weight mercaptans is self-defeating in media such as crude oil. European Patent Application 0 538 819 A3 describes the use of oil-soluble quaternary ammonium compounds to scavenge mercaptans from certain oils, especially high boiling, heavy residual fuels. US Patent 5,840,177 describes using quaternary ammonium hydroxides to scavenge mercaptans from certain hydrocarbon fluids.

Despite these attempts however there is still a need for compositions that are produced in high yields and low cost, and that reduce mercaptan concentrations more effectively than the prior art. Thus there is clear need and utility for compositions and methods for scavenging molecular weight mercaptans more effectively and more efficiently. The art described in this section is not intended to constitute an admission that any patent, publication or other information referred to herein is "prior art" with respect to this invention, unless specifically designated as such. In addition, this section should not be construed to mean that a search has been made or that no other pertinent information as defined in 37 CFR § 1.56(a) exists.

Brief Summary of the Invention

In an aspect, there is provided a method of reducing the amount of mercaptans in a hydrocarbon fluid comprising contacting the fluid with an effective amount of alpha-amino ether sufficient to convert the mercaptan into a non-volatile species and facilitating the removal of the volatile species from the hydrocarbon liquid thereby reducing the amount of mercaptans released into the vapor phase.

At least one embodiment of the present disclosure~~invention~~ is directed towards a method of reducing the amount of mercaptans in a hydrocarbon fluid. The method comprises contacting the fluid with an effective amount of alpha-amino ether sufficient to convert the mercaptan into a non-volatile species.

The hydrocarbon fluid can be a liquid. The hydrocarbon fluid can be selected from the list consisting of but not limited to diesel fuel, kerosene, and gasoline. . The alpha-amino ether can be selected from the list consisting of:

N,N'-oxybis(methylene)bis(N,N-dibutylamine),

N,N'- (methylenebis(oxy)bis(methylene))bis(N,N-dibutylamine),