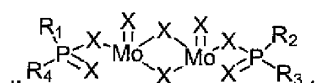


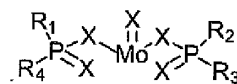
## WHAT IS CLAIMED IS:

1. A method of inhibiting corrosion comprising:

introducing into a fluid source containing corrodents at least one molybdenum-containing complex having the formula selected from Formula I, II, III, or IV.

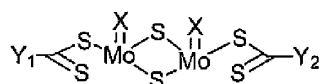


Formula I

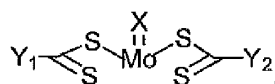


Formula II

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub>, are each a hydrocarbon group and wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> can be the same or different; and X is oxygen or sulfur and X can be the same or different.



Formula III



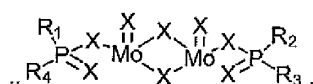
Formula IV

wherein Y<sup>1</sup> and Y<sup>2</sup> are each oxygen, nitrogen or carbon-containing ligands and Y<sup>1</sup> and Y<sup>2</sup> can be the same or different and X is each oxygen or sulfur, and X can be the same or different from each other.

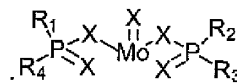
2. The method of claim 1, wherein the introducing is by injecting or pumping.
3. The method as in one of claims 1-2, wherein the fluid source contacts a metal containment.
4. The method as in one of claims 1-3, wherein the fluid source is in contact with distillation columns, strippers, trays, or piping.
5. The method as in one of claims 1-4, wherein the fluid source comprises at least a liquid hydrocarbon fraction.
6. The method of claim 5, wherein the hydrocarbon fraction is a distillate.

7. The method as in one of claims 1-6, wherein the corrodents comprise at least naphthenic acid, sulfur or combinations thereof.
8. The method as in one of claims 1-7, wherein the fluid source comprises a TAN of 0.2 to 20.
9. The method as in one of claims 1-8, wherein the fluid source temperature is about 175°C to 600°C.
10. The method as in one of claims 1-9, wherein the molybdenum-containing complex is added to the fluid source from 1 ppm to 3,000 ppm.
11. The method as in one of claims 1-10, wherein the molybdenum-containing complex further comprises one or more, asphaltene inhibitors, paraffin inhibitors, dispersants, emulsion breakers, or any combination thereof.
12. The method as in one of claims 1-11, wherein the R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> of formulae I and II comprise thiophosphates, phosphates and polymers thereof.
13. The method as in one of claims 1-12, wherein the Y<sup>1</sup> and Y<sup>2</sup> of formulae III and IV comprise thiocarbamates and polymers thereof.
14. The method as in one of claims 1-13, wherein the molybdenum-containing complex comprises a molybdenum dithiocarbamate, dithiophosphate, polymers thereof and combinations thereof.
15. The method of claim 14, wherein the molybdenum dithiocarbamate is an alkyldithiocarbamate.
16. The method of claim 15, wherein the alkyldithiocarbamate is an ethyl hexyl dithiocarbamate, straight chain C6-C10 alcohols or mixtures thereof.

17. The method of claim 14, wherein the molybdenum dithiophosphate is an alkylidithiophosphate.
18. The method of claim 17, wherein the alkylidithiophosphate is an ethyl hexyl, straight chain C6-C10 alcohols or mixtures thereof.
19. The method as in one of claims 1-18, wherein the molybdenum-containing complex provides at least 70% corrosion protection in a 1018 carbon steel coupon test.
20. A composition comprising at least one molybdenum-containing complex to inhibit corrosion in a fluid source containing corrodents and in contact with a metal containment, the at least one molybdenum-containing complex comprising the formula selected from Formula I, II, III or IV:

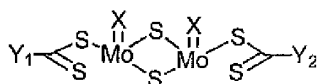


Formula I

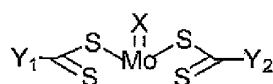


Formula II

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub>, are each a hydrocarbon group and wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> can be the same or different; and X is oxygen or sulfur and X can be the same or different.



Formula III



Formula IV

wherein Y<sup>1</sup> and Y<sup>2</sup> are each oxygen, nitrogen or carbon-containing ligands and Y<sup>1</sup> and Y<sup>2</sup> can be the same or different and X is each oxygen or sulfur, and X can be the same or different from each other.

21. The composition of claim 20, wherein the composition further comprises one or more, asphaltene inhibitors, paraffin inhibitors, dispersants, emulsion breakers, or any combination thereof.

22. The composition as in one of claims 20-21, wherein the fluid source is in contact in with distillation columns, strippers, trays, or piping.
23. The composition as in one of claims 20-22, wherein the fluid source comprises at least a liquid hydrocarbon fraction.
24. The composition as in one of claims 20-23, wherein the hydrocarbon fraction is a distillate.
25. The composition as in one of claims 20-24, wherein the corrodents comprise at least naphthenic acid, sulfur or combinations thereof.
26. The composition as in one of claims 20-25, wherein the fluid source comprises a TAN of 0.2-20.
27. The composition as in one of claims 20-26, wherein the fluid source temperature is 175°C to 600°C.
28. The composition as in one of claims 20-27, wherein the R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> of formulae I and II comprise thiophosphates, phosphates and polymers thereof.
29. The composition as in one of claims 20-28, wherein the Y<sup>1</sup> and Y<sup>2</sup> of formulae III and IV comprise thiocarbamates and polymers thereof.
30. The composition as in one of claims 20-29, wherein the molybdenum-containing complex comprises a molybdenum dithiocarbamate, dithiophosphate, polymers thereof and combinations thereof.
31. The composition of claim 30, wherein the molybdenum dithiocarbamate is an alkyl dithiocarbamate.

32. The composition of claim 31, wherein the alkylthiocarbamate is an ethyl hexyl dithiocarbamate, straight chain C6-C10 alcohols or mixtures thereof.
33. The composition of claim 30, wherein the molybdenum dithiophosphate is an alkylthiophosphate.
34. The composition of claim 33, wherein the alkylthiophosphate is an ethyl hexyl, straight chain C6-C10 alcohols or mixtures thereof.
35. The composition as in one of claims 20-34, wherein the molybdenum-containing complexes are about 1 ppm to 3,000 ppm of the composition.
36. A composition comprising:  
a fluid source; and  
the at least one molybdenum-containing complex as in one of claims 20-35.
37. A treated metal containment comprising:  
a metal containment comprising a metal surface; and the fluid source comprising the molybdenum-containing complex as in one of claims 20-36,  
wherein at least a portion of the metal surface is contacted by the fluid source.
38. The treated metal containment of claim 37, wherein the metal surface comprises carbon (mild) steel or higher alloy.
39. The treated metal containment as in one of claims 37-38, wherein the metal containment comprises a tank, pipe, distillation column strippers, trays, or piping.
40. The treated metal containment as in one of claims 37-39, wherein the fluid comprises, gas, liquid hydrocarbon, and optionally water.
41. Use of the molybdenum-containing complex as in one of claims 1-40 to inhibit corrosion.

42. Use of the molybdenum-containing complex as in one of claims 1-40 to treat a fluid source comprising one or more corrodents and the fluid source in contact with a containment.
43. Use of the molybdenum-containing complex as in one of claims 1-40 to inhibit corrosion of a metal containment comprising a fluid source comprising one or more corrodents.