What is claimed is:

1. A catalytic composition comprising: (i) a reactive compound comprising at least one group selected from acid-functional groups and/or groups that are convertible to acid-functional groups; (ii) a metal compound; and (iii) a compound different from (i) and (ii) that catalyzes an addition reaction between an ethylenically unsaturated compound and a thiol.

2. The curable composition of claim 1 wherein the reactive compound (i) comprises an anhydride-containing polymer.

3. The curable composition of claim 1 wherein the metal compound (ii) comprises at least one of a metal oxide, a metal salt, and an organometallic compound.

4. The curable composition of claim 1 wherein the compound (iii) is selected from one or more of oxazolidines, triethylamine, dimethylcyclohexylamine, dimethyloctylamine, dimethyldodecylamine, dimethylamino ethanol, tetramethyl guanidine, diaza-bicyclo-octane, diaza-bicyclo-undecene, diaza-bicyclo-nonene, n-methyl-triaza-bicyclodecene, trioctyl phosphine and triphenyl phosphine.

5. A curable composition comprising: (a) a polyene, (b) a polythiol, and (c) the catalytic composition of claim 1.

6. The curable composition of claim 5 wherein the polyene has the structural formula

A-(X).sub.m

where A is an organic moiety; X is an olefinically unsaturated moiety and m is at least 2.

7. The curable composition of claim 6 wherein X is selected from --C(O)CHR.dbd.CH.sub.2, --CH.sub.2--CHR.dbd.CH.sub.2 and mixtures thereof, where R is hydrogen or methyl.

8. The curable composition of claim 6 wherein A contains groups selected from ester and urethane.

9. The curable composition of claim 6 wherein A is derived from a polyisocyanate.

10. The curable composition of claim 6 wherein A-(X).sub.m comprises a polyurethane

(meth)acrylate or polyester (meth)acrylate.

11. The curable composition of claim 5 wherein the polythiol has the structural formula R.sub.1--(SH).sub.n where R.sub.1 is an organic moiety and n is at least 2.

12. The curable composition of claim 11 wherein R.sub.1 contains ester groups.

13. The curable composition of claim 11 wherein R.sub.1 is derived from a polyol.

14. The curable composition of claim 11 wherein the polythiol comprises a reaction product of a thiol-functional organic acid and a polyol.

15. The curable composition of claim 11 wherein n is from 2 to 6.

16. The curable composition of claim 5 wherein the reactive compound (i) comprises an anhydride-containing polymer.

17. The curable composition of claim 16 wherein the anhydride-containing polymer comprises a (meth)acrylic polymer.

18. The curable composition of claim 5 wherein the reactive compound (i) is present in the curable composition in amounts of 0.001 to 20 percent by weight, based on the total weight of components (a), (b) and the reactive compound (i) in the curable composition.

19. The curable composition of claim 5 wherein the metal compound (ii) comprises at least one of a metal oxide, a metal salt, and an organometallic compound.

20. The curable composition of claim 19 wherein the metal compound (ii) comprises an iron compound.

21. The curable composition of claim 5 wherein the compound (iii) is selected from one or more of oxazolidines, triethylamine, dimethylcyclohexylamine, dimethyloctylamine, dimethyldodecylamine, dimethylamino ethanol, tetramethyl guanidine, diaza-bicyclo-octane, diaza-bicyclo-undecene, diaza-bicyclo-nonene, n-methyl-triaza-bicyclodecene, trioctyl phosphine and triphenyl phosphine.

22. The curable composition of claim 21 wherein the compound (iii) is present in the

curable composition in amounts of 0.001 to 10 percent by weight, based on the total weight of components (a) and (b) in the curable composition.

23. The curable composition of claim 5, wherein the metal compound (ii) comprises an iron compound, the compound (iii) comprises a secondary or tertiary amine, and the molar ratio of amine to iron is 0.4 to 500:1.

24. The curable composition of claim 5 wherein the equivalent ratio of thiol functional groups in the polythiol (b) to ethylenically unsaturated groups in the polyene (a) is 0.1 to 10:1.