Claims

What is claimed is:

1. A method of removing mercury bearing species from a hydrocarbon containing fluid, the method comprising the steps of: adding dithiocarbamate polymer to the fluid in an amount such that the number of mercury bonding sites on the polymer exceeds the amount of mercury atoms by at least 10% and removing the mercury bearing dithiocarbamate polymer with a water/oil separation device, wherein the mercury bearing dithiocarbamate polymer is soluble in water.

2. The method of claim 1 further comprising the step of adding mercury free water to the fluid prior to adding the polymer.

3. The method of claim 1 further comprising adding an emulsifier to the fluid before adding the polymer.

4. The method of claim 3 further comprising adding an emulsion breaker to the fluid after adding the polymer.

5. The method of claim 1 excluding the use of solid liquid separation device.

6. The method of claim 1 in which the hydrocarbon is a naphtha fraction formed by a distillation process of crude oil.

7. The method of claim 1 in which the mercury bearing species is one selected from the list consisting of elemental mercury, mercuric chloride, mercuric sulfide, mercuric selenide, asphaltic and sulfur containing complexes and compounds, and combinations thereof.

8. The method of claim 1 in which the number of mercury bonding sites exceeds the number of mercury atoms by at least 30%.

9. The method of claim 1 in which the conversion is achieved by the use of an electrostatic device.

10. The method of claim 1 in which the method further comprises (a) mixing said ~~liquid~~ hydrocarbon ~~feed~~ containing fluid with an organic compound containing at least one sulfur atom that is reactive with

mercury, wherein said organic compound is not supported on carrier solids and is selected from the group consisting of sulfurized isobutylenes, dithiocarbamates, alkyl dithiocarbamates, polymeric dithiocarbamates, sulfurized olefins, thiophenes, mono and dithio organic acids, and mono and dithioesters; and (b) separating mercury-containing water soluble complexes formed in step (a) by the reaction of said organic compound with mercury from the effluent of step (a) to produce liquid hydrocarbons having a reduced mercury concentration as compared to said liquid hydrocarbon feed.

11. The method of claim 1 in which the method further comprises (a) mixing said ~~liquid~~ hydrocarbon ~~feed~~ containing fluid with a sufficient amount of an aqueous solution of a sulfur-containing compound selected from the group consisting of alkali metal sulfides, alkaline earth metal sulfides, alkali metal polysulfides, alkaline earth metal polysulfides, and alkali metal trithiocarbonates such that the resultant mixture contains a volume ratio of said aqueous solution to said liquid hydrocarbon feed less than 0.003; and (b) separating mercury-containing water-soluble complexes formed in step (a) from the effluent of step (a) to produce liquid hydrocarbons having a reduced mercury concentration as compared to said liquid hydrocarbon feed.