"OEMs") require passage of a number of performance tests, including a copper corrosion test.

[0009] Therefore, it would be desirable to develop lubricating oil compositions which exhibit improved copper corrosion performance.

SUMMARY OF THE ~~INVENTION~~DISCLOSURE

[0010] In accordance with one embodiment of the present ~~invention~~disclosure, there is provided a method for improving copper corrosion performance of a lubricating oil composition comprising (a) a major amount of a base oil of lubricating viscosity; and (b) one or more dispersants containing one or more basic nitrogen atoms, the method comprising adding to the lubricating oil composition an effective amount of one or more copper corrosion performance improving agents of the general formula $Si\text{-}X_4$ or a hydrolysis product thereof, wherein each X is independently a hydroxyl-containing group, hydrocarbyloxy-containing group, acyloxy-containing group, amino-containing group, monoalkyl amino-containing group or dialkyl amino-containing group.

[0011] In accordance with a second embodiment of the present ~~invention~~disclosure, there is provided a method for improving copper corrosion performance of a lubricating oil composition in an internal combustion engine which comprises operating the engine with a lubricating oil composition comprising (a) a major amount of a base oil of lubricating viscosity; (b) one or more dispersants containing one or more basic nitrogen atoms; and (c) an effective amount of one or more copper corrosion performance improving agents of the general formula $Si\text{-}X_4$ or a hydrolysis product thereof, wherein each X is independently a hydroxyl-containing group, hydrocarbyloxy-containing group, acyloxy-

containing group, amino-containing group, monoalkyl amino-containing group or dialkyl amino-containing group.

[0012] The methods of the present ~~invention~~disclosure advantageously improve copper corrosion performance of a lubricating oil composition comprising (a) a major amount of a base oil of lubricating viscosity; and (b) one or more dispersants containing one or more basic nitrogen atoms in an internal combustion engine, by adding to the lubricating oil composition an effective amount of one or more copper corrosion performance improving agents of the general formula $Si\text{-}X_4$ or a hydrolysis product thereof, wherein each X is independently a hydroxyl-containing group, hydrocarbyloxy-containing group, acyloxy-containing group, amino-containing group, monoalkyl amino-containing group or dialkyl amino-containing group.

[0012a] In another embodiment, there is provided the use of one or more copper corrosion performance improving agents of the general formula $Si\text{-}X_4$ or a hydrolysis product thereof, wherein each X is independently a hydroxyl-containing group, hydrocarbyloxy-containing group, acyloxy-containing group, amino-containing group, monoalkyl amino-containing group or dialkyl amino-containing group in a lubricating oil composition comprising (a) a major amount of a base oil of lubricating viscosity; and (b) one or more dispersants containing one or more basic nitrogen atoms, for the purpose of improving copper corrosion performance of the lubricating oil composition in an internal combustion engine.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013] The present invention is directed to a method for improving copper corrosion performance of a lubricating oil composition comprising (a) a major amount of a base oil of lubricating viscosity; and (b) one or more dispersants containing one or more basic nitrogen atoms. In general, the method involves at least adding to the lubricating oil composition an effective amount of one or more copper corrosion performance improving agents of the general formula $Si\text{-}X_4$ or a hydrolysis product thereof, wherein each X is independently a hydroxyl-containing group, hydrocarbyloxy-containing group, acyloxy-containing group, amino-containing group, monoalkyl amino-containing group or dialkyl amino-containing group.