CLAIMS

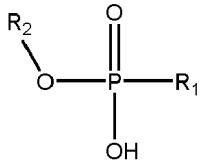
WHAT IS CLAIMED IS:

1. A slideway lubricant composition including
   a major amount of a base lubricating oil;
   a phosphorus containing friction modifier providing 0.01 to 1 weight percent of a hydrocarbyl phosphonate monoester to the slideway lubricant composition;
   the hydrocarbyl phosphonate monoester including a C1 to C4 alkyl group in the monoester moiety and 12 to 30 carbon atoms in the hydrocarbyl moiety, wherein the phosphorus containing friction modifier further provides 0.01 to 0.5 weight percent of a diester hydrogen phosphite to the slideway lubricant composition.

2. The slideway lubricant composition of claim 1, wherein the phosphorus containing friction modifier has a weight ratio of the hydrocarbyl phosphonate monoester to the diester hydrogen phosphite from 0.02:1 to 10:1.

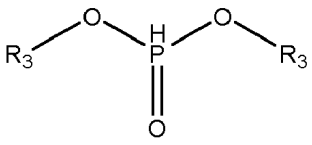
3. The slideway lubricant composition of claim 1 or 2, wherein an amount of phosphorus in the form of a phosphonate in the phosphorus containing friction modifier is 30 to 80 percent of the total phosphorus provided by the hydrocarbyl phosphonate monoester and the diester hydrogen phosphite.

4. The slideway lubricant composition of any one of claims 1 to 3, wherein the hydrocarbyl phosphonate monoester has the formula



   wherein R_1 is a C_{12} to C_{30} hydrocarbyl group and R_2 is a methyl or ethyl group.

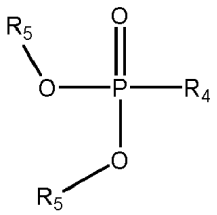
5. The slideway lubricant composition of any one of claims 1 to 4, wherein the phosphorus containing friction modifier further provides 0.01 to 0.5 weight percent of a diester hydrogen phosphite to the slideway lubricant composition, and wherein the diester hydrogen phosphite has the formula



   wherein each R_3 is independently a C_1 to C_{30} hydrocarbyl group.

6. The slideway lubricant composition of any one of claims 1 to 5, further comprising less than 0.25 weight percent of a phosphonate diester.

7. The slideway lubricant composition of any one of claims 1 to 5, further comprising less than 0.25 weight percent of a phosphonate diester, wherein the phosphonate diester has the formula



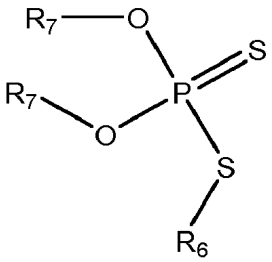
wherein R_4 is a C_1 to C_{30} hydrocarbyl group and each R_5 is independently a C_1 to C_4 alkyl groups.

8. The slideway lubricant composition of any one of claims 1 to 7, wherein the slideway lubricant composition further includes one or more amine salts of phosphate esters derived from mono or di-alkyl or alkenyl phosphate esters and alkyl or alkenyl primary or secondary amines.

9. The slideway lubricant composition of any one of claims 1 to 8, wherein the slideway lubricant composition further includes sulfur-containing lubricant additives selected from sulfurized hydrocarbons, sulfurized olefins, dialkyl polysulfides, diarylpolysulfides, sulfurized fatty acids, sulfurized fatty acid esters, and mixtures thereof.

10. The slideway lubricant composition of any one of claims 1 to 9, further comprising an acidic thiophosphate or a thiophosphate ester.

11. The slideway lubricant composition of claim 10, wherein the acidic thiophosphate or thiophosphate ester has the formula



wherein R_6 is a C1 to C10 linear or branched carboxylic group or a C1 to C10 linear or branched alkyl alkanoate group and each R_7 is independently a linear or branched C1 to C10 hydrocarbyl group.

12. The slideway lubricant composition of any one of claims 1 to 11, further comprising saturated, monounsaturated, or polyunsaturated C12 to C30 fatty acids or fatty acid esters.

13. A method of lubricating a slideway component, the method comprising: applying a lubricant composition according to any one of claims 1 to 12 to the slideway component and operating the slideway.

14. Use of the slideway lubricant composition according to any one of claims 1 to 12 to achieve a lower friction coefficient than a slideway lubricant composition including the same amount of a phosphonate diester instead of the monoester; and/or to achieve an average one hour SKC separability from a metal working fluids lower than 2.