Claims

1. A process of producing tin(II) alkoxides comprising:

reacting anhydrous tin(II) chloride with n-alcohol and amine base or amine ligand in the presence of one or more non-polar aprotic solvents at a temperature of 25^0C to 38^0C to form a reaction mixture containing tin(II) alkoxide;

filtering the reaction mixture to acquire a filtrate thereof; and

drying the filtrate to obtain tin(II) alkoxides in a liquid preparation,

wherein the obtained tin(II) alkoxide is represented by a formula $Sn(OnR)_2$ where R is selected from the group consisting of CH_3, C_2H_5, nC_3H_7, nC_4H_9, nC_5H_{11}, nC_6H_{13}, nC_7H_{15}, or nC_8H_{17}, and

wherein the amine base or amine ligand is any one or a combination of dimethylamine, diethylamine, and diisopropylamine.

2. The process of claim 1, wherein the n-alcohol is butanol, hexanol or octanol.

3. The process of claim 1, wherein the non-polar aprotic solvent is one of *n*-heptane, *n*-hexane, cyclohexane, benzene, toluene, xylene, and tetrahydrofuran.

4. The process of claim 1, wherein the n-alcohol is 2-3 mole equivalence of the anhydrous tin(II) chloride.

5. The process of claim 1, wherein the drying step is performed under vacuum.

6. The process of claim 1, wherein the tin(II) alkoxides in the liquid form are substantially free from self-aggregation resulting in solid precipitation thereof.

7. The process of claim 1, wherein the reacting step is performed under inert atmosphere and the reaction mixture is subjected to continuous stirring.

8. The process of claim 1, wherein the tin(II) alkoxides prepared in the liquid form are fully solubilized in chloroform, toluene or n-heptane at room temperature.

9. The process of claim 1, wherein the non-polar aprotic solvent impedes self-aggregation of the formed tin(II) alkoxides.

10. Use of tin (II) alkoxide obtained by the process of claim 1 for ring-opening polymerization (ROP) in polyester synthesis by way of reacting cyclic ester monomer with alcohol.

Claims

1. A process of producing tin(II) alkoxides comprising:

reacting anhydrous tin(II) chloride with n-alcohol and amine base or amine ligand in the presence of one or more non-polar aprotic solvents at a temperature of 25^0C to 38^0C to form a reaction mixture containing tin(II) alkoxide, wherein the amine base or ligand is added to react with a pre-mixture of anhydrous tin(II) chloride and non-polar aprotic solvent at a temperature of 15-20^0C for 3 to 6 hours prior to adding the n-alcohol to form the mixture;

filtering the reaction mixture to acquire a filtrate thereof; and

drying the filtrate to obtain tin(II) alkoxides in a liquid preparation,

wherein the obtained tin(II) alkoxide is represented by a formula $Sn(OnR)_2$ where R is selected from the group consisting of CH_3, C_2H_5, nC_3H_7, nC_4H_9, nC_5H_{11}, nC_6H_{13}, nC_7H_{15}, or nC_8H_{17}, and

wherein the amine base or amine ligand is any one or a combination of dimethylamine, diethylamine, and diisopropylamine.

2. The process of claim 1, wherein the n-alcohol is butanol, hexanol or octanol.

3. The process of claim 1, wherein the non-polar aprotic solvent is one of *n*-heptane, *n*-hexane, cyclohexane, benzene, toluene, xylene, and tetrahydrofuran.

4. The process of claim 1, wherein the n-alcohol is 2-3 mole equivalence of the anhydrous tin(II) chloride.

5. The process of claim 1, wherein the drying step is performed under vacuum.

6. The process of claim 1, wherein the tin(II) alkoxides in the liquid form are substantially free from self-aggregation resulting in solid precipitation thereof.

7. The process of claim 1, wherein the reacting step is performed under inert atmosphere and the reaction mixture is subjected to continuous stirring.

8. The process of claim 1, wherein the tin(II) alkoxides prepared in the liquid form are fully solubilized in chloroform, toluene or n-heptane at room temperature.

9. The process of claim 1, wherein the non-polar aprotic solvent impedes self-aggregation of the formed tin(II) alkoxides.