CLAIMS

1 A gas engine lubricating oil composition having TBN in the range of 4 to 20 and an ash content in the range of 0.2 to 1 mass % as determined by ASTM D874, comprising or made by admixing

(A) an oil of lubricating viscosity including at least 90 mass % of saturates and no more than 0.03 mass % of sulfur in a major amount;

and in respective minor amounts:

(B) a calcium hydroxybenzoate detergent additive,

(C) a borated dispersant additive; and

(D) an aminic or phenolic antioxidant,

the composition having a boron concentration of less than 90, preferably less than 70, ppm by mass; and where boron is provided by the boron-containing dispersant additive (C).

2 The composition of claim 1 where (B) is an overbased calcium salicylate detergent.

3 The composition of claim 2 where the calcium salicylate detergent provides Ca, expressed as atoms of Ca, in the range of 0.05 to 2, preferably 0.08 to 0.16, mass % based on the mass of the lubricating oil composition.

4 The composition of any of claims 1 to 3 where the boron concentration is in the range of 10 to 60, preferably 20 to 50, ppm by mass.

5 The composition of any of claims 1 to 4 where the dispersant (C) is N-containing and provides N, expressed as atoms of N, ranging from 0.1 to 1, preferably from 0.2 to 0.8, mass %, based on the mass of the lubricating oil composition.

6 The composition of any of claims 1 to 5 where the antioxidant (D) is present in an amount of up to 3, preferably 0.1 to 3, mass % based on the mass of the lubricating oil composition.

7. The composition of any of claims 1 to 6 further including, as co-additives (additional to (B), (C) and (D)) in respective minor amounts, one or more dispersants, detergents, anti-wear additives, anti-oxidants, and corrosion inhibitors.

8. A method of lubricating a gas engine comprising the step of operating the engine while lubricating it with the gas engine lubricating oil composition of any of claims 1 to 7.

9. The use of a boron concentration of less than 90 ppm by mass provided by a boron-containing dispersant additive in combination with a metal hydroxybenzoate detergent, in a minor amount, in a gas engine lubricating oil composition that has a major amount of an oil of lubricating viscosity including at least 90 mass % saturates and no more than 0.03 mass % sulfur, to improve the lead corrosion performance of the composition.

10. The use of a boron concentration of less than 90 ppm by mass provided by a boron-containing dispersant additive in combination with a metal hydroxybenzoate detergent, in a minor amount, in a gas engine lubricating oil composition that has a major amount of an oil of lubricating viscosity including at least 90 mass % saturates and no more than 0.03 mass % sulfur, to improve the lead corrosion performance of the composition without adverse effect on its anti-wear performance.

11. The use of a boron concentration of less than 90 ppm by mass provided by a boron-containing dispersant additive in combination with a metal hydroxybenzoate detergent, in a minor amount, in a gas engine lubricating oil composition that has a major amount of an oil of lubricating viscosity including at least 90 mass % saturates and no more than 0.03 mass % sulfur, to improve the lead corrosion performance of the composition without adverse effect on its anti-wear performance, in comparison with use of a higher boron-content composition.