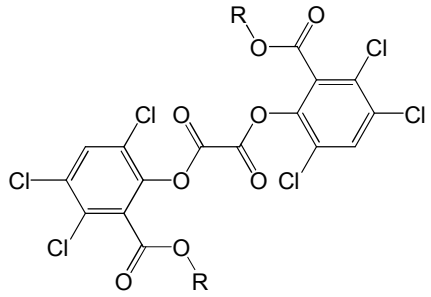
CLAIMS

What is claimed is:

Claim 1. A branched chain oxalic acid ester represented by the general formula:



R = CH_2A

wherein the group designated as R contains from 4-15 carbons, wherein the carbon of attachment of R to the oxygen is via a primary carbon, and wherein substructure A is composed of substituents selected from the group including alkyl chains, alkyl rings, aromatic rings and combinations thereof such that R is nonlinear, said branched chain oxalic acid ester being selected from the group consisting of bis{3,4,6-trichloro-2-[(2-methylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(cyclopropylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylbutoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2,2-dimethylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylpentyloxy) carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(4-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3,3-dimethylbutoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-ethylbutoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(cyclopentylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(4-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(5-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-

[(cyclohexylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(phenylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-phenylethoxy)carbonyl]phenyl} oxalate, bis(3,4,6-trichloro-2-{[(2-methylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(3-methylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(4-methylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2,3-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2,4-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[3,4-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(3,5-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2,6-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2-ethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(3-ethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(4-ethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[2-(2-methylphenyl)ethoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[2-(3-methylphenyl)ethoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[2-(4-methylphenyl)ethoxy]carbonyl}phenyl) oxalate, bis{3,4,6-trichloro-2-[(2-phenylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3-phenylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[1-naphthalenylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[2-naphthalenylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2,2-diphenylethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(9-fluorenylmethoxy)carbonyl]phenyl} oxalate, and bis{3,4,6-trichloro-2-[(9-anthracenylmethoxy)carbonyl]phenyl} oxalate.

Claim 2. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-methylpropoxy)carbonyl]phenyl} oxalate.

Claim 3. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(cyclopropylmethoxy)carbonyl]phenyl} oxalate.

Claim 4. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-methylbutoxy)carbonyl]phenyl} oxalate.

~~Claim 5. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(3-methylbutoxy)carbonyl]phenyl} oxalate.~~

Claim ~~6~~ 5. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2,2-dimethylpropoxy)carbonyl]phenyl} oxalate.

Claim ~~7~~ 6. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-methylpentyloxy)carbonyl]phenyl} oxalate.

Claim ~~8~~ 7. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(3-methylpentyloxy)carbonyl]phenyl} oxalate.

Claim ~~9~~ 8. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(4-methylpentyloxy)carbonyl]phenyl} oxalate.

Claim ~~10~~ 9. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(3,3-dimethylbutoxy)carbonyl]phenyl} oxalate.

Claim ~~11~~ 10. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-ethylbutoxy)carbonyl]phenyl} oxalate.

Claim ~~12~~ 11. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(cyclopentylmethoxy)carbonyl]phenyl} oxalate.

Claim ~~13~~ 12. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-methylhexyloxy)carbonyl]phenyl} oxalate.

Claim ~~14~~ 13. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(3-methylhexyloxy)carbonyl]phenyl} oxalate.

Claim ~~15~~ 14. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(4-methylhexyloxy)carbonyl]phenyl} oxalate.

Claim ~~16~~ 15. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(5-methylhexyloxy)carbonyl]phenyl} oxalate.

Claim ~~17~~ 16. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(cyclohexylmethoxy)carbonyl]phenyl} oxalate.

Claim ~~18~~ 17. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(phenylmethoxy)carbonyl]phenyl} oxalate.

Claim ~~19~~ 18. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-phenylethoxy)carbonyl]phenyl} oxalate.

Claim ~~20~~ 19. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(2-methylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~21~~ 20. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(3-methylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~22~~ 21. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(4-methylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~23~~ 22. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(2,3-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~24~~ 23. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(2,4-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~25~~ 24. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[3,4-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~26~~ 25. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(3,5-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~27~~ 26. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(2,6-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~28~~ 27. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(2-ethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~29~~ 28. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(3-ethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~30~~ 29. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[(4-ethylphenyl)methoxy]carbonyl}phenyl) oxalate.

Claim ~~31~~ 30. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[2-(2-methylphenyl)ethoxy]carbonyl}phenyl) oxalate.

Claim ~~32~~ 31. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[2-(3-methylphenyl)ethoxy]carbonyl}phenyl) oxalate.

Claim ~~33~~ 32. The branched chain oxalic acid ester of claim 1, having the formula: bis(3,4,6-trichloro-2-{[2-(4-methylphenyl)ethoxy]carbonyl}phenyl) oxalate.

Claim ~~34~~ 33. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2-phenylpropoxy)carbonyl]phenyl} oxalate

Claim ~~35~~ 34. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(3-phenylpropoxy)carbonyl]phenyl} oxalate.

Claim ~~36~~ 35. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[1-naphthalenylmethoxy)carbonyl]phenyl} oxalate.

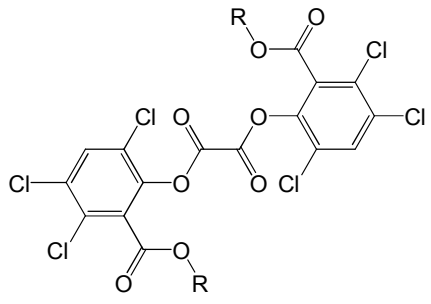
Claim ~~37~~ 36. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[2-naphthalenylmethoxy)carbonyl]phenyl} oxalate.

Claim ~~38~~ 37. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(2,2-diphenylethoxy)carbonyl]phenyl} oxalate.

Claim ~~39~~ 38. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(9-fluorenylmethoxy)carbonyl]phenyl} oxalate.

Claim ~~40~~ 39. The branched chain oxalic acid ester of claim 1, having the formula: bis{3,4,6-trichloro-2-[(9-anthracenylmethoxy)carbonyl]phenyl} oxalate.

Claim ~~41~~ 40. A chemical light system comprising an activator solution and a branched chain oxalic acid ester represented by the general formula:



R = CH_2A

wherein the group designated as R contains from 4-15 carbons, wherein the carbon of attachment of R to the oxygen is via a primary carbon, and wherein substructure A is composed of substituents selected from the group including alkyl chains, alkyl rings,

aromatic rings and combinations thereof such that R is nonlinear, said branched chain oxalic acid ester being selected from the group consisting of bis{3,4,6-trichloro-2-[(2-methylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(cyclopropylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylbutoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2,2-dimethylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(4-methylpentyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3,3-dimethylbutoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-ethylbutoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(cyclopentylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(4-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(5-methylhexyloxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(cyclohexylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(phenylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2-phenylethoxy)carbonyl]phenyl} oxalate, bis(3,4,6-trichloro-2-{[(2-methylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(3-methylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(4-methylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2,3-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2,4-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[3,4-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(3,5-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2,6-dimethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(2-ethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(3-ethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[(4-ethylphenyl)methoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[2-(2-methylphenyl)ethoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[2-(3-

methylphenyl)ethoxy]carbonyl}phenyl) oxalate, bis(3,4,6-trichloro-2-{[2-(4-methylphenyl)ethoxy]carbonyl}phenyl) oxalate, bis{3,4,6-trichloro-2-[(2-phenylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(3-phenylpropoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[1-naphthalenylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[2-naphthalenylmethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(2,2-diphenylethoxy)carbonyl]phenyl} oxalate, bis{3,4,6-trichloro-2-[(9-fluorenylmethoxy)carbonyl]phenyl} oxalate, and bis{3,4,6-trichloro-2-[(9-anthracenylmethoxy)carbonyl]phenyl} oxalate.