SUMMARY OF THE INVENTION

[0016] In accordance with one embodiment of the present invention, a marine diesel cylinder engine lubricating oil composition is provided which comprises (a) a major amount of one or more Group II basestocks, and (b) a detergent composition comprising (i) one or more alkaline earth metal salts of an alkyl-substituted hydroxyaromatic carboxylic acid having a total base number (TBN) of greater than 250 as determined according to ASTM D2896, and (ii) one or more high overbased alkyl aromatic sulfonic acids or salts thereof having a TBN of greater than 250 as determined according to ASTM D2896; wherein the aromatic moiety of the alkyl aromatic sulfonic acids or salts contains no hydroxyl groups; and wherein the marine diesel cylinder lubricating oil composition has a TBN of about 5 to about 120.

[0017] In accordance with a second embodiment of the present invention, there is provided a method for lubricating a marine two-stroke crosshead diesel engine with a marine diesel cylinder lubricant composition having improved high temperature detergency and thermal stability; wherein the method comprises operating the engine with a marine diesel cylinder lubricating oil composition comprising (a) a major amount of one or more Group II basestocks, and (b) a detergent composition comprising (i) one or more alkaline earth metal salts of an alkyl-substituted hydroxyaromatic carboxylic acid having a TBN of greater than 250, and (ii) one or more high overbased alkyl aromatic sulfonic acids or salts thereof; wherein the aromatic moiety of the alkyl aromatic sulfonic acids or salts thereof contains no hydroxyl groups; and wherein the marine diesel cylinder lubricating oil composition has a TBN of about 5 to about 120.

[0018] A third embodiment of the present invention is directed to a use of a marine diesel cylinder lubricating oil composition comprising (a) a major amount of one or more

WHAT IS CLAIMED IS:

1. A marine diesel cylinder lubricating oil composition comprising (a) a major amount of one or more Group II basestocks, and (b) a detergent composition comprising (i) one or more alkaline earth metal salts of an alkyl-substituted hydroxyaromatic carboxylic acid having a total base number (TBN) greater than 250 as determined according to ASTM D2896, and (ii) one or more high overbased alkyl aromatic sulfonic acids or salts thereof having a TBN of greater than 250 as determined according to ASTM D2896; wherein the aromatic moiety of the alkyl aromatic sulfonic acids or salts thereof contains no hydroxyl groups; and wherein the marine diesel cylinder lubricating oil composition has a TBN of about 5 to about 120 as determined according to ASTM D2896.

2. The marine diesel cylinder lubricating oil composition according to Claim 1, having a TBN of from about 20 to about 100 as determined according to ASTM D2896.

3. The marine diesel cylinder lubricating oil composition according to Claim 1, having a TBN of from about 10 to about 40 as determined according to ASTM D2896.

4. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-3, which contains less than 1.5 wt.% of tetrapropenyl phenol (TPP) and its unsulfurized metal salt.

5. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-4, wherein the one or more alkaline earth metal salts of an alkyl-substituted hydroxyaromatic carboxylic acid are one or more calcium salts of an alkyl-substituted hydroxyaromatic carboxylic acid.

6. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-4, wherein the alkyl-substituted moiety of the alkaline earth metal salt of an alkyl-substituted hydroxyaromatic carboxylic acid is a C_{10} to C_{40} alkyl group.

7. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-5, wherein the one or more alkaline earth metal salts of an alkyl-substituted hydroxyaromatic carboxylic acid have a TBN greater than 250 and up to about 800 as determined according to ASTM D2896.

8. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-6, wherein the one or more high overbased alkyl aromatic sulfonic acids or salts thereof are one or more high overbased alkaline earth metal alkyl aromatic sulfonates.

9. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-7, wherein the one or more high overbased alkyl aromatic sulfonic acids or salts thereof are one or more high overbased calcium alkyl aromatic sulfonates.

10. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-8, comprising:

about 0.1 to about 35 wt. % on an actives basis of the one or more alkaline earth metal salts of an alkyl-substituted hydroxyaromatic carboxylic acid having a TBN greater than 250 as determined according to ASTM D2896, based on the total weight of the marine diesel cylinder lubricating oil composition; and

about 0.1 to about 34 wt. % on an actives basis of the one or more high overbased alkyl aromatic sulfonic acids or salts thereof having a TBN of greater than 250 as determined according to ASTM D2896, based on the total weight of the marine diesel cylinder lubricating oil composition.

11. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-9, further comprising one or more marine diesel cylinder lubricating oil composition additives selected from the group consisting of an antioxidant, ashless dispersant, detergent, rust inhibitor, dehazing agent, demulsifying agent, metal deactivating agent, friction modifier, pour point depressant, antifoaming agent, co-solvent, corrosion-inhibitor, dyes, extreme pressure agent and mixtures thereof.

12. The marine diesel cylinder lubricating oil composition according to any one of Claims 1-10, which contains less than 0.5 wt.% of any dispersants and/or zinc compounds.

13. A method for lubricating a marine two-stroke crosshead diesel engine, wherein the method comprises operating the engine with a marine diesel cylinder lubricating oil composition according to any one of Claims 1-11.

14. The use of a marine diesel cylinder lubricating oil composition according to any one of Claims 1-11for improving high temperature detergency and thermal stability in a two-stroke crosshead marine diesel engine.