CLAIMS

1. A process for preparing a first polyether ester polyol comprising reacting starting compounds having Zerewitinoff-active hydrogen atoms (a) with at least one alkylene oxide (b) in the presence of at least one amine (c) selected from the group consisting of tertiary amines and optionally substituted imidazole and in the presence of at least one fatty acid ester (d), wherein (d) is added before, during, or after the metered addition of (b) and, before the metered addition of component (b), a second polyether ester polyol (e) is mixed in an amount of from 3.0 to 20.0 weight %, based on the total weight of components (a), (b), (c), (d), and (e), with components (a), (c), and optionally (d).

2. The process of claim 1, wherein (e) is used in an amount of from 3.0 to 20.0 weight %, based on the total weight of components (a), (b), (c), (d), and (e).

3. The process of claim 1, wherein (e) is used in an amount of from 5.0 to 15.0 weight %, based on the total weight of components (a), (b), (c), (d), and (e).

4. The process of claim 1, wherein (a) has a melting point in the range of from 80 °C to 300 °C or decomposes at a temperature range of from 80 °C to 300 °C.

5. The process of claim 1, wherein (a) has a melting point in the range of from 95 °C to 280 °C or decomposes at a temperature range of from 95 °C to 280 °C.

6. The process of claim 1, wherein (a) is selected from the group consisting of saccharose, pentaerythritol, sorbitol, trimethylolpropane, bisphenol F, bisphenol A, 1,3,5-trihydroxybenzene, isomers of diaminotoluene, isomers of diaminodiphenylmethane, methylol-group-containing condensation products of formaldehyde and phenol, melamine, or urea, and Mannich bases.

7. The process of claim 1, wherein (b) is selected from the group consisting of ethylene oxide, propylene oxide, 1,2-butylene oxide, 2,3-butylene oxide, and styrene oxide.

8. The process of claim 1, wherein (c) is selected from the group consisting of N,N-dimethylbenzylamine, dimethylaminoethanol, dimethylaminopropanol, N-

methyldiethanolamine, trimethylamine, N,N-dimethylcyclohexylamine, N-methylpyrrolidine, N,N,N',N'-tetramethylethylenediamine, diazabicyclo[2,2,2]octane, 1,4-dimethylpiperazine, N-methylmorpholine, unsubstituted imidazole, and alkyl-substituted imidazole derivatives.

9. The process of claim 1, wherein (d) is used in the form of cottonseed oil, groundnut oil, coconut oil, linseed oil, palm-kernel oil, olive oil, corn oil, palm oil, castor oil, lesquerella oil, rape oil, soybean oil, jatropha oil, sunflower oil, herring oil, sardine oil, or tallow.

10. The process of claim 1, wherein (d) is used in the form of fatty acid esters based on lauric acid, myristic acid, palmitic acid, stearic acid, palmitoleic acid, oleic acid, erucic acid, linoleic acid, linolenic acid, elaeostearic acid or acharidonic acid.

11. The process of claim 1, wherein the metered addition of (b) and the addition of (d) take place simultaneously, or the metered addition of (b) in an amount of from 10 to 70 weight %, based on the total amount of (b) to be metered in, takes place first, followed by the addition of (d), which is followed by the metered addition of (b) in an amount of from 30 to 90 weight %, based on the total amount of (b) to be metered in.

12. The process of claim 1, wherein (e) has an OH number in the range of from 150 to 1150 mg KOH.

13. The process of claim 1, wherein (e) has an OH number in the range of 200 to 1000 mg KOH.

14. The process of claim 1, wherein said second polyether ester polyol (e) is identical to said first polyether ester polyol.

15. A polyether ester polyol prepared by the process of claim 1.

16. Polyether ester polyol according to claim 15, characterised in that the polyether ester polyol contains up to 1.0 wt.% of component (a), based on the amount of component (a) added initially.

17. A solid or foamed polyurethane material produced from (1) at least one polyether ester polyol obtained by the process of claim 1 and optionally further isocyanate-reactive components, (2) at least one organic polyisocyanate, (3) optionally in the presence of at least one foaming agent, (4) optionally in the presence of at least one catalyst, and (5) optionally in the presence of further additives.

CLAIMS

1. A process for preparing a first polyether ester polyol comprising reacting starting compounds having Zerewitinoff-active hydrogen atoms (a) with at least one alkylene oxide (b) in the presence of at least one amine (c) selected from the group consisting of tertiary amines and optionally substituted imidazole and in the presence of at least one hydroxyl group-free fatty acid ester (d), wherein a second polyether ester polyol (e) is first mixed in amounts of 3.0 to 20.0 weight %, based on all the components (a), (b), (c), (d), and (e), with components (a) and (c), followed by a first metered addition of (b) in an amount from 10 to 70 weight %, based on the total amount of (b) to be metered in; followed by the addition of (d), and followed by a second metered addition of the remainder of (b) in an amount from 30-90 weight %, based upon the total amount of (b) to be metered in, wherein (a) is selected from the group consisting of at least one one of saccharose, pentaerythritol, sorbitol, trimethylolpropane, bisphenol F, bisphenol A, 1,3,5-trihydroxybenzene, isomers of diaminotoluene, isomers of diaminodiphenylmethane, methylol-group-containing condensation products of formaldehyde and phenol, melamine or urea, and Mannich bases, and wherein the at least one alkylene oxide (b) is metered in continuously, and wherein at least 99 wt % of the starting compounds having Zerewitinoff-active hydrogen atoms (a) are incorporated into the polyether ester polyol.

2. The process of claim 1, wherein (e) is used in an amount of from 5.0 to 15.0 weight %, based on the total weight of components (a), (b), (c), (d), and (e).

3. The process of claim 1, wherein (a) has a melting point in the range of from 60° C. to 400° C. or decomposes at a temperature range of from 60° C. to 400° C.

4. The process of claim 1, wherein (a) has a melting point in the range of from 80° C. to 300° C. or decomposes at a temperature range of from 80° C. to 300° C.

5. The process of claim 1, wherein (a) has a melting point in the range of from 95° C. to 280° C. or decomposes at a temperature range of from 95° C. to 280° C.

6. The process of claim 1, wherein (b) is selected from the group consisting of ethylene oxide, propylene oxide, 1,2-butylene oxide, 2,3-butylene oxide, and styrene oxide.

7. The process of claim 1, wherein (c) is selected from the group consisting of N,N-dimethylbenzylamine, dimethylaminoethanol, dimethylaminopropanol, N-methyldiethanolamine, trimethylamine, N,N-dimethylcyclohexylamine, N-methylpyrrolidine, N,N,N',N'-tetramethylethylenediamine, diazabicyclo[2,2,2]octane, 1,4-dimethylpiperazine, N-methylmorpholine, unsubstituted imidazole, and alkyl-substituted imidazole derivatives.

8. The process of claim 1, wherein (d) is used in the form of fatty acid esters based on lauric acid, myristic acid, palmitic acid, stearic acid, palmitoleic acid, oleic acid, erucic acid, linoleic acid, linolenic acid, elaeostearic acid or acharidonic acid.

9. The process of claim 1, wherein (e) has an OH number in the range of from 150 to 1150 mg KOH.

10. The process of claim 1, wherein (e) has an OH number in the range of 200 to 1000 mg KOH.

11. The process of claim 1, wherein said second polyether ester polyol (e) is identical to said first polyether ester polyol.

12. A polyether ester polyol prepared by the process of claim 1.

13. A solid or foamed polyurethane material produced from (1) at least one polyether ester polyol obtained by the process of claim 1 and optionally further isocyanate-reactive components, (2) at least one organic polyisocyanate, (3) optionally in the presence of at least one foaming agent, (4) optionally in the presence of at least one catalyst, and (5) optionally in the presence of further additives.