 weight percent to about 30 weight percent dimethylether and about 10 weight percent to about 80 weight percent CF_3SCF_3.

21.A composition of claim 1 comprising an azeotropic or near-azeotropic composition selected from the group consisting of:

about 1 to about 34 weight percent HFC-1225ye and about 99 to about 66 weight percent HFC-1234yf;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent trans-HFC-1234ze;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-134;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 84 weight percent HFC-1225ye and about 99 weight percent to about 16 weight percent HFC-161 and about 90 weight percent to about 99 weight percent HFC-1225ye and about 10 weight percent to about 1 weight percent HFC-161;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-227ea;

about 57 weight percent to about 99 weight percent HFC-1225ye and about 43 weight percent to about 1 weight percent HFC-236ea;

about 48 weight percent to about 99 weight percent HFC-1225ye and about 52 weight percent to about 1 weight percent HFC-236fa;

about 70 weight percent to about 99 weight percent HFC-1225ye and about 30 weight percent to about 1 weight percent HFC-245fa;

about 1 weight percent to about 72 weight percent HFC-1225ye and about 99 weight percent to about 28 weight percent propane;

about 65 weight percent to about 99 weight percent HFC-1225ye and about 35 weight percent to about 1 weight percent n-butane;

about 50 weight percent to about 99 weight percent HFC-1225ye and about 50 weight percent to about 1 weight percent isobutane;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent dimethylether;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent bis(trifluoromethyl) sulfide;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 98 weight percent HFC-161;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134a, and about 1 weight percent to about 20 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 1 weight percent to about 50 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-152a, and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 1 weight percent to about 98 weight percent HFC-134a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 1 weight percent to about 20 weight percent HFC-125;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1234yf, and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 97 weight percent HFC-1225ye, about 1 weight percent to about 97 weight percent HFC-134a, about 1 weight percent to about 97 weight percent HFC-152a, and about 1 weight percent to about 10 weight percent HFC-32;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent HFC-1225ye, and about 1 weight percent to about 10 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-32, about 1 weight percent to about 98 weight percent HFC-125, and about 1 weight percent to about 4 weight percent HFC-1225ye;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent HFC-134;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 60 weight percent HFC-1225ye, about 1 weight percent to about 60 weight percent trans-HFC-1234ze and about 3 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent trans-HFC-1234ze and about 1 weight percent to about 98 weight percent CF_3SCF_3;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent HFC-134;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-

134 and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent dimethylether;

about 40 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 59 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 30 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 20 weight percent n-butane and about 1 weight percent to about 98 weight percent CF_3SCF_3;

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 60 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether; and

about 1 weight percent to about 98 weight percent HFC-1225ye, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3I.

22. A composition of claim 2 comprising an azeotropic or near-azeotropic composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-1234yf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 52 weight percent trans-HFC-1234ze and about 99 weight percent to about 48 weight percent HFC-161 and about 87 weight percent to about 99 weight percent trans-HFC-1234ze and about 13 weight percent to about 1 weight percent HFC-161;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-227ea;

about 54 weight percent to about 99 weight percent trans-HFC-1234ze and about 46 weight percent to about 1 weight percent HFC-236ea;

about 44 weight percent to about 99 weight percent trans-HFC-1234ze and about 56 weight percent to about 1 weight percent HFC-236fa;

about 67 weight percent to about 99 weight percent trans-HFC-1234ze and about 33 weight percent to about 1 weight percent HFC-245fa;

about 1 weight percent to about 71 weight percent trans-HFC-1234ze and about 99 weight percent to about 29 weight percent propane;

about 62 weight percent to about 99 weight percent trans-HFC-1234ze and about 38 weight percent to about 1 weight percent n-butane;

about 39 weight percent to about 99 weight percent trans-HFC-1234ze and about 61 weight percent to about 1 weight percent isobutane;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent dimethylether;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent bis(trifluoromethy)sulfide;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent CF_3I;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent trans-HFC-1234ze and about 1 weight percent to about 10 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-32, about 1 weight percent to about 98 weight percent HFC-125, and about 1 weight percent to about 5 weight percent trans-HFC-1234ze;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent trans-HFC-1234ze and about 1 weight percent to about 10 weight percent n-butane;

about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-1234ye;

about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-236ea;

about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-236fa;

about 1 weight percent to about 99 weight percent cis-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-245fa;

about 1 weight percent to about 80 weight percent cis-HFC-1234ze and about 99 weight percent to about 20 weight percent n-butane;

about 1 weight percent to about 69 weight percent cis-HFC-1234ze and about 99 weight percent to about 31 weight percent isobutane;

about 60 weight percent to about 99 weight percent cis-HFC-1234ze and about 40 weight percent to about 1 weight percent 2-methylbutane;

about 63 weight percent to about 99 weight percent cis-HFC-1234ze and about 37 weight percent to about 1 weight percent n-pentane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-1243zf and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent

HFC-134 and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 50 weight percent n-butane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 98 weight percent HFC-227ea and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 40 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 30 weight percent n-butane and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 60 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3I; and

about 1 weight percent to about 98 weight percent trans-HFC-1234ze, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3SCF_3.

23. A composition of claim 3 comprising an azeotropic or near-azeotropic composition selected from the group consisting of :

about 1 weight percent to about 57 weight percent HFC-1234yf and about 99 weight percent to about 43 weight percent HFC-32;

about 1 weight percent to about 51 weight percent HFC-1234yf and about 99 weight percent to about 49 weight percent HFC-125;

about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-134;

about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-161;

about 1 weight percent to about 60 weight percent HFC-1234yf and about 40 weight percent to about 1 weight percent HFC-143a;

about 29 weight percent to about 99 weight percent HFC-1234yf and about 71 weight percent to about 1 weight percent HFC-227ea;

about 66 weight percent to about 99 weight percent HFC-1234yf and about 34 weight percent to about 1 weight percent HFC-236fa;

about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 80 weight percent HFC-1234yf and about 99 weight percent to about 20 weight percent propane;

about 71 weight percent to about 99 weight percent HFC-1234yf and about 29 weight percent to about 1 weight percent n-butane;

about 60 weight percent to about 99 weight percent HFC-1234yf and about 40 weight percent to about 1 weight percent isobutane;

about 1 weight percent to about 99 weight percent HFC-1234yf and about 99 weight percent to about 1 weight percent dimethylether;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent HFC-1234yf, and about 1 weight percent to about 10 weight percent isobutane;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent HFC-1234yf, and about 1 weight percent to about 10 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-32, about 1 weight percent to about 98 weight percent HFC-125, and about 1 weight percent to about 55 weight percent HFC-1234yf;

about 1 weight percent to about 50 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 98 weight percent HFC-143a;

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-32 and about 1 weight percent to about 30 weight percent isobutane;

about 1 weight percent to about 60 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-125 and about 1 weight percent to about 98 weight percent HFC-143a;

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-

125 and about 1 weight percent to about 20 weight percent isobutane;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 70 weight percent HFC-134 and about 19 weight percent to about 90 weight percent propane;

about 1 weight percent to about 70 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134 and about 29 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 80 weight percent HFC-134a and about 19 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 30 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 40 weight percent dimethylether;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-143a and about 1 weight percent to about 98 weight percent propane;

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-143a and about 1 weight percent to about 20 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-

152a and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 90 weight percent HFC-152a and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 70 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 80 weight percent HFC-1234yf, about 1 weight percent to about 70 weight percent HFC-227ea and about 29 weight percent to about 98 weight percent propane;

about 40 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 59 weight percent HFC-227ea and about 1 weight percent to about 20 weight percent n-butane;

about 30 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 69 weight percent HFC-227ea and about 1 weight percent to about 30 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 40 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 50 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent

dimethylether and about 1 weight percent to about 98 weight percent CF_3I; and

about 1 weight percent to about 98 weight percent HFC-1234yf, about 1 weight percent to about 40 weight percent dimethylether and about 1 weight percent to about 98 weight percent CF_3SCF_3.

24. A composition of claim 4 comprising an azeotropic or near-azeotropic composition selected from the group consisting of:

about 38 weight percent to about 99 weight percent HFC-1234ye and about 62 weight percent to about 1 weight percent HFC-134;

about 1 weight percent to about 99 weight percent HFC-1234ye and about 99 weight percent to about 1 weight percent HFC-236ea;

about 1 weight percent to about 99 weight percent HFC-1234ye and about 99 weight percent to about 1 weight percent HFC-236fa;

about 1 weight percent to about 99 weight percent HFC-1234ye and about 99 weight percent to about 1 weight percent HFC-245fa;

about 1 weight percent to about 78 weight percent HFC-1234ye and about 99 weight percent to about 22 weight percent n-butane;

about 70 weight percent to about 99 weight percent HFC-1234ye and about 30 weight percent to about 1 weight percent cyclopentane;

about 1 weight percent to about 68 weight percent HFC-1234ye and about 99 weight percent to about 32 weight percent isobutane;

about 47 weight percent to about 99 weight percent HFC-1234ye and about 53 weight percent to about 1 weight percent 2-methylbutane; and

about 57 weight percent to about 99 weight percent HFC-1234ye and about 43 weight percent to about 1 weight percent n-pentane.

25. A composition of claim 5 comprising an azeotropic or near-azeotropic composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent HFC-1243zf and about weight percent 99 to about 1 weight percent HFC-134;

about 1 weight percent to about 99 weight percent HFC-1243zf and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent HFC-1243zf and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1243zf and about 99 weight percent to about 1 weight percent HFC-161;

about 1 weight percent to about 99 weight percent HFC-1243zf and about 99 weight percent to about 1 weight percent HFC-227ea;

about 53 weight percent to about 99 weight percent HFC-1243zf and about 47 to about 1 weight percent HFC-236ea;

about 49 weight percent to about 99 weight percent HFC-1243zf and about 51 weight percent to about 1 weight percent HFC-236fa;

about 66 weight percent to about 99 weight percent HFC-1243zf and about 34 weight percent to about 1 weight percent HFC-245fa;

about 1 weight percent to about 71 weight percent HFC-1243zf and about 99 weight percent to about 29 weight percent propane;

about 62 weight percent to about 99 weight percent HFC-1243zf and about 38 weight percent to about 1 weight percent n-butane;

about 45 weight percent to about 99 weight percent HFC-1243zf and about 55 weight percent to about 1 weight percent isobutane;

about 1 weight percent to about 99 weight percent HFC-1243zf and about 99 weight percent to about 1 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent HFC-227ea;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134 and about 1 weight percent to about 98 weight percent CF_3I;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 98 weight percent HFC-152a;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-134a and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 70 weight percent HFC-1243zf, about 1 weight percent to about 70 weight percent HFC-152a and about 29 weight percent to about 98 weight percent propane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 30 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-152a and about 1 weight percent to about 40 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-

152a and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 98 weight percent HFC-227ea and about 1 weight percent to about 40 weight percent n-butane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 90 weight percent HFC-227ea and about 1 weight percent to about 50 weight percent isobutane;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 80 weight percent HFC-227ea and about 1 weight percent to about 90 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 40 weight percent n-butane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 60 weight percent isobutane and about 1 weight percent to about 98 weight percent dimethylether;

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 40 weight percent isobutane and about 1 weight percent to about 98 weight percent CF_3I; and

about 1 weight percent to about 98 weight percent HFC-1243zf, about 1 weight percent to about 40 weight percent dimethylether and about 1 weight percent to about 90 weight percent CF_3SCF_3.

26. A composition of claim 1 comprising an azeotropic composition selected from the group consisting of:

63.0 weight percent HFC-1225ye and 37.0 weight percent trans-HFC-1234ze having a vapor pressure of about 11.7 psia (81 kPa) at a temperature of about -25 °C;

40.0 weight percent HFC-1225ye and 60.0 weight percent HFC-1243zf having a vapor pressure of about 13.6 psia (94 kPa) at a temperature of about -25 °C;

52.2 weight percent HFC-1225ye and 47.8 weight percent HFC-134 having a vapor pressure of about 12.8 psia (88 kPa) at a temperature of about -25 °C;

7.3 weight percent HFC-1225ye and 92.7 weight percent HFC-152a having a vapor pressure of about 14.5 psia (100 kPa) at a temperature of about -25 °C;

29.7 weight percent HFC-1225ye and 70.3 weight percent propane having a vapor pressure of about 30.3 psia (209 kPa) at a temperature of about -25 °C;

89.5 weight percent HFC-1225ye and 10.5 weight percent n-butane having a vapor pressure of about 12.3 psia (85 kPa) at a temperature of about -25 °C;

79.3 weight percent HFC-1225ye and 20.7 weight percent isobutane having a vapor pressure of about 13.9 psia (96 kPa) at a temperature of about -25 °C;

82.1 weight percent HFC-1225ye and 17.9 weight percent dimethylether having a vapor pressure of about 10.8 psia (74 kPa) at a temperature of about -25 °C; and

37.0 weight percent HFC-1225ye and 63.0 weight percent CF_3SCF_3 having a vapor pressure of about 12.4 psia (85 kPa) at a temperature of about -25 °C;

47.4 weight percent HFC-1225ye, 5.6 weight percent trans HFC-1234ze, and 47.0 weight percent HFC-134 having a vapor pressure of about 12.8 psia (88 kPa) at a temperature of about -25 °C;

28.4 weight percent HFC-1225ye, 52.6 weight percent trans HFC-1234ze, and 19.0 weight percent HFC-227ea having a vapor pressure of about 11.6 psia (80.2 kPa) at a temperature of about -25 °C;

20.9 weight percent HFC-1225ye, 9.1 weight percent trans HFC-1234ze, and 70.0 weight percent propane having a vapor pressure of about 30.4 psia (209 kPa) at a temperature of about -25 °C;

65.8 weight percent HFC-1225ye, 24.1 weight percent trans HFC-1234ze, and 10.1 weight percent HFC-134 having a vapor pressure of about 12.4 psia (85.4 kPa) at a temperature of about -25 °C;

41.0 weight percent HFC-1225ye, 40.1 weight percent trans HFC-1234ze, and 18.9 weight percent dimethylether having a vapor pressure of about 11.0 psia (75.7 kPa) at a temperature of about -25 °C;

1.0 weight percent HFC-1225ye, 33.7 weight percent trans HFC-1234ze, and 65.2 weight percent CF_3SCF_3 having a vapor pressure of about 12.7 psia (87.3 kPa) at a temperature of about -25 °C;

28.7 weight percent HFC-1225ye, 47.3 weight percent HFC-1243zf, and 24.1 weight percent HFC-134 having a vapor pressure of about 13.8 psia (95.1 kPa) at a temperature of about -25 °C;

37.5 weight percent HFC-1225ye, 55.0 weight percent HFC-1243zf, and 7.5 weight percent n-butane having a vapor pressure of about 14.0 psia (96.2 kPa) at a temperature of about -25 °C;

40.5 weight percent HFC-1225ye, 43.2 weight percent HFC-1243zf, and 16.3 weight percent isobutane having a vapor pressure of about 14.8 psia (102 kPa) at a temperature of about -25 °C;

19.1 weight percent HFC-1225ye, 51.0 weight percent HFC-1243zf, and 29.9 weight percent dimethylether having a vapor pressure of about 12.2 psia (83.8 kPa) at a temperature of about -25 °C;

10.3 weight percent HFC-1225ye, 27.3 weight percent HFC-1243zf, and 62.3 weight percent CF_3I having a vapor pressure of about 14.1 psia (96.9 kPa) at a temperature of about -25 °C;

63.6 weight percent HFC-1225ye, 26.8 weight percent HFC-134, and 9.6 weight percent HFC-152a having a vapor pressure of about 12.4 psia (85.4 kPa) at a temperature of about -25 °C;

1.3 weight percent HFC-1225ye, 52.3 weight percent HFC-134, and 46.4 weight percent HFC-227ea having a vapor pressure of about 12.3 psia (84.9 kPa) at a temperature of about -25 °C;

18.1 weight percent HFC-1225ye, 67.1 weight percent HFC-134, and 14.9 weight percent n-butane having a vapor pressure of about 14.5 psia (100 kPa) at a temperature of about -25 °C;

0.7 weight percent HFC-1225ye, 74.0 weight percent HFC-134, and 25.3 weight percent isobutane having a vapor pressure of about 16.7 psia (115 kPa) at a temperature of about -25 °C;

29.8 weight percent HFC-1225ye, 52.5 weight percent HFC-134, and 17.8 weight percent dimethylether having a vapor pressure of about 9.8 psia (67.4 kPa) at a temperature of about -25 °C;

63.1 weight percent HFC-1225ye, 31.0 weight percent HFC-227ea, and 5.8 weight percent dimethylether having a vapor pressure of about 10.9 psia (75.4 kPa) at a temperature of about -25 °C;

66.0 weight percent HFC-1225ye, 13.0 weight percent n-butane, and 21.1 weight percent dimethylether having a vapor pressure of about 11.3 psia (78.2 kPa) at a temperature of about -25 °C;

71.3 weight percent HFC-1225ye, 5.6 weight percent n-butane, and 23.0 weight percent CF_3SCF_3 having a vapor pressure of about 12.3 psia (84.5 kPa) at a temperature of about -25 °C;

49.9 weight percent HFC-1225ye, 29.7 weight percent isobutane, and 20.4 weight percent dimethylether having a vapor pressure of about 12.8 psia (88.5 kPa) at a temperature of about -25 °C; and

27.7 weight percent HFC-1225ye, 2.2 weight percent isobutane, and 70.1 weight percent CF_3I having a vapor pressure of about 13.2 psia (90.9 kPa) at a temperature of about -25 °C.

27. A composition of claim 2 comprising an azeotropic composition selected from the group consisting of:

17.0 weight percent trans-HFC-1234ze and 83.0 weight percent HFC-1243zf having a vapor pressure of about 13.0 psia (90 kPa) at a temperature of about -25 °C;

45.7 weight percent trans-HFC-1234ze and 54.3 weight percent HFC-134 having a vapor pressure of about 12.5 psia (86 kPa) at a temperature of about -25 °C;

9.5 weight percent trans-HFC-1234ze and 90.5 weight percent HFC-134a having a vapor pressure of about 15.5 psia (107 kPa) at a temperature of about -25 °C;

21.6 weight percent trans-HFC-1234ze and 78.4 weight percent HFC-152a having a vapor pressure of about 14.6 psia (101 kPa) at a temperature of about -25 °C;

59.2 weight percent trans-HFC-1234ze and 40.8 weight percent HFC-227ea having a vapor pressure of about 11.7 psia (81 kPa) at a temperature of about -25 °C;

28.5 weight percent trans-HFC-1234ze and 71.5 weight percent propane having a vapor pressure of about 30.3 psia (209 kPa) at a temperature of about -25 °C;

88.6 weight percent trans-HFC-1234ze and 11.4 weight percent n-butane having a vapor pressure of about 11.9 psia (82 kPa) at a temperature of about -25 °C;

77.9 weight percent trans-HFC-1234ze and 22.1 weight percent isobutane having a vapor pressure of about 12.9 psia (89 kPa) at a temperature of about -25 °C;

84.1 weight percent trans-HFC-1234ze and 15.9 weight percent dimethylether having a vapor pressure of about 10.8 psia (74 kPa) at a temperature of about -25 °C;

34.3 weight percent trans-HFC-1234ze and 65.7 weight percent CF_3SCF_3 having a vapor pressure of about 12.7 psia (88 kPa) at a temperature of about -25 °C;

7.1 weight percent trans-HFC-1234ze, 73.7 weight percent HFC-1243zf, and 19.2 weight percent HFC-227ea having a vapor pressure of about 13.1 psia (90.4 kPa) at a temperature of about -25 °C;

9.5 weight percent trans-HFC-1234ze, 81.2 weight percent HFC-1243zf, and 9.3 weight percent n-butane having a vapor pressure of about 13.5 psia (92.9 kPa) at a temperature of about -25 °C;

3.3 weight percent trans-HFC-1234ze, 77.6 weight percent HFC-1243zf, and 19.1 weight percent isobutane having a vapor pressure of about 14.3 psia (98.3 kPa) at a temperature of about -25 °C;

2.6 weight percent trans-HFC-1234ze, 70.0 weight percent HFC-1243zf, and 27.4 weight percent dimethylether having a vapor pressure of about 12.0 psia (82.9 kPa) at a temperature of about -25 °C;

52.0 weight percent trans-HFC-1234ze, 42.9 weight percent HFC-134, and 5.1 weight percent HFC-152a having a vapor pressure of about 12.4 psia (85.3 kPa) at a temperature of about -25 °C;

30.0 weight percent trans-HFC-1234ze, 43.2 weight percent HFC-134, and 26.8 weight percent HFC-227ea having a vapor pressure of about 12.6 psia (86.9 kPa) at a temperature of about -25 °C;

27.7 weight percent trans-HFC-1234ze, 54.7 weight percent HFC-134, and 17.7 weight percent dimethylether having a vapor pressure of about 9.8 psia (67.3 kPa) at a temperature of about -25 °C;

14.4 weight percent trans-HFC-1234ze, 34.7 weight percent HFC-134a, and 51.0 weight percent HFC-152a having a vapor pressure of about 14.4 psia (99.4 kPa) at a temperature of about -25 °C;

5.4 weight percent trans-HFC-1234ze, 80.5 weight percent HFC-152a, and 14.1 weight percent n-butane having a vapor pressure of about 15.4 psia (106 kPa) at a temperature of about -25 °C;

59.1 weight percent trans-HFC-1234ze, 16.4 weight percent HFC-152a, and 24.5 weight percent dimethylether having a vapor pressure of about 10.8 psia (74.5 kPa) at a temperature of about -25 °C;

40.1 weight percent trans-HFC-1234ze, 48.5 weight percent HFC-227ea, and 11.3 weight percent n-butane having a vapor pressure of about 12.6 psia (86.9 kPa) at a temperature of about -25 °C;

68.1 weight percent trans-HFC-1234ze, 13.0 weight percent n-butane, and 18.9 weight percent dimethylether having a vapor pressure of about 11.3 psia (77.8 kPa) at a temperature of about -25 °C;

81.2 weight percent trans-HFC-1234ze, 9.7 weight percent n-butane, and 9.1 weight percent CF_3I having a vapor pressure of about 11.9 psia (81.8 kPa) at a temperature of about -25 °C;

55.5 weight percent trans-HFC-1234ze, 28.7 weight percent isobutane, and 15.8 weight percent dimethylether having a vapor pressure of about 12.4 psia (85.4 kPa) at a temperature of about -25 °C;

34.9 weight percent trans-HFC-1234ze, 6.1 weight percent isobutane, and 59.0 weight percent CF_3I having a vapor pressure of about 12.6 psia (86.7 kPa) at a temperature of about -25 °C;

37.7 weight percent trans-HFC-1234ze, 1.1 weight percent isobutane, and 61.7 weight percent CF_3SCF_3 having a vapor pressure of about 12.7 psia (87.3 kPa) at a temperature of about -25 °C;

20.9 weight percent cis-HFC-1234ze and 79.1 weight percent HFC-236ea having a vapor pressure of about 30.3 psia (209 kPa) at a temperature of about 25 °C;

76.2 weight percent cis-HFC-1234ze and 23.8 weight percent HFC-245fa having a vapor pressure of about 26.1 psia (180 kPa) at a temperature of about 25 °C;

51.4 weight percent cis-HFC-1234ze and 48.6 weight percent n-butane having a vapor pressure of about 6.1 psia (41.9 kPa) at a temperature of about -25 °C;

26.2 weight percent cis-HFC-1234ze and 73.8 weight percent isobutane having a vapor pressure of about 8.7 psia (60.3 kPa) at a temperature of about -25 °C;

86.6 weight percent cis-HFC-1234ze and 13.4 weight percent 2-methylbutane having a vapor pressure of about 27.2 psia (188 kPa) at a temperature of about 25 °C; and

92.9 weight percent cis-HFC-1234ze and 7.1 weight percent n-pentane having a vapor pressure of about 26.2 psia (181 kPa) at a temperature of about 25 °C;

28. The composition of claim 3 comprising an azeotropic composition selected from the group consisting of:

7.4 weight percent HFC-1234yf and 92.6 weight percent HFC-32 having a vapor pressure of about 49.2 psia (339 kPa) at a temperature of about -25 °C;

10.9 weight percent HFC-1234yf and 89.1 weight percent HFC-125 having a vapor pressure of about 40.7 psia (281 kPa) at a temperature of about -25 °C;

70.4 weight percent HFC-1234yf and 29.6 weight percent HFC-134a having a vapor pressure of about 18.4 psia (127 kPa) at a temperature of about -25 °C;

91.0 weight percent HFC-1234yf and 9.0 weight percent HFC-152a having a vapor pressure of about 17.9 psia (123 kPa) at a temperature of about -25 °C;

17.3 weight percent HFC-1234yf and 82.7 weight percent HFC-143a having a vapor pressure of about 29.5 psia (272 kPa) at a temperature of about -25 °C;

84.6 weight percent HFC-1234yf and 15.4 weight percent HFC-227ea having a vapor pressure of about 18.0 psia (124 kPa) at a temperature of about -25 °C;

51.5 weight percent HFC-1234yf and 48.5 weight percent propane having a vapor pressure of about 33.5 psia (231 kPa) at a temperature of about -25 °C;

98.1 weight percent HFC-1234yf and 1.9 weight percent n-butane having a vapor pressure of about 17.9 psia (123 kPa) at a temperature of about -25 °C;

88.1 weight percent HFC-1234yf and 11.9 weight percent isobutane having a vapor pressure of about 19.0 psia (131 kPa) at a temperature of about -25 °C;

53.5 weight percent HFC-1234yf and 46.5 weight percent dimethylether having a vapor pressure of about 13.1 psia (90 kPa) at a temperature of about -25 °C;

89.1 weight percent HFC-125, 9.7 weight percent HFC-1234yf and 1.2 weight percent isobutane having a vapor pressure of about 40.8 psia (281 kPa) at a temperature of about -25 °C;

3.9 weight percent HFC-1234yf, 74.3 weight percent HFC-32, and 21.8 weight percent HFC-143a having a vapor pressure of about 50.0 psia (345 kPa) at a temperature of about -25 °C;

1.1 weight percent HFC–1234yf, 92.1 weight percent HFC-32 and 6.8 weight percent isobutane having a vapor pressure of about 50.0 psia (345 kPa) at a temperature of about -25 °C;

14.4 weight percent HFC-1234yf, 43.5 weight percent HFC-125 and 42.1 weight percent HFC-143a having a vapor pressure of about 38.6 psia (266 kPa) at a temperature of about -25 °C;

4.3 weight percent HFC–1234yf, 39.1 weight percent HFC-134 and 56.7 weight percent propane having a vapor pressure of about 34.3 psia (236 kPa) at a temperature of about -25 °C;

15.2 weight percent HFC-1234yf, 67.0 weight percent HFC-134 and 17.8 weight percent dimethylether having a vapor pressure of about 10.4 psia (71.6 kPa) at a temperature of about -25 °C;

24.5 weight percent HFC-1234yf, 31.1 weight percent HFC-134a and 44.5 weight percent propane having a vapor pressure of about 34.0 psia (234 kPa) at a temperature of about -25 °C;

60.3 weight percent HFC-1234yf, 35.2 weight percent HFC-134a and 4.5 weight percent n-butane having a vapor pressure of about 18.6 psia (128 kPa) at a temperature of about -25 °C;

48.6 weight percent HFC-1234yf, 37.2 weight percent HFC-134a and 14.3 weight percent isobutane having a vapor pressure of about 19.9 psia (137 kPa) at a temperature of about -25 °C;

24.0 weight percent HFC-1234yf, 67.9 weight percent HFC-134a and 8.1 weight percent dimethylether having a vapor pressure of about 17.2 psia (119 kPa) at a temperature of about -25 °C;

17.7 weight percent HFC-1234yf, 71.0 weight percent HFC-143a and 11.3 weight percent propane having a vapor pressure of about 40.4 psia (279 kPa) at a temperature of about -25 °C;

5.7 weight percent HFC-1234yf, 93.0 weight percent HFC-143a and 1.3 weight percent dimethylether having a vapor pressure of about 39.1 psia (269 kPa) at a temperature of about -25 °C;

86.6 weight percent HFC-1234yf, 10.8 weight percent HFC-152a and 2.7 weight percent n-butane having a vapor pressure of about 18.0 psia (124 kPa) at a temperature of about -25 °C;

75.3 weight percent HFC-1234yf, 11.8 weight percent HFC-152a and 12.9 weight percent isobutane having a vapor pressure of about 19.1 psia (132 kPa) at a temperature of about -25 °C;

24.6 weight percent HFC-1234yf, 43.3 weight percent HFC-152a and 32.1 weight percent dimethylether having a vapor pressure of about 11.8 psia (81.2 kPa) at a temperature of about -25 °C;

35.6 weight percent HFC-1234yf, 17.8 weight percent HFC-227ea and 46.7 weight percent propane having a vapor pressure of about 33.8 psia (233 kPa) at a temperature of about -25 °C;

81.9 weight percent HFC-1234yf, 16.0 weight percent HFC-227ea and 2.1 weight percent n-butane having a vapor pressure of about 18.1 psia (125 kPa) at a temperature of about -25 °C;

86.6 weight percent HFC-1234yf, 10.8 weight percent HFC-152a and 2.7 weight percent n-butane having a vapor pressure of about 18.0 psia (124 kPa) at a temperature of about -25 °C;

70.2 weight percent HFC-1234yf, 18.2 weight percent HFC-227ea and 11.6 weight percent isobutane having a vapor pressure of about 19.3 psia (133 kPa) at a temperature of about -25 °C;

28.3 weight percent HFC-1234yf, 55.6 weight percent HFC-227ea and 16.1 weight percent dimethylether having a vapor pressure of about 15.0 psia (104 kPa) at a temperature of about -25 °C;

48.9 weight percent HFC-1234yf, 4.6 weight percent n-butane and 46.4 weight percent dimethylether having a vapor pressure of about 13.2 psia (90.7 kPa) at a temperature of about -25 °C;

31.2 weight percent HFC-1234yf, 26.2 weight percent isobutane and 42.6 weight percent dimethylether having a vapor pressure of about 14.2 psia (97.8 kPa) at a temperature of about -25 °C;

16.3 weight percent HFC-1234yf, 10.0 weight percent dimethylether and 73.7 weight percent CF_3I having a vapor pressure of about 15.7 psia (108 kPa) at a temperature of about -25 °C; and

34.3 weight percent HFC-1234yf, 10.5 weight percent dimethylether and 55.2 weight percent CF_3SCF_3 having a vapor pressure of about 14.6 psia (100 kPa) at a temperature of about -25 °C.

29. The composition of claim 4 comprising an azeotropic composition selected from the group consisting of:

24.0 weight percent HFC-1234ye and 76.0 weight percent HFC-236ea having a vapor pressure of about 3.35 psia (23.1 kPa) at a temperature of about -25 °C;

42.5 weight percent HFC-1234ye and 57.5 weight percent HFC-245fa having a vapor pressure of about 22.8 psia (157 kPa) at a temperature of about 25 °C;

41.2 weight percent HFC-1234ye and 58.8 weight percent n-butane having a vapor pressure of about 38.0 psia (262 kPa) at a temperature of about 25 °C;

16.4 weight percent HFC-1234ye and 83.6 weight percent isobutane having a vapor pressure of about 50.9 psia (351 kPa) at a temperature of about 25 °C;

80.3 weight percent HFC-1234ye and 19.7 weight percent 2-methylbutane having a vapor pressure of about 23.1 psia (159 kPa) at a temperature of about 25 °C; and

87.7 weight percent HFC-1234ye and 12.3 weight percent n-pentane having a vapor pressure of about 21.8 psia (150 kPa) at a temperature of about 25 °C.

30. The composition of claim 5 comprising an azeotropic composition selected from the group consisting of:

63.0 weight percent HFC-1243zf and 37.0 weight percent HFC-134 having a vapor pressure of about 13.5 psia (93 kPa) at a temperature of about -25 °C;

25.1 weight percent HFC-1243zf and 74.9 weight percent HFC-134a having a vapor pressure of about 15.9 psia (110 kPa) at a temperature of about -25 °C;

40.7 weight percent HFC-1243zf and 59.3 weight percent HFC-152a having a vapor pressure of about 15.2 psia (104 kPa) at a temperature of about -25 °C;

78.5 weight percent HFC-1243zf and 21.5 weight percent HFC-227ea having a vapor pressure of about 13.1 psia (90 kPa) at a temperature of about -25 °C;

32.8 weight percent HFC-1243zf and 67.2 weight percent propane having a vapor pressure of about 31.0 psia (213 kPa) at a temperature of about -25 °C;

90.3 weight percent HFC-1243zf and 9.7 weight percent n-butane having a vapor pressure of about 13.5 psia (93 kPa) at a temperature of about -25 °C;

80.7 weight percent HFC-1243zf and 19.3 weight percent isobutane having a vapor pressure of about 14.3 psia (98 kPa) at a temperature of about -25 °C; and

72.7 weight percent HFC-1243zf and 27.3 weight percent dimethylether having a vapor pressure of about 12.0 psia (83 kPa) at a temperature of about -25 °C;

58.6 weight percent HFC-1243zf, 34.1 weight percent HFC-134, and 7.3 weight percent HFC-227ea having a vapor pressure of about 13.5 psia (93.4 kPa) at a temperature of about -25 °C;

27.5 weight percent HFC-1243zf, 58.7 weight percent HFC-134, and 13.9 weight percent n-butane having a vapor pressure of about 14.7 psia (101 kPa) at a temperature of about -25 °C;

18.7 weight percent HFC-1243zf, 63.5 weight percent HFC-134, and 17.8 weight percent dimethylether having a vapor pressure of about 10.1 psia (69.7 kPa) at a temperature of about -25 °C;

11.4 weight percent HFC-1243zf, 23.9 weight percent HFC-134, and 64.7 weight percent CF_3I having a vapor pressure of about 14.5 psia (99.6 kPa) at a temperature of about -25 °C;

41.5 weight percent HFC-1243zf, 21.5 weight percent HFC-134a, and 37.1 weight percent HFC-152a having a vapor pressure of about 15.0 psia (103 kPa) at a temperature of about -25 °C;

7.0 weight percent HFC-1243zf, 81.4 weight percent HFC-134a, and 11.6 weight percent n-butane having a vapor pressure of about 17.0 psia (117 kPa) at a temperature of about -25 °C;

2.9 weight percent HFC-1243zf, 34.0 weight percent HFC-152a, and 63.0 weight percent propane having a vapor pressure of about 31.7 psia (219 kPa) at a temperature of about -25 °C;

28.8 weight percent HFC-1243zf, 60.3 weight percent HFC-152a, and 11.0 weight percent n-butane having a vapor pressure of about 15.7 psia (108 kPa) at a temperature of about -25 °C;

6.2 weight percent HFC-1243zf, 68.5 weight percent HFC-152a, and 25.3 weight percent isobutane having a vapor pressure of about 17.1 psia (118 kPa) at a temperature of about -25 °C;

33.1 weight percent HFC-1243zf, 36.8 weight percent HFC-152a, and 30.1 weight percent dimethylether having a vapor pressure of about 11.4 psia (78.7 kPa) at a temperature of about -25 °C;

62.0 weight percent HFC-1243zf, 28.4 weight percent HFC-227ea, and 9.6 weight percent n-butane having a vapor pressure of about 13.7 psia (94.3 kPa) at a temperature of about -25 °C;

27.9 weight percent HFC-1243zf, 51.0 weight percent HFC-227ea, and 21.1 weight percent isobutane having a vapor pressure of about 15.0 psia (103 kPa) at a temperature of about -25 °C;

48.1 weight percent HFC-1243zf, 44.8 weight percent HFC-227ea, and 7.2 weight percent dimethylether having a vapor pressure of about 12.8 psia (88.1 kPa) at a temperature of about -25 °C;

60.3 weight percent HFC-1243zf, 10.1 weight percent n-butane, and 29.6 weight percent dimethylether having a vapor pressure of about 12.3 psia (84.7 kPa) at a temperature of about -25 °C;

47.1 weight percent HFC-1243zf, 26.9 weight percent isobutane, and 25.9 weight percent dimethylether having a vapor pressure of about 13.2 psia (90.7 kPa) at a temperature of about -25 °C;

32.8 weight percent HFC-1243zf, 1.1 weight percent isobutane, and 66.1 weight percent CF_3I having a vapor pressure of about 14.0 psia (96.3 kPa) at a temperature of about -25 °C; and

41.1 weight percent HFC-1243zf, 2.3 weight percent dimethylether, and 56.6 weight percent CF_3SCF_3 having a vapor pressure of about 13.6 psia (93.8 kPa) at a temperature of about -25 °C.

31. The composition as in any of claims 1-30, further comprising a lubricant selected from the group consisting of polyol esters, polyalkylene glycols, polyvinyl ethers, mineral oil, alkylbenzenes, synthetic paraffins, synthetic napthenes, and poly(alpha)olefins.

32. The composition as in any of claims 1-30, further comprising a tracer selected from the group consisting of hydrofluorocarbons, deuterated hydrocarbons, deuterated hydrofluorocarbons, perfluorocarbons, fluoroethers, brominated compounds, iodated compounds, alcohols, aldehydes, ketones, nitrous oxide (N_2O) and combinations thereof.

33. The composition of claim 32, further comprising a tracer selected from the group consisting of CD_3CD_3, $CD_3CD_2CD_3$, CD_2F_2, $CF_3CD_2CF_3$, CD_2FCF_3, CD_3CF_3, CDF_2CF_3, CF_3CDFCF_3, $CF_3CF_2CDF_2$, CDF_2CDF_2, $CF_3CF_2CD_3$, $CF_3CD_2CH_3$, $CF_2CH_2CD_3$, CF_3CF_3, cyclo-$CF_2CF_2CF_2$-, $CF_3CF_2CF_3$, cyclo-$CF_2CF_2CF_2CF_2$-, $CF_3CF_2CF_2CF_3$, $CF_3CF(CF_3)_2$, cyclo-$CF(CF_3)CF_2CF(CF_3)CF_2$-, trans-cyclo-$CF_2CF(CF_3)CF(CF_3)CF_2$-, cis-cyclo-$CF_2CF(CF_3)CF(CF_3)CF_2$-, CF_3OCHF_2, CF_3OCH_2F, CF_3OCH_3, $CF_3OCHFCF_3$, $CF_3OCH_2CF_3$, $CF_3OCH_2CHF_2$, $CF_3CH_2OCHF_2$ $CH_3OCF_2CF_3$, $CH_3CF_2OCF_3$ $CF_3CF_2CF_2OCHFCF_3$, $CF_3CF_2CF_2OCF(CF_3)CF_2OCHFCF_3$, CHF_3, CH_2FCH_3, CHF_2CH_3, CHF_2CHF_2, CF_3CHFCF_3, $CF_3CF_2CHF_2$, $CF_3CF_2CH_2F$, CHF_2CHFCF_3, $CF_3CH_2CF_3$, $CF_3CF_2CH_3$, $CF_3CH_2CHF_2$, $CHF_2CF_2CH_3$, CF_3CHFCH_3, $CF_3CH_2CH_3$, $CH_3CF_2CH_3$, CH_3CHFCH_3, $CH_2FCH_2CH_3$, $CHF_2CF_2CF_2CF_3$, $(CF_3)_2CHCF_3$, $CF_3CH_2CF_2CF_3$, $CHF_2CF_2CF_2CHF_2$, $CH_3CF_2CF_2CF_3$, $CF_3CHFCHFCF_2CF_3$, perfluoromethylcyclopentane, perfluoromethylcyclohexane, perfluorodimethylcyclohexane (ortho, meta, or para), perfluoroethylcyclohexane, perfluoroindan, perfluorotrimethylcyclohexane and isomers thereof, perfluoroisopropylcyclohexane, cis-perfluorodecalin, trans-perfluorodecalin, cis- or trans-perfluoromethyldecalin and isomers thereof, CH_3Br, CH_2FBr, CHF_2Br, $CHFBr_2$, $CHBr_3$, CH_2BrCH_3, $CHBr=CH_2$, CH_2BrCH_2Br, $CFBr=CHF$, CF_3I, CHF_2I, CH_2FI, CF_2ICH_2F, CF_2ICHF_2, CF_2ICF_2I, C_6F_5I, ethanol, n-propanol, isopropanol, acetone, n-propanal, n-butanal, methyl ethyl ketone, nitrous oxide, and combinations thereof.

34. The composition as in any of claims 1-30, further comprising a compatibilizer selected from the group consisting of:

a) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic

hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

b) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-[$R^4CON(R^5)$-], wherein R^1, R^2, R^3 and R^5 are independently selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

c) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

d) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

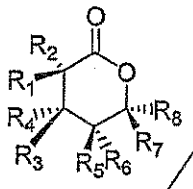
e) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

f) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

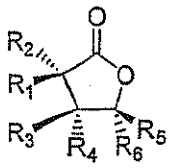
g) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

h) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic, alicyclic, and aromatic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said fluoroethers are derived from fluoroolefins and polyols, wherein said fluoroolefins are of the type $CF_2=CXY$, wherein X is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are linear or branched, wherein said linear polyols are of the type $HOCH_2(CHOH)_x(CRR')_yCH_2OH$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1, and said branched polyols are of the type $C(OH)_t(R)_u(CH_2OH)_v[(CH_2)_mCH_2OH]_w$, wherein R may be hydrogen, CH_3 or C_2H_5, m is an integer from 0 to 3, t and u are 0 or 1, v and w are integers from 0 to 4, and also wherein t + u + v + w = 4; and

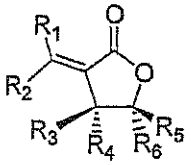
i) lactones represented by structures [B], [C], and [D]:



[B]



[C]



[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals; and the molecular weight is from about 100 to about 300 atomic mass units; and

j) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

35.The composition any of claims 1-30, further comprising at least one ultra-violet fluorescent dye selected from the group consisting of naphthalimides, perylenes, coumarins, anthracenes, phenanthracenes, xanthenes, thioxanthenes, naphthoxanthenes, fluoresceins, derivatives of said dye and combinations thereof.

36. The composition of claim 35, further comprising at least one solubilizing agent selected from the group consisting of hydrocarbons, dimethylether, polyoxyalkylene glycol ethers, amides, ketones, nitriles, chlorocarbons, esters, lactones, aryl ethers, hydrofluoroethers, and 1,1,1-trifluoroalkanes.

37. The composition of claim 36, wherein said solubilizing agent is selected from the group consisting of:

a) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

b) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-$[R^4CON(R^5)-]$, wherein R^1, R^2, R^3 and R^5 are independently selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

c) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and

wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

d) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

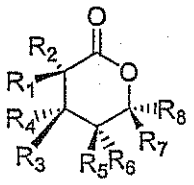
e) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

f) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

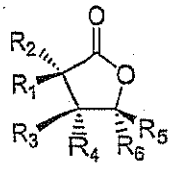
g) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

h) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic, alicyclic, and aromatic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said fluoroethers are derived from fluoroolefins and polyols, wherein said fluoroolefins are of the type $CF_2=CXY$, wherein X is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are linear or branched, wherein said linear polyols are of the type $HOCH_2(CHOH)_x(CRR')_yCH_2OH$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1, and said branched polyols are of the type $C(OH)_t(R)_u(CH_2OH)_v[(CH_2)_mCH_2OH]_w$, wherein R may be hydrogen, CH_3 or C_2H_5, m is an integer from 0 to 3, t and u are 0 or 1, v and w are integers from 0 to 4, and also wherein t + u + v + w = 4; and

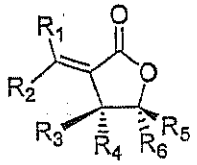
i) lactones represented by structures [B], [C], and [D]:



[B]



[C]



[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals; and the molecular weight is from about 100 to about 300 atomic mass units; and

j) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

38.The composition of any of claims 1-30, further comprising a stabilizer, water scavenger, or odor masking agent.

39.The composition of claim 38, wherein said stabilizer is selected from the group consisting of nitromethane, hindered phenols, hydroxylamines, thiols, phosphites and lactones.

40. A composition comprising:

(a) at least one lubricant selected from the group consisting of polyol esters, polyalkylene glycol, polyvinyl ethers, mineral oils, alkylbenzenes, synthetic paraffins, synthetic napthenes, and poly(alpha)olefins; and

(b) a composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1234yf;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent trans-HFC-1234ze;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-227ea; and

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent CF_3I.

41.

A composition comprising:

b) a refrigerant or heat transfer fluid composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1234yf;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent trans-HFC-1234ze;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-227ea; and

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent CF_3I;

and

b) a compatibilizer selected from the group consisting of:

i) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

ii) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-$[R^4CON(R^5)-]$, wherein R^1, R^2, R^3 and R^5 are independently selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

iii) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic

and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

iv) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

v) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

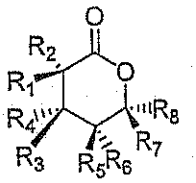
vi) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

vii) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

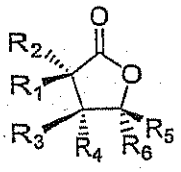
viii) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic, alicyclic, and aromatic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said fluoroethers are derived from fluoroolefins and polyols, wherein said fluoroolefins are of the type $CF_2=CXY$, wherein X is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are linear or branched, wherein said linear polyols are of the type $HOCH_2(CHOH)_x(CRR')_yCH_2OH$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1, and said branched polyols are of the type $C(OH)_t(R)_u(CH_2OH)_v[(CH_2)_mCH_2OH]_w$, wherein R may be

hydrogen, CH_3 or C_2H_5, m is an integer from 0 to 3, t and u are 0 or 1, v and w are integers from 0 to 4, and also wherein t + u + v + w = 4; and

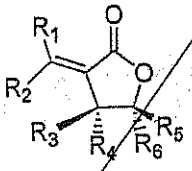
ix) lactones represented by structures [B], [C], and [D]:



[B]



[C]



[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals; and the molecular weight is from about 100 to about 300 atomic mass units; and

x) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

42. A composition comprising:

(a) at least one ultra-violet fluorescent dye selected from the group consisting of naphthalimides, perylenes, coumarins, anthracenes, phenanthracenes, xanthenes, thioxanthenes, naphthoxanthenes, fluoresceins, derivatives of said dye and combinations thereof; and

(b) a composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1234yf;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent trans-HFC-1234ze;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-227ea; and

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent CF_3I.

43. The composition of claim 42, further comprising at least one solubilizing agent selected from the group consisting of hydrocarbons, dimethylether, polyoxyalkylene glycol ethers, amides, ketones, nitriles, chlorocarbons, esters, lactones, aryl ethers, hydrofluoroethers, and 1,1,1-trifluoroalkanes.

44. The composition of claim 43, wherein said solubilizing agent is selected from the group consisting of:

a) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene

glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

b) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-[$R^4CON(R^5)$-], wherein R^1, R^2, R^3 and R^5 are independently selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

c) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

d) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

e) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

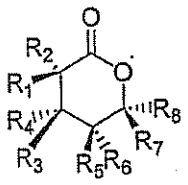
f) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

g) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

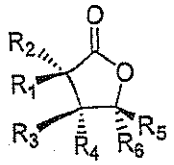
h) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said

fluoroethers are derived from fluoro-olefins and polyols, wherein said fluoro-olefins are of the type CF_2=CXY, wherein X is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are of the type $HOCH_2CRR'(CH_2)_z(CHOH)_xCH_2(CH_2OH)_y$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1; and

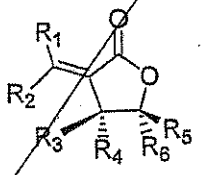
i) lactones represented by structures [B], [C], and [D]:



[B]



[C]



[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals; and the molecular weight is from about 100 to about 300 atomic mass units; and

j) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

45. A method of producing cooling, said method comprising: evaporating said composition of any of claims 1-30 in the vicinity of a body to be cooled and thereafter condensing said composition.

46. A method of producing heat, said method comprising: condensing said composition of any of claims 1-30 in the vicinity of a body to be heated and thereafter evaporating said composition.

47. A method of producing cooling, said method comprising: evaporating the composition of claim 41, 42, or 43 in the vicinity of a body to be cooled and thereafter condensing said composition.

48. A method of producing heat, said method comprising: condensing said composition of claim 41, 42, or 43 in the vicinity of a body to be heated and thereafter evaporating said composition.

49. A method for detecting the composition of claim 35 in a compression refrigeration, air conditioning, or heat pump apparatus, said method comprising providing said composition to said apparatus, and providing a suitable means for detecting said composition at a leak point or in the vicinity of said apparatus.

50. A method for detecting the composition of claim 42 or 43 in a compression refrigeration, air conditioning, or heat pump apparatus, said method comprising providing said composition to said apparatus, and providing a suitable means for detecting said composition at a leak point or in the vicinity of said apparatus.

51. A method of solubilizing a refrigerant or heat transfer fluid composition comprising the composition of any of claims 1-30 in a refrigeration lubricant selected from the group consisting of mineral oils, alkylbenzenes, synthetic paraffins, synthetic napthenes, and poly(alpha)olefins, wherein said method comprises contacting said lubricant with said composition in the presence of an effective amount of a compatibilizer, wherein said compatibilizer is selected from the group consisting of:

a) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

b) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-[$R^4CON(R^5)$-], wherein R^1, R^2, R^3 and R^5 are independently selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

c) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

d) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

e) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

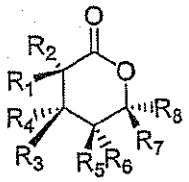
f) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

g) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

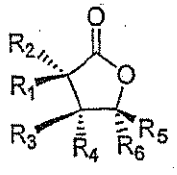
h) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said fluoroethers are derived from fluoro-olefins and polyols, wherein said fluoro-olefins are of the type $CF_2=CXY$, wherein X

is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are of the type $HOCH_2CRR'(CH_2)_z(CHOH)_xCH_2(CH_2OH)_y$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1; and

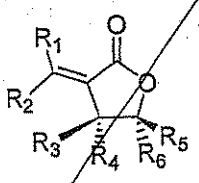
i) lactones represented by structures [B], [C], and [D]:



[B]



[C]



[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals; and the molecular weight is from about 100 to about 300 atomic mass units; and

j) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

52. A method for improving oil-return to the compressor in a compression refrigeration, air-conditioning or heat pump apparatus, said method comprising using the composition of claim 31 in said apparatus.

53. A method of solubilizing a refrigerant or heat transfer fluid composition in a refrigeration lubricant selected from the group consisting of mineral oils, alkylbenzenes, synthetic paraffins, synthetic napthenes, and poly(alpha)olefins, wherein said method comprises contacting said lubricant with said refrigerant or heat transfer fluid composition in the presence of an effective amount of a compatibilizer, wherein said refrigerant or heat transfer fluid comprises a composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent trans-HFC-1234ze;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-227ea; and

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent CF_3I;

and

wherein said compatibilizer is selected from the group consisting of:

a) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

b) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-$[R^4CON(R^5)-]$, wherein R^1, R^2, R^3 and R^5 are independently

selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

c) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

d) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

e) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

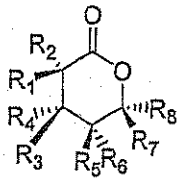
f) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

g) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

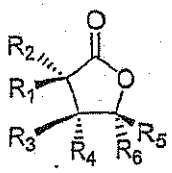
h) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said fluoroethers are derived from fluoro-olefins and polyols, wherein said fluoro-olefins are of the type $CF_2=CXY$, wherein X is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are of

the type $HOCH_2CRR'(CH_2)_z(CHOH)_xCH_2(CH_2OH)_y$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1; and

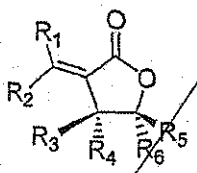
i) lactones represented by structures [B], [C], and [D]:



[B]



[C]



[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals; and the molecular weight is from about 100 to about 300 atomic mass units; and

j) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

54. A method for improving oil-return to the compressor in a compression refrigeration, air-conditioning or heat pump apparatus, said method comprising using the composition of claim 41 in said apparatus.

55. A method for replacing a high GWP refrigerant in a refrigeration, air-conditioning, or heat pump apparatus, wherein said high GWP refrigerant is selected from the group consisting of R134a, R22, R123, R11, R245fa, R114, R236fa, R124, R12, R410A, R407C, R417A, R422A, R507A, R502, and R404A, said method comprising providing the composition of any of claims 1-30 to said refrigeration, air-conditioning, or heat pump apparatus that uses, used or is designed to use said high GWP refrigerant.

56. A method for replacing a high GWP refrigerant in a refrigeration, air-conditioning, or heat pump apparatus, wherein said high GWP

refrigerant is selected from the group consisting of R134a, R22, R123, R11, R245fa, R114, R236fa, R124, R12, R410A, R407C, R417A, R422A, R507A, R502, and R404A, said method comprising providing a composition selected from the group consisting of:

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1234yf;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent trans-HFC-1234ze;

about 1 weight percent to about 99 weight percent HFC-1225ye and about 99 weight percent to about 1 weight percent HFC-1243zf;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-134a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-152a;

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent HFC-227ea; and

about 1 weight percent to about 99 weight percent trans-HFC-1234ze and about 99 weight percent to about 1 weight percent CF_3I;

to said refrigeration, air-conditioning, or heat pump apparatus that uses, used or is designed to use said high GWP refrigerant.

57. A method of using the composition of any of claims 1-30 as a heat transfer fluid composition, said process comprising comprises transporting said composition from a heat source to a heat sink.

58. A method for making the composition of any of claims 1-30, said method comprising: (i) reclaiming a volume of one or more

components of a refrigerant composition from at least one refrigerant container, (ii) removing impurities sufficiently to enable reuse of said one or more of the reclaimed components, (iii) and optionally, combining all or part of said reclaimed volume of components with at least one additional refrigerant composition or component.

59. A refrigeration, air-conditioning, or heat pump apparatus containing a composition as claimed in any one of claims 1-30, 40, 41, or 42.

60. The refrigeration, air-conditioning, or heat pump apparatus of claim comprising a mobile air-conditioning apparatus.

61. A method for early detection of a refrigerant leak in a refrigeration, air-conditioning or heat pump apparatus said method comprising using a non-azeotropic composition in said apparatus, and monitoring for a reduction in cooling performance.

62. A foam blowing agent comprising the composition of any of claims 1-30.

63. A method of forming a foam comprising:

(a) adding to a foamable composition the composition of any of claims 1-30; and

(b) reacting the foamable composition under conditions effective to form a foam.

64. A sprayable composition comprising the composition of any of claims 1-30.

65. A process for producing aerosol products comprising the step of adding a composition of any of claims 1-30 to active ingredients in an aerosol container, wherein said composition functions as a propellant.

66. A method of suppressing a flame comprising contacting the flame with a fluid comprising the composition of any of claims 1-30.

67. A method of extinguishing or suppressing a fire in a total-flood application comprising:

(a) providing an agent comprising the composition of any of claims 1-30;

(b) disposing the agent in a pressurized discharge system; and

(c) discharging the agent into an area to extinguish or suppress fires in that area.

68. A method of inerting an area to prevent a fire or explosion comprising:

(a) providing an agent comprising the composition of any of claims 1-30;

(b) disposing the agent in a pressurized discharge system; and

(c) discharging the agent into the area to prevent a fire or explosion from occurring.

CLAIMS

What is claimed is:

1. An azeotropic or near-azeotropic composition comprising HFC-1234yf and HFC-125.

2. The composition of claim 1 comprising a composition selected from the group consisting of:

about 1 weight percent to about 51 weight percent HFC-1234yf and about 99 weight percent to about 49 weight percent HFC-125;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent HFC-1234yf, and about 1 weight percent to about 10 weight percent isobutane;

about 80 weight percent to about 98 weight percent HFC-125, about 1 weight percent to about 19 weight percent HFC-1234yf, and about 1 weight percent to about 10 weight percent n-butane;

about 1 weight percent to about 60 weight percent HFC-1234yf, about 1 weight percent to about 98 weight percent HFC-125 and about 1 weight percent to about 98 weight percent HFC-143a; and

about 1 weight percent to about 40 weight percent HFC-1234yf, about 59 weight percent to about 98 weight percent HFC-125 and about 1 weight percent to about 20 weight percent isobutane.

3. The composition of claim 1 or 2 comprising an azeotropic composition selected from the group consisting of:

10.9 weight percent HFC-1234yf and 89.1 weight percent HFC-125 having a vapor pressure of about 40.7 psia (281 kPa) at a temperature of about -25 °C;

89.1 weight percent HFC-125, 9.7 weight percent HFC-1234yf and 1.2 weight percent isobutane having a vapor pressure of about 40.8 psia (281 kPa) at a temperature of about -25 °C; and

14.4 weight percent HFC-1234yf, 43.5 weight percent HFC-125 and 42.1 weight percent HFC-143a having a vapor pressure of about 38.6 psia (266 kPa) at a temperature of about -25 °C.

4. The composition as in any of claims 1-3, further comprising a lubricant selected from the group consisting of polyol esters, polyalkylene glycols, polyvinyl ethers, mineral oil, alkylbenzenes, synthetic paraffins, synthetic napthenes, and poly(alpha)olefins.

5. The composition as in any of claims 1-4, further comprising a tracer selected from the group consisting of hydrofluorocarbons, deuterated hydrocarbons, deuterated hydrofluorocarbons, perfluorocarbons, fluoroethers, brominated compounds, iodated compounds, alcohols, aldehydes, ketones, nitrous oxide (N_2O) and combinations thereof.

6. The composition as in any of claims 1-4, further comprising a compatibilizer selected from the group consisting of:

a) polyoxyalkylene glycol ethers represented by the formula $R^1[(OR^2)_xOR^3]_y$, wherein: x is an integer from 1 to 3; y is an integer from 1 to 4; R^1 is selected from hydrogen and aliphatic hydrocarbon radicals having 1 to 6 carbon atoms and y bonding sites; R^2 is selected from aliphatic hydrocarbylene radicals having from 2 to 4 carbon atoms; R^3 is selected from hydrogen, and aliphatic and alicyclic hydrocarbon radicals having from 1 to 6 carbon atoms; at least one of R^1 and R^3 is selected from said hydrocarbon radicals; and wherein said polyoxyalkylene glycol ethers have a molecular weight of from about 100 to about 300 atomic mass units;

b) amides represented by the formulae $R^1C(O)NR^2R^3$ and cyclo-[$R^4CON(R^5)$-], wherein R^1, R^2, R^3 and R^5 are independently selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms, and at most one aromatic radical having from 6 to 12 carbon atoms; R^4 is selected from aliphatic hydrocarbylene radicals having from 3 to 12 carbon atoms; and wherein said amides have a molecular weight of from about 100 to about 300 atomic mass units;

c) ketones represented by the formula $R^1C(O)R^2$, wherein R^1 and R^2 are independently selected from aliphatic, alicyclic and aryl hydrocarbon radicals having from 1 to 12 carbon atoms, and wherein said ketones have a molecular weight of from about 70 to about 300 atomic mass units;

d) nitriles represented by the formula R^1CN, wherein R^1 is selected from aliphatic, alicyclic or aryl hydrocarbon radicals having from 5 to 12 carbon atoms, and wherein said nitriles have a molecular weight of from about 90 to about 200 atomic mass units;

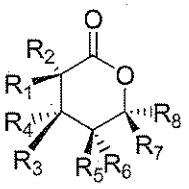
e) chlorocarbons represented by the formula RCl_x, wherein; x is 1 or 2; R is selected from aliphatic and alicyclic hydrocarbon radicals having from 1 to 12 carbon atoms; and wherein said chlorocarbons have a molecular weight of from about 100 to about 200 atomic mass units;

f) aryl ethers represented by the formula R^1OR^2, wherein: R^1 is selected from aryl hydrocarbon radicals having from 6 to 12 carbon atoms; R^2 is selected from aliphatic hydrocarbon radicals having from 1 to 4 carbon atoms; and wherein said aryl ethers have a molecular weight of from about 100 to about 150 atomic mass units;

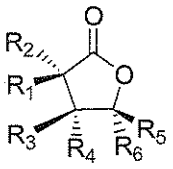
g) 1,1,1-trifluoroalkanes represented by the formula CF_3R^1, wherein R^1 is selected from aliphatic and alicyclic hydrocarbon radicals having from about 5 to about 15 carbon atoms;

h) fluoroethers represented by the formula $R^1OCF_2CF_2H$, wherein R^1 is selected from aliphatic, alicyclic, and aromatic hydrocarbon radicals having from about 5 to about 15 carbon atoms; or wherein said fluoroethers are derived from fluoroolefins and polyols, wherein said fluoroolefins are of the type $CF_2=CXY$, wherein X is hydrogen, chlorine or fluorine, and Y is chlorine, fluorine, CF_3 or OR_f, wherein R_f is CF_3, C_2F_5, or C_3F_7; and said polyols are linear or branched, wherein said linear polyols are of the type $HOCH_2(CHOH)_x(CRR')_yCH_2OH$, wherein R and R' are hydrogen, CH_3 or C_2H_5, x is an integer from 0-4, y is an integer from 0-3 and z is either zero or 1, and said branched polyols are of the type $C(OH)_t(R)_u(CH_2OH)_v[(CH_2)_mCH_2OH]_w$, wherein R may be hydrogen, CH_3 or C_2H_5, m is an integer from 0 to 3, t and u are 0 or 1, v and w are integers from 0 to 4, and also wherein t + u + v + w = 4; and

i) lactones represented by structures [B], [C], and [D]:



[B]



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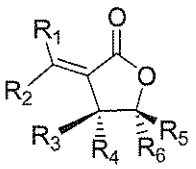

[D]

wherein, R_1 through R_8 are independently selected from hydrogen, linear, branched, cyclic, bicyclic, saturated and unsaturated hydrocarbyl radicals;

and the molecular weight is from about 100 to about 300 atomic mass units; and

j) esters represented by the general formula $R^1CO_2R^2$, wherein R^1 and R^2 are independently selected from linear and cyclic, saturated and unsaturated, alkyl and aryl radicals; and wherein said esters have a molecular weight of from about 80 to about 550 atomic mass units.

7. The composition any of claims 1-5, further comprising at least one ultra-violet fluorescent dye selected from the group consisting of naphthalimides, perylenes, coumarins, anthracenes, phenanthracenes, xanthenes, thioxanthenes, naphthoxanthenes, fluoresceins, derivatives of said dye and combinations thereof.

8. The composition of claim 7, further comprising at least one solubilizing agent selected from the group consisting of hydrocarbons, dimethylether, polyoxyalkylene glycol ethers, amides, ketones, nitriles, chlorocarbons, esters, lactones, aryl ethers, hydrofluoroethers, and 1,1,1-trifluoroalkanes.

9. The composition of any of claims 1-8, further comprising a stabilizer, water scavenger, or odor masking agent.

10. The composition of claim 9, wherein said stabilizer is selected from the group consisting of nitromethane, hindered phenols, hydroxylamines, thiols, phosphites and lactones.

11. A method of producing cooling, said method comprising: evaporating said composition of any of claims 1-3 in the vicinity of a body to be cooled and thereafter condensing said composition.

12. A method of producing heat, said method comprising: condensing said composition of any of claims 1-3 in the vicinity of a body to be heated and thereafter evaporating said composition.

13. A method for detecting the composition of any of claims 7-8 in a compression refrigeration, air conditioning, or heat pump apparatus, said method comprising providing said composition to said apparatus, and providing a suitable means for detecting said composition at a leak point or in the vicinity of said apparatus.

14. A method for improving oil-return to the compressor in a compression refrigeration, air-conditioning or heat pump apparatus, said method comprising using the composition of claim 6 in said apparatus.

15. A method for replacing a high GWP refrigerant in a refrigeration, air-conditioning, or heat pump apparatus, wherein said high GWP refrigerant is selected from the group consisting of R134a, R22, R123, R11, R245fa, R114, R236fa, R124, R12, R410A, R407C, R417A, R422A, R507A, R502, and R404A, said method comprising providing the composition of any of claims 1-3 to said refrigeration, air-conditioning, or heat pump apparatus that uses, used or is designed to use said high GWP refrigerant.

16. A method of using the composition of any of claims 1-3 as a heat transfer fluid composition, said process comprising comprises transporting said composition from a heat source to a heat sink.

17. A refrigeration, air-conditioning, or heat pump apparatus containing a composition as claimed in any one of claims 1-10.

18. The refrigeration, air-conditioning, or heat pump apparatus of claim 17 comprising a mobile air-conditioning apparatus.

19. A foam blowing agent comprising the composition of any of claims 1-3.

20. A method of forming a foam comprising:

(a) adding to a foamable composition the composition of any of claims 1-3; and

(b) reacting the foamable composition under conditions effective to form a foam.

21. A sprayable composition comprising the composition of any of claims 1-3.

22. A process for producing aerosol products comprising the step of adding a composition of any of claims 1-3 to active ingredients in an aerosol container, wherein said composition functions as a propellant.