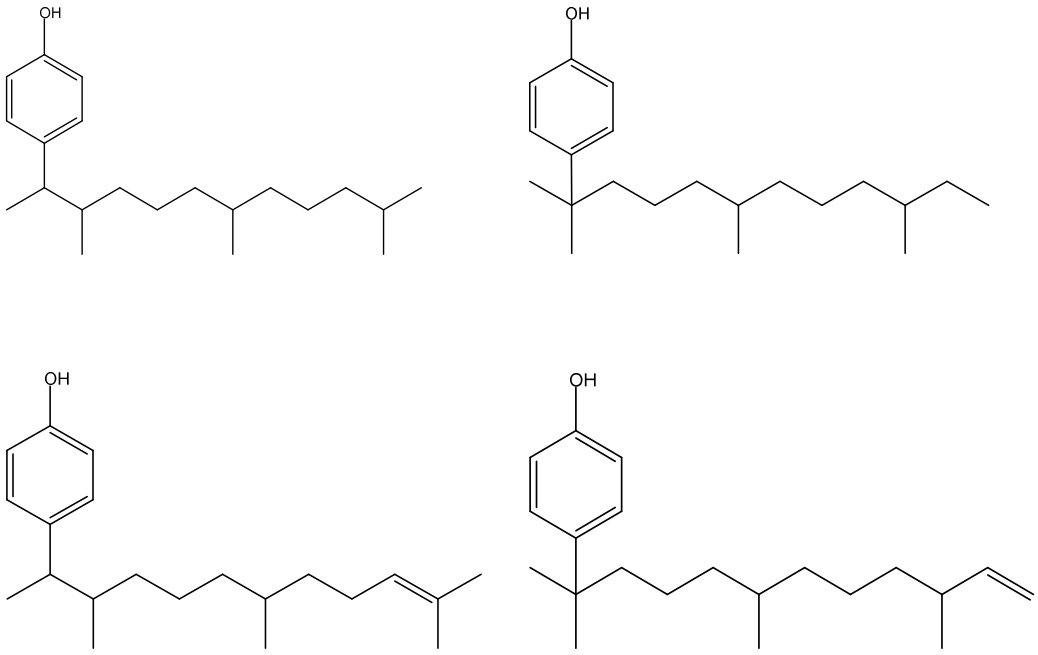
What is claimed is:

1. An alkylphenol detergent composition comprising at least one phenol moiety having a hydrocarbyl group attached thereto, the hydrocarbyl group comprising at least one oligomer comprising monomers equivalent to 5 or 10 carbon atoms branched olefins, wherein the oligomer is equivalent to a partially or completely hydrogenated form of a terpene, and wherein the terpene is attached to the para position of the phenol moiety.

2. The detergent composition of any previous claim, where the hydrocarbyl unit comprises 15 to 60 carbon atoms.

3. The detergent composition of any previous claim, where the detergent comprises an alkylphenol moiety of any of formula:



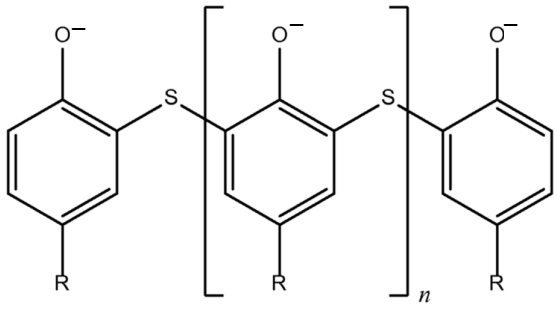
4. The detergent composition of any previous claim, wherein the detergent can also be a sulfur-bridged phenate detergent, a sulfur-free alkylene-bridged phenate detergent, a salicylate detergent, or mixtures thereof.

5. The detergent composition of any previous claim, where the detergent comprises one or more alkali metals, one or more alkaline earth metals, or mixtures thereof.

6. The detergent composition of any previous claim, where the detergent is overbased, preferably where the overbased detergent has a metal ratio of at least 1.5, at least 5, or at least 7.

7. The detergent composition of any previous claim, wherein the detergent is an overbased sulfur-coupled phenate detergent with a metal ratio of at least 1.5.

8. The detergent composition of any previous claim, wherein the composition is a sulfur-bridged phenate represented by the structure

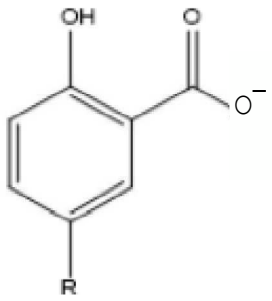


(I)

wherein each R is an aliphatic hydrocarbyl group equivalent to an oligomer of isoprene, higher branched olefins, or mixtures thereof, that contains 15 to 60 carbon atoms; and n = 0 to 8, or 1 to 6, or 1 to 4, or 2 to 4.

9. The detergent composition of any previous claim, wherein the detergent is a neutral or overbased salt of alkylsalicylic acid.

10. The detergent composition of any previous claim, wherein the composition is an alkylsalicylate represented by the structure



where R is an aliphatic hydrocarbyl group equivalent to an oligomer of isoprene, higher branched olefins, or mixtures thereof, and wherein the hydrocarbyl group contains 15 to 60 carbon atoms

11. A lubricating composition comprising (a) an oil of lubricating viscosity and (b) the alkylphenol detergent composition of any previous claim.

12. The lubricating composition of claim 11, wherein the alkylphenol detergent is present from 0.01 to 2 wt%, or from 0.1 to 1.75 wt%, or 0.2 to 1.5 wt% of the lubricating composition.

13. The lubricating composition of claim 11 or 12, wherein the composition comprises no more than 0.01 wt% of an alkylphenol-containing detergent wherein the alkylphenol is derived from oligomers of propene.

14. A method of lubricating a mechanical device comprising supplying to the device the lubricating composition of any of claims 11 to 13.

15. The method of claim 14, wherein the mechanical device is an internal combustion engine, preferably wherein the internal combustion engine is a heavy duty diesel compression ignited internal combustion engine or a spark assisted compression ignited internal combustion engine, or wherein the mechanical device is an automatic transmission, a manual transmission, an automotive axle or an off-highway vehicle.