CLAIMS

What is claimed is:

1. A hydrofluoroolefin working fluid useful in immersion cooling, comprising:

a dielectric fluid selected from the group consisting of E-HFO-153-10mczz, E-HFO-153-10mzzy, and combinations thereof; and

at least one of water and a plasticizer or plasticizer mixture dissolved within the dielectric fluid, wherein the dissolved water, if present, is at a concentration of from about 10 ppm to about 145 ppm and the dissolved plasticizer or plasticizer mixture, if present, is at a concentration of from about 10 to about 7341 ppm.

2. The hydrofluoroolefin working fluid of claim 1,
wherein the dielectric fluid consists of E-HFO-153-10mczz.

3. The hydrofluoroolefin working fluid of claim 1 or claim 2, wherein the dissolved plasticizer or plasticizer mixture is present in said working fluid and is one or more of bis(2-ethylhexyl) terephthalate, tris(2-ethylhexyl) trimellitate, diisononylphthalate, diisodecylphthalate, and bis-2-ethylhexylphthalate.

4. The hydrofluoroolefin working fluid of any one of claims 1-3, wherein said dissolved plasticizer or plasticizer mixture is present in said working fluid and is at a concentration of about 10 to about 2000 ppm.

5. The hydrofluoroolefin working fluid of any one of claims 1-4, wherein said dissolved plasticizer or plasticizer mixture is present in said working fluid and is at a concentration of about 10 to about 1000 ppm.

6. The hydrofluoroolefin working fluid of any one of claims 1-5, wherein said dissolved water is present in said working fluid and is at a concentration of from about 10 ppm to about 100 ppm.

7. The hydrofluoroolefin working fluid of any one of claims 1-6, wherein said dissolved plasticizer or plasticizer mixture is present in said working fluid and is at a concentration of about 10 to about 50 ppm.

8. The hydrofluoroolefin working fluid of any one of claims 1-7, wherein a dielectric constant of the working fluid is less than about 2.0.

9. The hydrofluoroolefin working fluid of any one of claims 1-7, wherein a dielectric constant of the working fluid is less than about 1.8.

10. The hydrofluoroolefin working fluid of any one of claims 1-9, wherein the working fluid has a dissipation factor at 20 GHz of less than about 8.0E-03.

11. The hydrofluoroolefin working fluid of any one of claims 1-9, wherein the working fluid has a dissipation factor at 20 GHz of less than about 2.5E-03.

12. An immersion cooling unit comprising:

an immersion cell, defining an internal cavity;

an electrical component in the internal cavity;

a working fluid partially filling the internal cavity; and

a condenser positioned in the internal cavity above the working fluid, wherein the working fluid at least partially immerses the electrical component and the working fluid is the hydrofluoroolefin working fluid of any one of claims 1-11.