CLAIMS

1. A method of preparing a gelled fluid, the method comprising:

combining an aluminum crosslinking compound and a first volume of a gellable organic solvent to form a pre-solvation mixture, the gellable organic solvent chosen from the group consisting of diesel oil, crude oil, kerosene, paraffinic oil, refined oil, mineral oil, shale oil, liquefied natural gas, vegetable oil, animal oil or a combination thereof;

gelling the pre-solvation mixture to form a pre-solvated gel;

combining the pre-solvated gel with a formulation fluid to form a gellable mixture, the formulation fluid comprising a second volume of the gellable organic solvent; and

gelling the gellable mixture to form the gelled fluid.

2. The method of claim 1, in which the aluminum crosslinking compound comprises aluminum octoate.

3. The method of claim 1, in which the gellable organic solvent is a hydrocarbon liquid that forms crosslinked gel with the aluminum crosslinking compound.

4. The method of any one of claims 1 to 3, further comprising adding a mutual solvent chosen from glycols, glycol ethers, or combinations thereof to the first volume of the organic solvent.

5. The method of claim 4, in which the mutual solvent is chosen from ethylene glycol, propylene glycol, ethylene glycol mono-butyl ether, 2-butoxyethanol, propylene glycol n-butyl ether, diethylene glycol butyl ether, ethylene glycol monoacetate, butyl carbitol, triethylene glycol monoethyl ether, 1,1'-oxybis(2-propanol), triethylene glycol monomethyl ether, or combinations thereof.

6. The method of claim 1, in which gelling the pre-solvation mixture comprises solvating the aluminum alkanoate compound in the pre-solvation mixture.

7. The method of claim 6, in which solvating the aluminum alkanoate compound in the pre-solvation mixture comprises heating the pre-solvation mixture until the gelled fluid is formed, or mixing the pre-solvation mixture until the gelled fluid is formed, or heating and mixing the pre-solvation mixture until the gelled fluid is formed.

8. The method of any one of claims 1 to 3 or 5 to 7 in which the formulation fluid further comprises a phosphate ester, an iron (III) crosslinking compound, an aluminum crosslinking compound, or a combination thereof.

9. The method of claim 1, further comprising, before gelling the gellable mixture, adding at least one additional gel-forming compound to the formulation fluid or the gellable mixture, the at least one additional gel-forming compound being chosen from phosphate esters, iron (III) crosslinking compounds, aluminum crosslinking compounds, or a combination thereof.

10. The method of claim 9, in which adding additional gel-forming compounds to the gellable mixture comprises:

adding from 0.1 to 20% by weight of the phosphate ester of the gellable organic solvent in the gellable mixture; or

adding from 0.1 to 20% by weight of the iron (III) crosslinking compound of the gellable organic solvent in the gellable mixture; or

adding from 0.1 to 20% by weight of the aluminum crosslinking compounds of the gellable organic solvent in the gellable mixture; or

a combination thereof.

11. The method of any one of claims 1 to 3, 5 to 7, 9 or 10, further comprising adding unsolvated aluminum alkanoate to the gellable mixture before gelling the gellable mixture.

12. The method of claim 1, wherein the gelled fluid comprises from 0.1% by weight to 20% by weight aluminum alkanoate, based on the total weight of the gelled fluid.

13. A gelled fluid comprising:

a gellable organic solvent chosen from the group consisting of diesel oil, crude oil, kerosene, paraffinic oil, refined oil, mineral oil, shale oil, liquefied natural gas, vegetable oil, animal oil or a combination thereof;

from 0.1% to 20% by weight, based on the total weight of the gelled fluid, of an aluminum alkanoate crosslinking compound; and

from 0.1% to 5% by weight, based on the total weight of the gelled fluid, of a mutual solvent chosen from glycols, glycol ethers, or combinations thereof.

14. The gelled fluid of claim 13, in which the mutual solvent is chosen from ethylene glycol, propylene glycol, ethylene glycol mono-butyl ether, 2-butoxyethanol, propylene glycol n-butyl ether, diethylene glycol butyl ether, ethylene glycol monoacetate, butyl carbitol, triethylene glycol monoethyl ether, 1,1'-oxybis(2-propanol), triethylene glycol monomethyl ether, or combinations thereof.

15. The gelled fluid of claim 13 or 14, in which the mutual solvent comprises 2-butoxyethanol; and

the aluminum alkanoate crosslinking compound is aluminum octoate.