C L A I M S

1. A process for the preparation of a polyether polyol, said process comprising polymerising one or more alkylene oxides in the presence of a multimetal cyanide complex catalyst and an initiator compound, wherein the process is carried out in a reactor vessel equipped with means for agitating its contents and the one or more alkylene oxides are supplied to an agitated mixture comprising the multimetal cyanide complex catalyst and the initiator via a feed inlet device, said feed inlet device comprising a sparger.

2. A process as claimed in claim 1, wherein the one or more alkylene oxides are selected from the group consisting of ethylene oxide, propylene oxide, butylenes oxides and mixtures thereof.

3. A process as claimed in claim 1 or claim 2, wherein the initiator compound is a compound having from 2 to 6 active hydrogen atoms.

4. A reactor system for the preparation of polyols, said reactor system comprising:

(a) a reactor vessel;

(b) means for agitating the contents of the reactor vessel;

(c) an inlet tube suitable for supplying initiator and catalyst to the reactor system;

(d) an outlet tube for removing material from the reactor system; and

(e) a feed inlet device for the addition of alkylene oxides to the reactor vessel, said feed inlet device comprising a sparger.

5. A process as claimed in any one of claims 1 to 3 or

a reactor system as claimed in claim 4, wherein the agitating means comprises one or more impellers.

6. A process as claimed in any one of claims 1 to 3 or a reactor system as claimed in claim 4, wherein the agitating means comprises a jet of the reaction mixture.

7. A process or a reactor system as claimed in any preceding claim, wherein the sparger is in the form of a ring.

8. A process or a reactor system as claimed in claim 7, wherein the sparger comprises a plurality of concentric ring passageways.

9. A process or a reactor system as claimed in any preceding claim wherein the means for agitating comprise a drive for imparting mixing energy to the reactor contents.

10. A process or a reactor system as claimed in any preceding claim wherein the sparger is positioned such that an inlet flow from one or more holes of the sparger intersects or meets with a reactor flow produced by the means for agitating.

11. A process or reactor system as claimed in claim 5, wherein the sparger is positioned directly above the lowest of the one or more impellers.

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1. A process for the preparation of a polyether polyol, said process comprising polymerising one or more alkylene oxides in the presence of a multimetal cyanide complex catalyst and an initiator compound, wherein the process is carried out in a reactor vessel equipped with means for agitating its contents and the one or more alkylene oxides are supplied to an agitated mixture comprising the multimetal cyanide complex catalyst and the initiator via a feed inlet device, said feed inlet device comprising a sparger, wherein the agitating means comprises one or more impellers or wherein the agitating means comprises a jet of the reaction mixture.

2. A process as claimed in claim 1, wherein the one or more alkylene oxides are selected from the group consisting of ethylene oxide, propylene oxide, butylenes oxides and mixtures thereof.

3. A process as claimed in claim 1 or claim 2, wherein the initiator compound is a compound having from 2 to 6 active hydrogen atoms.

4. A process as claimed in any preceding claim, wherein the sparger is in the form of a ring.

5. A process as claimed in claim 4, wherein the sparger comprises a plurality of concentric ring passageways.

6. A process as claimed in any preceding claim wherein the means for agitating comprise a drive for imparting mixing energy to the reactor contents.

7. A process as claimed in any preceding claim wherein the sparger is positioned such that an inlet flow from one or more holes of the sparger intersects or meets with

a reactor flow produced by the means for agitating.

8. A process as claimed in claim 1, wherein the agitating means comprises one or more impellers and wherein the sparger is positioned directly above the lowest of the one or more impellers.