WHAT IS CLAIMED IS:

1. A composition, comprising:

i) neopentane; and

ii) ~~a compound selected from E-1,1,1,4,4,4-hexafluoro-2-butene and Z-~~1,1,1,4,4,4-hexafluoro-2-butene,

wherein the ~~E-1,1,1,4,4,4-hexafluoro-2-butene or~~ Z-1,1,1,4,4,4-hexafluoro-2-butene is present in the composition in an amount effective to form an azeotrope composition or an azeotrope-like composition with the neopentane.

~~2. The composition of claim 1, wherein the composition comprises neopentane and E-1,1,1,4,4,4-hexafluoro-2-butene, wherein the E-1,1,1,4,4,4-hexafluoro-2-butene is present in the composition in an amount effective to form an azeotrope composition or an azeotrope-like composition with the neopentane.~~

~~3. The composition of claim 2, wherein the composition comprises from about 40 to about 60 mol% neopentane and about 60 to about 40 mol% E-1,1,1,4,4,4-hexafluoro-2-butene.~~

~~4. The composition of claim 3, which has a boiling point of from about -40°C to about 120°C at a pressure of from about 2 psi to about 390 psi.~~

~~5. The composition of claim 4, which is an azeotrope composition.~~

~~6. The composition of claim 2, wherein the composition comprises from about 40 to about 50 mol% neopentane and about 60 to about 50 mol% E-1,1,1,4,4,4-hexafluoro-2-butene.~~

~~7. The composition of claim 6, which has a boiling point of from about 0.9°C to about 128°C at a pressure of from about 1 atm to about 30 atm.~~

~~8. The composition of claim 7, which is an azeotrope composition.~~

~~9. The composition of claim 2, wherein the composition comprises from about 98.4 to about 99.8 mol% neopentane and about 1.6 to about 0.2 mol% E-1,1,1,4,4,4-hexafluoro-2-butene.~~

~~10. The composition of claim 9, which has a boiling point of from about 8.3°C to about 9.3°C at a pressure of about 1 atm.~~

~~11. The composition of claim 10, which is an azeotrope-like composition.~~

~~12. The composition of claim 2, wherein the composition comprises from about 38.4 to about 62.6 mol% neopentane and about 65.2 to about 37.4 mol% E-1,1,1,4,4,4-hexafluoro-2-butene.~~

~~13. The composition of claim 12, which has a boiling point of from about 0.9°C to about 1.2°C at a pressure of about 1 atm.~~

~~14. The composition of claim 13, which is an azeotrope-like composition.~~

~~15. The composition of claim 2, wherein the composition comprises from about 0.2 to about 2.8 mol% neopentane and about 99.8 to about 97.2 mol% E-1,1,1,4,4,4-hexafluoro-2-butene.~~

~~16. The composition of claim 15, which has a boiling point of from about 6.3°C to about 7.4°C at a pressure of about 1 atm.~~

~~17. The composition of claim 16, which is an azeotrope-like composition.~~

~~18. The composition of claim 2, wherein the composition comprises:~~

~~from about 99.8 to about 98.2 mol% neopentane and about 0.2 to about 1.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 71.6 to about 47.6 mol% neopentane and about 28.4 to about 52.4 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 1.2 to about 0.2 mol% neopentane and about 98.8 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 99.8 to about 98.4 mol% neopentane and about 0.2 to about 1.6 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 66.6 to about 40.8 mol% neopentane and about 33.4 to about 59.2 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 1.8 to about 0.2 mol% neopentane and about 98.2 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 62.8 to about 35.2 mol% neopentane and about 37.2 to about 64.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 2.6 to about 0.2 mol% neopentane and about 97.4 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 59.8 to about 30.2 mol% neopentane and about 40.2 to about 69.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 3.4 to about 0.2 mol% neopentane and about 96.6 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 58.4 to about 28.2 mol% neopentane and about 41.6 to about 71.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 3.8 to about 0.2 mol% neopentane and about 96.2 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 57.2 to about 26.4 mol% neopentane and about 42.8 to about 73.6 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 4.4 to about 0.2 mol% neopentane and about 95.6 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 55.4 to about 23.6 mol% neopentane and about 44.6 to about 76.4 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~

~~from about 5.2 to about 99.1 mol% neopentane and about 94.8 to about 0.9 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 99.8 to about 98.6 mol% neopentane and about 0.2 to about 1.4 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 53.8 to about 23.2 mol% neopentane and about 46.2 to about 76.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 5.4 to about 0.2 mol% neopentane and about 94.6 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 56 to about 24.4 mol% neopentane and about 44.0 to about 75.6 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 4.6 to about 0.2 mol% neopentane and about 95.4 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 57.2 to about 3.8 mol% neopentane and about 42.8 to about 96.2 mol% E-1,1,1,4,4,4-hexafluoro-2-butene; or~~
~~from about 2.6 to about 0.2 mol% neopentane and about 97.4 to about 99.8 mol% E-1,1,1,4,4,4-hexafluoro-2-butene.~~

~~19. The composition of claim 18, which has a boiling point of from about -20°C to about 120°C at a pressure of about 1 atm.~~

~~20. The composition of claim 19, which is an azeotrope-like composition.~~

~~21. The composition of claim 1, wherein the composition comprises neopentane and Z-1,1,1,4,4,4-hexafluoro-2-butene, wherein the Z-1,1,1,4,4,4-hexafluoro-2-butene is present in the composition in an amount effective to form an azeotrope composition or an azeotrope-like composition with the neopentane.~~

~~22.~~2. The composition of claim ~~21~~1, wherein the composition comprises from ~~about~~ 60 to ~~about~~ 93 mol% neopentane and ~~about~~ 40 to ~~about~~ 7 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene.

~~23.~~ 3. The composition of claim ~~22~~2, which has a boiling point of from ~~about~~ -40°C to ~~about~~ 120°C at a pressure of from ~~about~~ 1.5 psi to ~~about~~ 310 psi.

~~24.~~ 4. The composition of claim ~~23~~3, which is an azeotrope composition.

~~25.~~ 5. The composition of claim ~~21~~1, wherein the composition comprises from ~~about~~ 56 to ~~about~~ 83 mol% neopentane and ~~about~~ 44 to ~~about~~ 17 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene.

~~26.~~ 6. The composition of claim ~~25~~5, which has a boiling point of from ~~about~~ 5°C to ~~about~~ 145°C at a pressure of from ~~about~~ 1 atm to ~~about~~ 30 atm.

~~27.~~ 7. The composition of claim ~~26~~6, which is an azeotrope composition.

~~28.~~ 8. The composition of claim ~~21~~1, wherein the composition comprises from ~~about~~ 99.6 to ~~about~~ 79.2 mol% neopentane and ~~about~~ 0.4 to ~~about~~ 20.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene.

~~29.~~ 9. The composition of claim ~~28~~8, which has a boiling point of from ~~about~~ 7.8°C to ~~about~~ 9.4°C at a pressure of ~~about~~ 1 atm.

~~30.~~ 10. The composition of claim ~~29~~9, which is an azeotrope-like composition.

~~31.~~ 11. ~~———~~The composition of claim ~~21~~1, wherein the composition comprises from ~~about~~ 3.2 to ~~about~~ 1.6 mol% neopentane and ~~about~~ 96.8 to ~~about~~ 98.4 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene.

~~32.~~ 12. The composition of claim ~~31~~11, which has a boiling point of from ~~about~~ 32.6°C to ~~about~~ 33.0°C at a pressure of ~~about~~ 1 atm.

~~33.~~ 13. The composition of claim ~~32~~12, which is an azeotrope-like composition.

~~34.~~ 14. The composition of claim ~~21~~1, wherein the composition comprises:

from ~~about~~ 99.8 to ~~about~~ 85.2 mol% neopentane and ~~about~~ 0.2 to ~~about~~ 14.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 80.8 mol% neopentane and about 0.2 to about 19.2 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 76.2 mol% neopentane and about 0.2 to about 23.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 61.8 mol% neopentane and about 0.2 to about 38.2 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 0.4 to about 0.2 mol% neopentane and about 99.6 to about 99.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 69.8 mol% neopentane and about 0.2 to about 30.2 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 67.6 mol% neopentane and about 0.2 to about 32.4 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 95.0 mol% neopentane and about 0.2 to about 5 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 86.4 to about 63.6 mol% neopentane and about 13.6 to about 36.4 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 0.4 to about 0.2 mol% neopentane and about 99.6 to about 99.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 96.6 mol% neopentane and about 0.2 to about 3.4 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 80.6 to about 59.6 mol% neopentane and about 19.4 to about 40.4 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 97.6 mol% neopentane and about 0.2 to about 2.4 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 74.2 to about 56.0 mol% neopentane and about 25.8 to about 44.0 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 0.2 to about 0.8 mol% neopentane and about 99.2 to about 99.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 99.8 to about 98.2 mol% neopentane and about 0.2 to about 1.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from about 76.6 to about 50.0 mol% neopentane and about 23.4 to about 50.0 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene; or

from ~~about~~ 1.0 to ~~about~~ 0.2 mol% neopentane and ~~about~~ 99.0 to ~~about~~ 99.8 mol% Z-1,1,1,4,4,4-hexafluoro-2-butene.

~~35.~~ 15. The composition of claim ~~34~~14, which has a boiling point of from ~~about~~ -20°C to ~~about~~ 120°C at a pressure of ~~about~~ 1 atm.

~~36.~~ 16. The composition of claim ~~35~~15, which is an azeotrope-like composition.