WHAT IS CLAIMED IS:

1. A heat transfer mixture comprising a nanofluid, the nanofluid consisting of propylene glycol, water, a nanapowder, a surfactant, a base additive, an acid additive and a corrosive inhibitor, the heat transfer mixture being representative by the formula:

$$1 = Vpg/Vnf + Vw/Vnf + Vpw/Vnf + Vsf/Vnf + Vbs/Vnf + Vac/Vnf + Vci/Vnf,$$

wherein Vnf is a volume of the nanofluid,

wherein Vpg is a volume of the propylene glycol,

wherein Vw is a volume of the water,

wherein Vpw is a volume of the nanopowder,

wherein Vsf is a volume of the surfactant,

wherein Vbs is a volume of the base additive,

wherein Vac is a volume of the acid additive,

wherein Vci is a volume of the corrosive inhibitor, and

wherein the nanopowder consists of aluminum oxide having a particle size between 100 nanometers and 600 nanometers.

2. The heat transfer mixture recited in claim 1, wherein $29.3\% < Vpg/Vnf < 48.8\%$.

3. The heat transfer mixture recited in claim 1, wherein $35.4\% < Vw/Vnf < 68.3\%$.

4. The heat transfer mixture recited in claim 1, wherein $1\% < VNP/Vnf < 20\%$.

5. The heat transfer mixture recited in claim 1, wherein $0.12\% < Vsf/Vnf < 2.34\%$.

6. The heat transfer mixture recited in claim 1, wherein 1.3% < Vbs/Vnf < 6.8%.

7. The heat transfer mixture recited in claim 1, wherein 1.3%< Vac/Vnf < 6.8%.

8. The heat transfer mixture recited in claim 1, wherein 0.02% < Vci/Vnf < 0.1%.

9. The heat transfer mixture recited in claim 1, wherein:

29.3%< Vpg/Vnf <48.8%;

35.4%< Vw/Vnf <68.3%;

1%< VNP/Vnf <20%;

0.12%< Vsf/Vnf <2.34%;

0%< Vbs/Vnf <6.8%;

0%< Vac/Vnf <6.8%; and

0.02%< Vci/Vnf <0.1%.

10. The heat transfer mixture recited in claim 1, wherein:

29.3%< Vpg/Vnf <48.8%;

35.4%< Vw/Vnf <68.3%;

1%< VNP/Vnf <20%;

0.12%< Vsf/Vnf <2.34%;

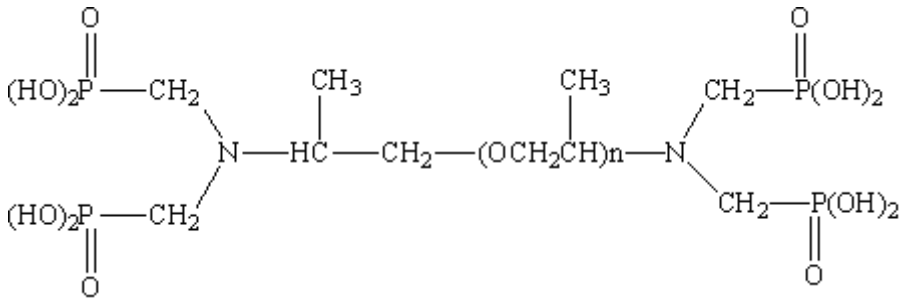
0%< Vbs/Vnf <6.8%;

0%< Vac/Vnf <6.8%; and

0%< Vci/Vnf <0.1%.

11. The heat transfer mixture recited in claim 1, wherein the surfactant is a sodium salt solution of polyamino-polyether-methylene-phosphonic acid.

12. The heat transfer mixture recited in claim 1, wherein the surfactant is represented by the formula:



13. The heat transfer mixture recited in claim 1, wherein the heat transfer mixture has a pH of 8.5 - 12.0.

14. The heat transfer mixture recited in claim 13, wherein the heat transfer mixture has a pH of 10.0.

15. A heat transfer mixture comprising:

propylene glycol;

water;

a nanopowder consisting of Al_2O_3;

a surfactant;

a base additive;

an acid additive; and

a corrosive inhibitor,

wherein the nanopowder has a particle size between 100 nanometers and 600 nanometers,

wherein the heat transfer mixture comprises between 1% by volume and 20%

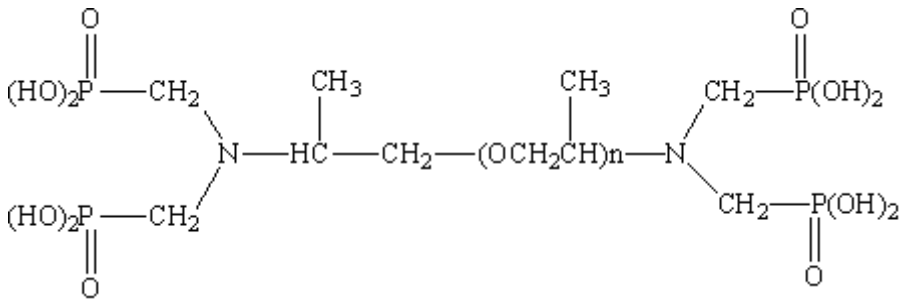
by volume of the nanopowder,

wherein the heat transfer mixture comprises between 0.1% by volume and 3% by volume of the surfactant, and

wherein the heat transfer mixture has a pH greater than 8.5.

16. The heat transfer mixture recited in claim 15, wherein the surfactant is a sodium salt solution of polyamino polyether methylene phosphonic acid.

17. The heat transfer mixture recited in claim 15, wherein the surfactant is represented by the formula:



18. A heat transfer mixture comprising:

between t 5% by volume and 75% by volume of propylene glycol;

between 15% by volume and 70% by volume of water;

between 1.0% by volume and 20% by volume of a nanopowder consisting of Al_2O_3;

between 0.1% by volume and 3% by volume of a surfactant;

between 0% by volume and 10% by volume of a base additive;

between 0% by volume and 10% by volume of an acid additive; and

between 0.001% by volume and 1.0% by volume of a corrosive inhibitor,

wherein the nanopowder has a particle size between 100 nanometers and 600 nanometers, and

wherein the heat transfer mixture has a pH of about 10.0.