WHAT IS CLAIMED IS:

1. A heat transfer mixture represented by the formula:

$$1 = Vpg/Vnf + Vw/Vnf + Vpw/Vnf + Vsf/Vnf + Vbs/Vnf$$

wherein Vnf is a volume of a nanofluid,
wherein Vpg is a volume of propylene glycol,
wherein Vw is a volume of water,
wherein Vpw is a volume of a nanopowder,
wherein Vsf is a volume of a surfactant, and
wherein Vbs is a volume of a base additive.

2. The heat transfer mixture recited in claim 1, wherein
5% ⟨ Vpg/Vnf ⟨ 75%,
5% ⟨ Vw/Vnf ⟨ 94%,
0.1% ⟨ VNP/Vnf ⟨ 20%,
0.01% ⟨ Vsf/Vnf ⟨ 3%, or
0.1% ⟨ Vbs/Vnf ⟨10%.

3. The heat transfer mixture recited in claim 1, wherein:
5% ⟨ Vpg/Vnf ⟨ 75%;
5% ⟨ Vw/Vnf ⟨ 94%;
0.1% ⟨ VNP/Vnf ⟨20%;
0.01% ⟨ Vsf/Vnf ⟨ 3%; and
0.1% ⟨ Vbs/Vnf ⟨ 10%.

4. A heat transfer mixture comprising:
propylene glycol;
water;
a nanopowder comprising Al_2O_3;
a surfactant; and
a base additive,
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,

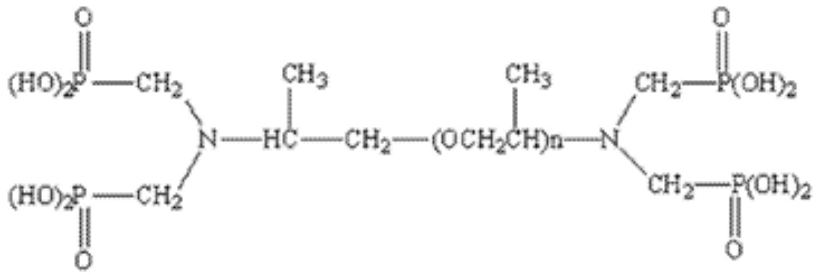
wherein the heat transfer mixture comprises between about .010% by volume and about 3% by volume of the surfactant, and

wherein the heat transfer mixture has a pH is between about 8.5. to about 12.

5. The heat transfer mixture recited in claim 4,

wherein the surfactant is a sodium salt solution of polyamino polyether methylene phosphonic acid, or

wherein the surfactant is represented by the formula:



6. A heat transfer mixture comprising:

between about 5% by volume and about 70% by volume of propylene glycol;

between about 5% by volume and about 94% by volume of water;

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

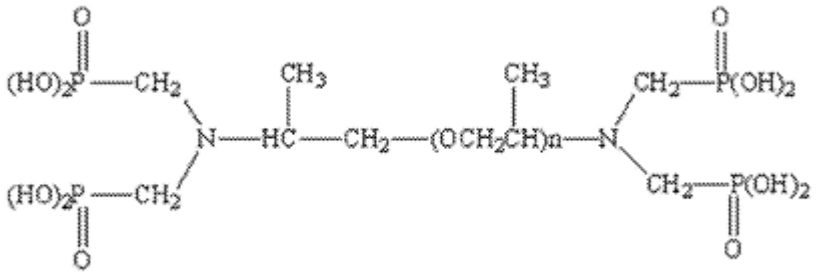
between about 0.01% by volume and about 3% by volume of a surfactant; and

between about 1.0% by volume and about 10% by volume of a base additive,

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.

7. The heat transfer mixture recited in claim 6, wherein the surfactant is represented by the formula:



8. A heat transfer mixture represented by the formula:

1 = Veg/Vnf + Vw/Vnf + Vpw/Vnf + Vsf/Vnf + Vbs/Vnf + Vac/Vnf + Vci/Vnf,
wherein Vnf is a volume of a nanofluid,
wherein Veg is a volume of ethylene glycol,
wherein Vw is a volume of water,
wherein Vpw is a volume of a nanopowder,
wherein Vsf is a volume of a surfactant,
wherein Vbs is a volume of a base additive,
wherein Vac is a volume of an acid additive, and
wherein Vci is a volume of a corrosive inhibitor.

9. The heat transfer mixture recited in claim 8,
wherein 30.0% ⟨ Veg/Vnf ⟨ 50.0%,
wherein 50.0% ⟨ Vw/Vnf ⟨ 70.0%,
wherein 1 % ⟨ VNP/Vnf ⟨3.0%,
wherein 0.12% ⟨ Vsf/Vnf ⟨ 0.40,
wherein 1.3% ⟨ Vbs/Vnf ⟨ 2.0%,
0.0 ⟨ Vac/Vnf ⟨ 2.0, or
wherein 0.012 ⟨ Vci/Vnf ⟨ 0.1.

10. The heat transfer mixture recited in claim 8, wherein:
30%⟨ Veg/Vnf ⟨50.0%;
50.0%⟨ Vw/Vnf ⟨70.0%;
1%⟨ VNP/Vnf ⟨3.0%;
0.12%⟨ Vsf/Vnf ⟨0.40%;

1 3%⟨ Vbs/Vnf ⟨2.0%;

0.0⟨ Vac/Vnf ⟨2.08; and

0.02⟨ Vci/Vnf ⟨0.1.

11. The heat transfer mixture recited in claim 8, wherein:

35.0%⟨ Veg/Vnf ⟨45.0%;

55.0%⟨ Vw/Vnf ⟨65.0%;

1%⟨ VNP/Vnf ⟨2.0%;

0.12%⟨ Vsf/Vnf ⟨0.40%;

13%⟨ Vbs/Vnf ⟨6.8%;

0⟨ Vac/Vnf ⟨2.0; and

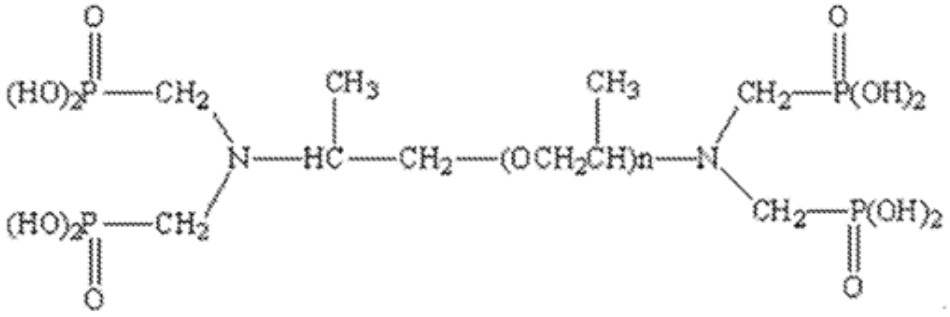
0.02⟨ Vci/Vnf ⟨0.1.

12. The heat transfer mixture recited in claim 8,

wherein the nanopowder is aluminum oxidewherein the nanopowder is aluminum oxide in a range between 100 nanometers and 600 nanometers,

wherein the surfactant is a sodium salt solution of polyamino polyether methylene phosphonic acid,

wherein the surfactant is represented by the formula:



,

wherein the heat transfer mixture has a pH of between about 8.5-12.0, or

wherein the heat transfer mixture has a pH of 10.0.

13. A heat transfer mixture comprising:

ethylene glycol;

water;

a nanopowder comprising Al_2O_3;

a surfactant;

a base additive;

an acid additive; and

a corrosive inhibitor,

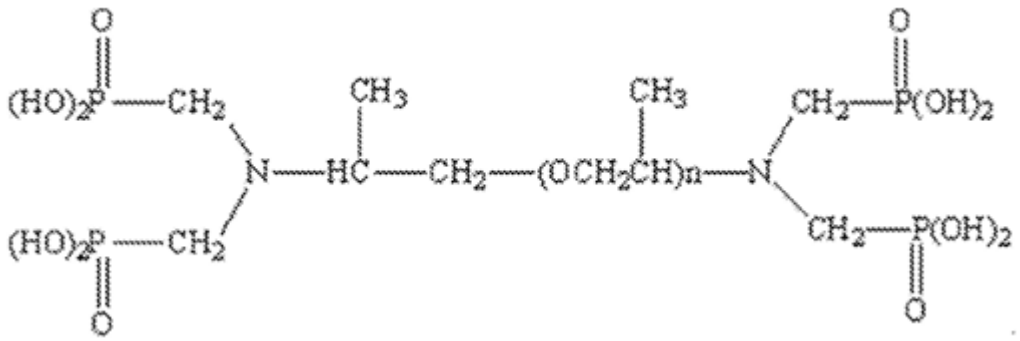
wherein the nanopowder has a particle size between about 100 nanometers and about 600 nanometers,

wherein the heat transfer mixture comprises between about 10% by volume and about 20% by volume of the nanopowder,

wherein the heat transfer mixture comprises between about 0.4% by volume and about 3% by volume of the surfactant, and

wherein the heat transfer mixture has a pH is between about 8.5 to about 12.0

14. The heat transfer mixture recited in claim 13, wherein the surfactant is a sodium salt solution of polyamino-polyether-methylene-phosphonic acid, or wherein the surfactant is represented by the formula:



15. A heat transfer mixture comprising:

between about 5% by volume and about 70% by volume of ethylene glycol;

between about 5% by volume and about 94% by volume of water;

between about 1.0% by volume and about 20% by volume of a nanopowder comprising AI2O3;

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

between about 1.0% by volume and about 10% by volume of a base additive;

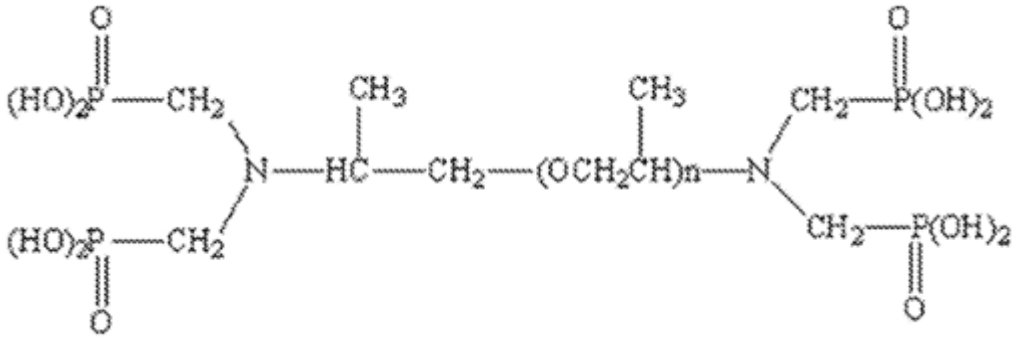
between about 0% by volume and about 6.8% by volume of an acid additive; and

between about 0.12% by volume and about 0.10% 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.

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



17. A heat transfer mixture represented by the formula:
1 = Veg/Vnf + Vw/Vnf + Vpw/Vnf + Vsf/Vnf + Vac/Vnf
wherein Vnf is a volume of a nanofluid,
wherein Veg is a volume of ethylene glycol,
wherein Vw is a volume of water,
wherein Vpw is a volume of a nanopowder,
wherein Vsf is a volume of a surfactant, and
wherein Vac is a volume of an acid additive.

18. The heat transfer mixture recited in claim 17,
wherein 25% ⟨ Veg/Vnf ⟨ 50%,
wherein 30% ⟨ Vw/Vnf ⟨ 70%,
wherein 0.1% ⟨ VNP/Vnf ⟨ 20%,
wherein 0.01% ⟨ Vsf/Vnf ⟨ 3%, or
wherein 0% ⟨ Vac/Vnf ⟨ 10%.

19. The heat transfer mixture recited in claim 17, wherein:
25% ⟨ Veg/Vnf ⟨ 50%;
30% ⟨ Vw/Vnf ⟨ 70%;
0.1% ⟨ VNP/Vnf ⟨ 30%;
0.01% ⟨ Vsf/Vnf ⟨ 5%; and
0% ⟨ Vac/Vnf ⟨ 10%.

20. A heat transfer mixture comprising:
ethylene glycol;
water;

a nanopowder comprising Al_2O_3;

a surfactant; and an acid additive,

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

wherein the heat transfer mixture comprises between about 10% by volume and about 20% by volume of the nanopowder,

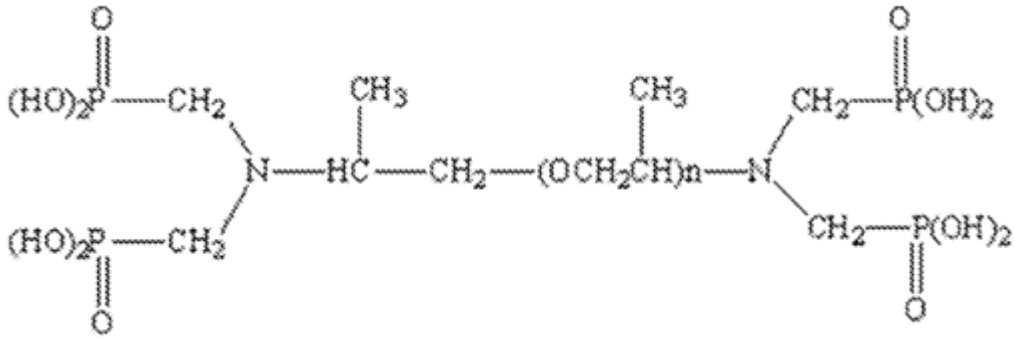
wherein the heat transfer mixture comprises between 0.1% about by volume and 3% by volume of the surfactant, and

wherein the heat transfer mixture has a pH of about 8.5 to about 12.0.

21. The heat transfer mixture recited in claim 20,

wherein the surfactant is a sodium salt solution of polyamino polyether methylene phosphonic acid, or

wherein the surfactant is represented by the formula:



22. A heat transfer mixture comprising:

between about 30% by volume and about 50% by volume of ethylene glycol;

between about 50% by volume and about 70% by volume of water;

between about 1.0% by volume and about 3.0% by volume of a nanopowder comprising Al_2O_3;

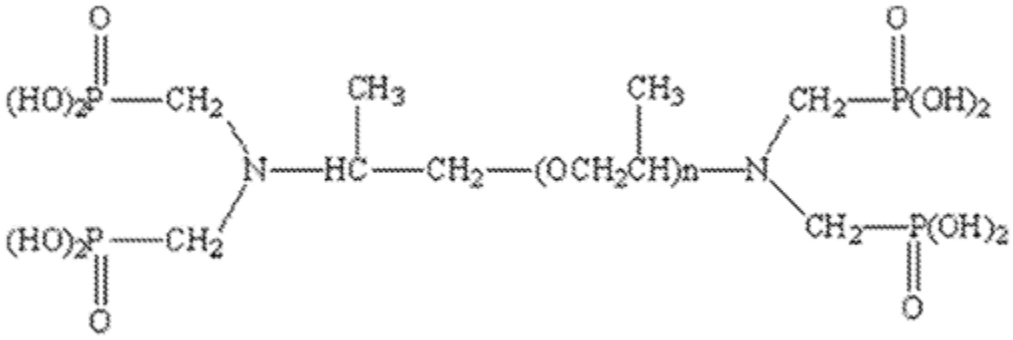
between about 0.1% by volume and about 0.4% by volume of a surfactant; and

between about 0% by volume and about 2.0% by volume of an acid additive,

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.

23. The heat transfer mixture recited in claim 22, wherein the surfactant is represented by the formula:



24. A heat transfer mixture represented by the formula:

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

wherein Vnf is a volume of a nanofluid,

wherein Vw is a volume of water,

wherein Vpw is a volume of a nanopowder,

wherein Vsf is a volume of a surfactant,

wherein Vbs is a volume of a base additive,

wherein Vac is a volume of an acid additive, and

wherein Vci is a volume of a corrosive inhibitor.

25. The heat transfer mixture recited in claim 24, wherein the surfactant is HEDP / PBTC / PCA - etidronic acid / phosphonobutane-tricarboxylic acid / phosphino-carboxylic acid.