7. The process of Claims 1 or 3 wherein said catalyst is an alky halide, alkali halides, alkaline earth metal halides, transition metals and their halides or acid catalysts.

8. The process of Claims 1 or 3, wherein said catalyst is sodium iodide, lithium bromide, lithium chloride, potassium iodide, potassium bromide, lithium iodide, $C_1$-$C_6$ alkyl iodide, C1-$C_6$ alkyl bromide, 2-iodoethanol, 2-bromoethanol, 2-chloroethanol, 3-iodopropanol, 3-bromopropanol, ferric bromide, ferrous chloride, ferrous bromide, manganous halide, copper powder, nickel halide, cobalt chloride, cesium bromide, palladium chloride, sulfuric acid, aryl sulfonic acid, alkyl sulfonic acid, arylalkyl sulfonic acid, hydrochloric acid, hydrobromic acid, hydrofluoric acid, oxalic acid, perchloric acid, trifluoromethane sulfonic acid, fluorosulfonic acid, nitric acid, aluminum chloride, diethyl aluminum chloride, triethylaluminum/hydrogen chloride, ferric chloride, zinc chloride, antimony trichloride, stannic chloride, boron trifluoride, acidic zeolites, acidic clays, polymeric sulfonic acids, or mixtures thereof.

9. The process of Claim 5, wherein the solvent is a high boiling point solvent, wherein the high boiling point solvent has a boiling point greater than 150°C at 1.03 $kg/cm^2$ and melting point greater than -100°C.

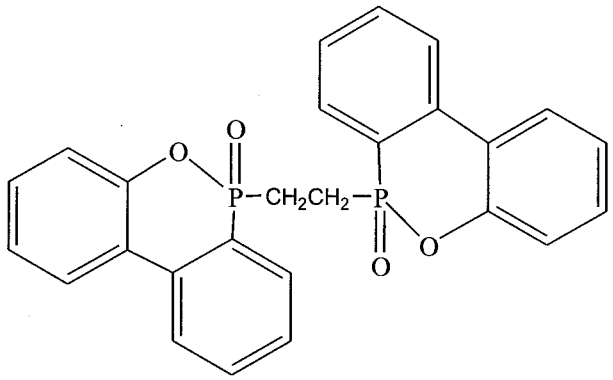
10. The process of Claim 9, wherein the high boiling point solvent is diphenylmethane, diphenylethane, diphenylpropane, biphenyl, decahydronaphthalene, cyclohexylbenzene, 1,3-diisopropylbenzene, dimethyl sulfoxide (DMSO), dimethyl formamide (DMF), dimethylacetamide (DMAC), ethylene glycol dimethyl ether, ethylene glycol diethyl ether or mixtures thereof.

11. The process of Claim 5, wherein the process is conducted greater than 1 atmospheric pressure and the solvent is a low boiling point solvent having a boiling point less than 150°C at ~~1.03 kg/cm$^2$~~.

12. The process of Claim 11, wherein the solvent is heptane, hexane, petroleum ether, methylcyclohexane; toluene, xylene, mesitylene, ethyl benzene, tetrahydrofuran, 1,4-dioxane, acetonitrile or mixtures thereof.

13. The process of Claims 1 or 3, wherein the temperature of the reaction ranges from 100°C to 250°C.

26. A method for producing a higher melting point composition comprising the compound of Formula II:



Formula II

comprising contacting a composition containing lower amounts of high melting point isomers of Formula II, with alcohols, water, or mixtures thereof in the presence of an acid catalyst, thereby producing a composition containing larger amounts of higher melting point isomers of Formula II.

27. The ~~composition~~ of Claim 26, wherein said acid catalyst is sulfuric acid, aryl sulfonic acid, alkyl sulfonic acid, aralkyl sulfonic acid, hydrochloric acid, hydrobromic acid, hydrofluoric acid, oxalic acid, perchloric acid, trifluoromethane sulfonic acid, fluorosulfonic acid, nitric acid, phosphoric acid, phosphonic acids, phosphinic acids aluminum chloride, diethyl aluminum chloride, triethylaluminum/hydrogen chloride, ferric chloride, zinc chloride, antimony trichloride, stannic chloride, boron trifluoride, acidic zeolites, acidic clays, polymeric sulfonic acids, or mixtures thereof.

28. A flame retardant polymer composition comprising a polymer and the compound of Claim 22.

29. The composition of Claim 28, wherein said polymer is polyolefins, polyesters, polyethers, polyketones, polyamides, polyvinylchlorides, natural and synthetic rubbers, polyurethanes, polystyrenes, poly(meth)acrylates, phenolic resins, polybenzoxazine, polyacetals, polyacrylonitriles, polybutadienes, polystyrenes, polyimides, polyamideimides, polyetherimides, polyphenylsulfides, polyphenylene oxide, polycarbonates, cellulose, cellulose derivatives, cyanate esters, polyphenylene esters, polybutadiene resins, butadiene-styrene resins, butadiene-divinylbenzene-styrene resins, epoxy-modified polybutadiene

7. The process of Claims 1 or 3 wherein said catalyst is an alky halide, alkali halides, alkaline earth metal halides, transition metals and their halides or acid catalysts.

8. The process of Claims 1 or 3, wherein said catalyst is sodium iodide, lithium bromide, lithium chloride, potassium iodide, potassium bromide, lithium iodide, $C_1$-$C_6$ alkyl iodide, C1-$C_6$ alkyl bromide, 2-iodoethanol, 2-bromoethanol, 2-chloroethanol, 3-iodopropanol, 3-bromopropanol, ferric bromide, ferrous chloride, ferrous bromide, manganous halide, copper powder, nickel halide, cobalt chloride, cesium bromide, palladium chloride, sulfuric acid, aryl sulfonic acid, alkyl sulfonic acid, arylalkyl sulfonic acid, hydrochloric acid, hydrobromic acid, hydrofluoric acid, oxalic acid, perchloric acid, trifluoromethane sulfonic acid, fluorosulfonic acid, nitric acid, aluminum chloride, diethyl aluminum chloride, triethylaluminum/hydrogen chloride, ferric chloride, zinc chloride, antimony trichloride, stannic chloride, boron trifluoride, acidic zeolites, acidic clays, polymeric sulfonic acids, or mixtures thereof.

9. The process of Claim 5, wherein the solvent is a high boiling point solvent, wherein the high boiling point solvent has a boiling point greater than 150°C at 1.03 $kg/cm^2$ and melting point greater than -100°C.

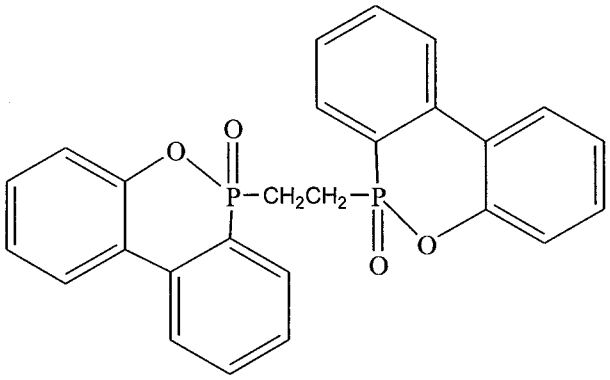
10. The process of Claim 9, wherein the high boiling point solvent is diphenylmethane, diphenylethane, diphenylpropane, biphenyl, decahydronaphthalene, cyclohexylbenzene, 1,3-diisopropylbenzene, dimethyl sulfoxide (DMSO), dimethyl formamide (DMF), dimethylacetamide (DMAC), ethylene glycol dimethyl ether, ethylene glycol diethyl ether or mixtures thereof.

11. The process of Claim 5, wherein the process is conducted greater than 1 atmospheric pressure and the solvent is a low boiling point solvent having a boiling point less than 150°C at 101 325 Pascals.

12. The process of Claim 11, wherein the solvent is heptane, hexane, petroleum ether, methylcyclohexane; toluene, xylene, mesitylene, ethyl benzene, tetrahydrofuran, 1,4-dioxane, acetonitrile or mixtures thereof.

13. The process of Claims 1 or 3, wherein the temperature of the reaction ranges from 100°C to 250°C.

26. A method for producing a higher melting point composition comprising the compound of Formula II:



Formula II

comprising contacting a composition containing lower amounts of high melting point isomers of Formula II, with alcohols, water, or mixtures thereof in the presence of an acid catalyst, thereby producing a composition containing larger amounts of higher melting point isomers of Formula II.

27. The method of Claim 26, wherein said acid catalyst is sulfuric acid, aryl sulfonic acid, alkyl sulfonic acid, aralkyl sulfonic acid, hydrochloric acid, hydrobromic acid, hydrofluoric acid, oxalic acid, perchloric acid, trifluoromethane sulfonic acid, fluorosulfonic acid, nitric acid, phosphoric acid, phosphonic acids, phosphinic acids aluminum chloride, diethyl aluminum chloride, triethylaluminum/hydrogen chloride, ferric chloride, zinc chloride, antimony trichloride, stannic chloride, boron trifluoride, acidic zeolites, acidic clays, polymeric sulfonic acids, or mixtures thereof.

28. A flame retardant polymer composition comprising a polymer and the compound of Claim 22.

29. The composition of Claim 28, wherein said polymer is polyolefins, polyesters, polyethers, polyketones, polyamides, polyvinylchlorides, natural and synthetic rubbers, polyurethanes, polystyrenes, poly(meth)acrylates, phenolic resins, polybenzoxazine, polyacetals, polyacrylonitriles, polybutadienes, polystyrenes, polyimides, polyamideimides, polyetherimides, polyphenylsulfides, polyphenylene oxide, polycarbonates, cellulose, cellulose derivatives, cyanate esters, polyphenylene esters, polybutadiene resins, butadiene-styrene resins, butadiene-divinylbenzene-styrene resins, epoxy-modified polybutadiene