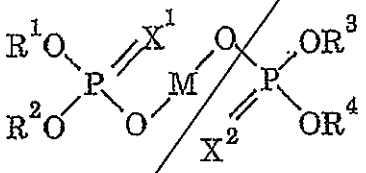
CLAIMS

[Claim 1] An additive composition for a lubricating oil, comprising a metal salt of a phosphorus-containing compound represented by formula (1) in an amount of 10 to 90 percent by mass on the basis of the composition, contained in a hydrocarbon solvent selected from a mineral oil, a hydrocarbon synthetic oil and a mixture thereof, the hydrocarbon solvent having a 100°C kinematic viscosity of 0.5 to 4.5 mm^2/s, a $\%C_A$ of 3 or less, and a sulfur content of 0.05 percent by mass or less:

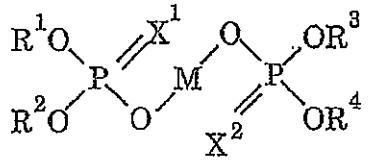


(1)

wherein X^1 and X^2 are each independently oxygen or sulfur, R^1, R^2, R^3, and R^4 are each independently a straight-chain alkyl group having 3 to 12 carbon atoms, the average of the carbon number is 5 or greater, and M is a divalent metal atom.

[Claim 2] A process for producing an additive composition for a lubricating oil, comprising dissolving a metal salt of a phosphorus-containing compound represented by formula (1) in an amount of 10

to 90 percent by mass on the basis of the composition in a hydrocarbon solvent selected from a mineral oil, a hydrocarbon synthetic oil and a mixture thereof, the hydrocarbon solvent having a 100°C kinematic viscosity of 0.5 to 4.5 mm^2/s, a $\%C_A$ of 3 or less, and a sulfur content of 0.05 percent by mass or less:



(1)

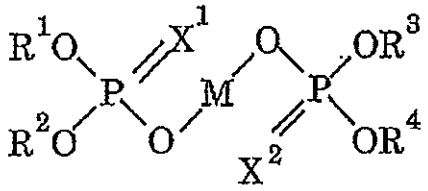
wherein X^1 and X^2 are each independently oxygen or sulfur, R^1, R^2, R^3, and R^4 are each a straight-chain alkyl group having 3 to 12 carbon atoms, the average of the carbon number is 5 or greater, and M is a divalent metal atom.

[Claim 3] A lubricating oil composition comprising the additive composition for a lubricating oil according to claim 1.

CLAIMS

[Claim 1]

An additive composition for a lubricating oil, comprising a metal salt of a phosphorus-containing compound represented by formula (1) in an amount of 10 to 90 percent by mass on the basis of the composition, contained in a poly-α-olefin hydrocarbon solvent having a 100°C kinematic viscosity of 4.0 to 4.5 mm^2/s, a $\%C_A$ of 3 or less, and a sulfur content of 0.05 percent by mass or less:

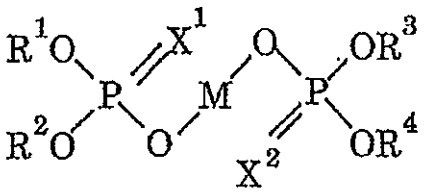


(1)

wherein X^1 and X^2 are each independently oxygen or sulfur, R^1, R^2, R^3, and R^4 are each independently a straight-chain alkyl group having 3 to 12 carbon atoms, the average of the carbon number is 5 or greater, and M is a divalent metal atom.

[Claim 2]

A process for producing an additive composition for a lubricating oil, comprising dissolving a metal salt of a phosphorus-containing compound represented by formula (1) in an amount of 10 to 90 percent by mass on the basis of the composition in a poly-α-olefin hydrocarbon solvent selected from a mineral oil, a hydrocarbon synthetic oil having a 100°C kinematic viscosity of 4.0 to 4.5 mm^2/s:



(1)

wherein X^1 and X^2 are each independently oxygen or sulfur, R^1, R^2, R^3, and R^4 are each a straight-chain alkyl group having 3 to 12 carbon atoms, the average of the carbon number is 5 or greater, and M is a divalent metal atom.

[Claim 3]

A lubricating oil composition comprising the additive composition for a lubricating oil according to claim 1.