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 represented by the formula:

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

wherein Vnf is a volume of athe nanofluid,

wherein Vpg is a volume of the propylene glycol,

wherein Vw is a volume of the water,

wherein Vpw is a volume of a the nanopowder,

wherein Vsf is a volume of athe surfactant,

wherein Vbs is a volume of athe base additive,

wherein Vac is a volume of anthe acid additive, and

wherein Vci is a volume of athe 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%;

~~1.30~~%< Vbs/Vnf <6.8%;

~~1.30~~%< 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

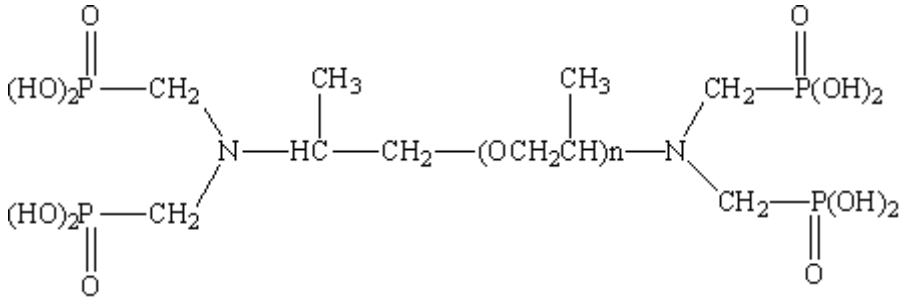
0%< Vci/Vnf <0.1%.

~~11. The heat transfer mixture recited in claim 1, wherein the nanopowder is aluminum oxide.~~

~~12. The heat transfer mixture recited in claim 1, wherein the nanopowder is aluminum oxide in a range between 100 nanometers and 600 nanometers.~~

~~13~~11. The heat transfer mixture recited in claim 1, wherein the surfactant is a sodium salt solution of polyamino-polyether-methylene-phosphonic acid.

~~14~~12. The heat transfer mixture recited in claim 1, wherein the surfactant is represented by the formula:



~~15~~13. The heat transfer mixture recited in claim 1, wherein the heat transfer mixture has a pH of ~~about~~ 8.5 - 12.0.

~~16~~14. The heat transfer mixture recited in claim ~~15~~13, wherein the heat transfer mixture has a pH of 10.0.

~~17~~15. A heat transfer mixture comprising:

propylene glycol;

water;

a nanopowder ~~comprising~~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 ~~about~~ 100 nanometers and ~~about~~ 600 nanometers,

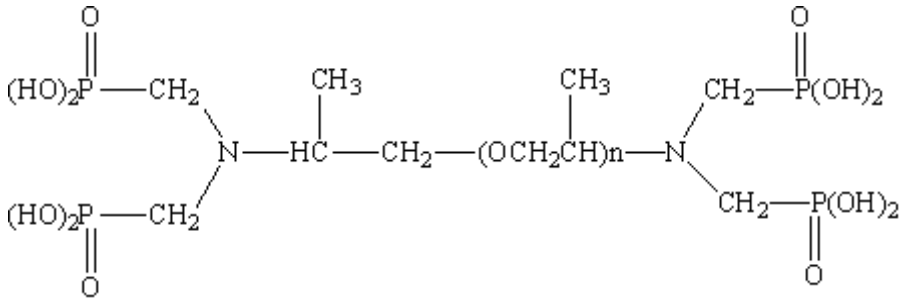
wherein the heat transfer mixture comprises between ~~about~~ 1% by volume and ~~about~~ 20% by volume of the nanopowder,

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

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

~~18~~16. The heat transfer mixture recited in claim ~~17~~15, wherein the surfactant is a sodium salt solution of polyamino polyether methylene phosphonic acid.

~~19~~17. The heat transfer mixture recited in claim ~~17~~15, wherein the surfactant is represented by the formula:



~~20~~18. A heat transfer mixture comprising:

between ~~about~~ 5% by volume and ~~about~~ 75% by volume of propylene glycol;

between ~~about 30~~15% by volume and ~~about~~ 70% by volume of water;

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

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

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

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

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

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

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