

CLAIMS

1. A stabilizer composition for halogen-containing polymers, the stabilizer comprising:
at least two tin-based centers; and
at least one bridging alkyl group between the at least two tin-based centers.
- 5 2. The stabilizer composition of claim 1, of the type $L_3Sn-X-SnL_3$.
3. The stabilizer composition of claim 1, of the type $L_2Sn-(X)(Y)-SnL_2$.
4. The stabilizer composition of claim 3 wherein X and Y are tin-terminated alkyl-based
bridging groups.
5. The stabilizer composition of claims 1-4 wherein X and/or Y is linear or branched,
10 saturated or unsaturated, with or without heteroatoms, with or without heterocycles, where alkyl
bridge is C1 to C80.
6. The stabilizer composition of claims 1-5 wherein L is a traditional ligand.
7. A thermal stabilizer composition for halogen containing polymers, the composition
comprising at least three repeating units of $-[SnL_2-X]_n$,
15 wherein X is a tin-terminated alkyl-based bridging group; and,
wherein L is a traditional ligand.
8. The thermal stabilizer of claim 7 wherein X is linear or branched, saturated or
unsaturated, with or without heteroatoms, with or without heterocycles, where alkyl bridge is C1
to C80.
- 20 9. The thermal stabilizer of claims 6, 7 or 8 wherein L is an ester of thioglycolic acid, a 2-
ME ester of C12-C18 fatty acids, a carboxylate, a maleate, a sulfide, 2-ME, a mercaptan, or any
combination of two or more of an ester of thioglycolic acid, a 2-ME ester of C12-C18 fatty acids,
a carboxylate, a maleate, a sulfide, 2-ME, or a mercaptan.
10. A composition of PVC, CPVC or a blend thereof, the composition comprising a
25 stabilizer, the stabilizer comprising:
at least two tin-based centers; and,
at least one bridging alkyl group between the at least two tin-based centers.
11. The composition of claim 10, wherein the stabilizer is of the type $L_3Sn-X-SnL_3$.
12. The composition of claim 10, wherein the stabilizer is of the type $L_2Sn-(X)(Y)-SnL_2$.
- 30 13. The composition of claim 12 wherein X and Y are tin-terminated alkyl-based bridging
groups.
14. The composition of claims 10-13 wherein X and/or Y is linear or branched, saturated or

unsaturated, with or without heteroatoms, with or without heterocycles, where alkyl bridge is C1 to C80.

15. The composition of claims 10-15 wherein L is a traditional ligand.

16. The composition of claim 15 wherein L is an ester of thioglycolic acid, a 2-ME ester of C12-C18 fatty acids, a carboxylate, a maleate, a sulfide, 2-ME, a mercaptan, or any combination of two or more of an ester of thioglycolic acid, a 2-ME ester of C12-C18 fatty acids, a carboxylate, a maleate, a sulfide, 2-ME, or a mercaptan.

17. A composition of PVC, CPVC or a blend thereof, the composition comprising a stabilizer, the stabilizer comprising at least three repeating units of $-\text{[SnL}_2\text{-X-]}_n$,

10 wherein X is a tin-terminated alkyl-based bridging group; and,
 wherein L is a traditional ligand.

18. The composition of claim 17 wherein X is linear or branched, saturated or unsaturated, with or without heteroatoms, with or without heterocycles, where alkyl bridge is C1 to C80.

19. The composition of claims 17 or 18 wherein L is an ester of thioglycolic acid, a 2-ME ester of C12-C18 fatty acids, a carboxylate, a maleate, a sulfide, 2-ME, a mercaptan, or any combination of two or more of an ester of thioglycolic acid, a 2-ME ester of C12-C18 fatty acids, a carboxylate, a maleate, a sulfide, 2-ME, or a mercaptan.

20. The composition of claims 10 or 17 wherein the composition contains at least 0.5% by weight of the stabilizer.

20 21. A method of preparing alkyl bridged thermal stabilizers of the type $\text{L}_3\text{Sn-X-SnL}_3$.

22. The invention as shown and described herein and subject to the ongoing and planned experimentation.