CLAIMS

1. A method of preparing a marine diesel cylinder lubricant additive concentrate for a piston cylinder assembly lubricating oil composition:
comprising the steps of providing as separate additive components:

(A) at least one overbased metal detergent with a TBN of 50-150 mg KOH/g, and

(B) an oil-soluble alkoxylated alcohol, having a hydrophile-lipophile balance (HLB) in the range 7-9.5, such as 9-9.5, represented by the formula

$R\text{-}[O\text{-}(CH_2)_x]_y\text{-}OH$

where R is a linear alkyl group having from 12 to 20 carbon atoms, wherein HLB is calculated by multiplying by 20, the ratio of molecular weight of polyethylene oxide content of the oil-soluble alkoxylated alcohol to the total molecular weight of the oil-soluble alkoxylated alcohol,
x is 2, and
y is an integer from 2 to 10, such as 2-8, 2-6, or 2-4,
the ratio of x to y being such as to provide an HLB in the above range, and

admixing an oil of lubricating viscosity in a concentrate-forming amount with additive compound comprising (A) and (B); and wherein the additive concentrate contains from 0.25 to 5 mass % of additive (B).

2. The method of claim 1 where the additive concentrate contains from 2.5 to 90, preferably from 5 to 75, most preferably from 8 to 60, mass % of additives.

3. The method of claim 1 or claim 2 where the additive concentrate contains from 1 to 5, such as 3-4, mass % of additive (B).

4. A marine diesel cylinder lubricant additive concentrate for a piston cylinder assembly comprising

(A) at least one overbased metal detergent with a TBN of 50-150 mg KOH/g,

(B) an oil-soluble alkoxylated alcohol, having a hydrophile-lipophile balance (HLB) in the range 7-9.5, such as 9-9.5, represented by the formula

$R\text{-}[O\text{-}(CH_2)_x]_y\text{-}OH$

where R is a linear alkyl group having from 12 to 20 carbon atoms, wherein HLB is calculated by multiplying by 20, the ratio of molecular weight of polyethylene oxide content of the oil-soluble alkoxylated alcohol to the total molecular weight of the oil-soluble alkoxylated alcohol,

x is 2, and

y is an integer from 2 to 10, such as 2-8, 2-6, or 2-4,

the ratio of x to y being such as to provide an HLB in the above range, and

an oil of lubricating viscosity in a concentrate-forming amount with; and wherein the additive concentrate contains from 0.25 to 5 mass % of additive (B).

5. A two-stroke engine marine cylinder lubricating oil composition comprising an oil of lubricating viscosity in a major amount blended with a minor amount of the additive concentrate claimed in claim 4, where the composition has a TBN of 10-200, preferably 40-140, as determined by ASTM D2896.

6. The composition of claim 5 comprising 10-65, preferably 12-50, most preferably 13-25, mass % of the additive concentrate.

7. The composition of claim 5 or 6 containing 0.1 to 3, such as 0.5 to 2, such as 0.5 to 1.5, mass % of additive (B).

8. The composition of any of claims 5-7 including at least 60, preferably at least 70, mass % of the oil of lubricating viscosity.

9. The additive concentrate or composition of any of claims 4 to 8 where (A) is an overbased calcium salicylate detergent and/or an overbased calcium sulfonate detergent, or is a complex detergent comprising more than one surfactant.

10. The additive concentrate or composition of any of claims 4 to 9 where y is 4.

11. A method of operating a two-stroke marine engine in which the engine is lubricated by the composition of any of claims 5 to 10 during its operation.

12. The use of additive (B) as defined in any of the preceding claims in an additive concentrate package for preparing a two-stroke, cross-head, marine diesel cylinder lubricant that contains

additives (A) and (B) as defined in any of the preceding claims to improve the stability of the additives in the concentrate or the composition, to improve the viscosity of the package, and to control or improve rust performance.