CLAIMS

1. A polybutadiene modified polymer polyol comprising the free-radical polymerization product of:

(A) one or more base polyols;

(B) at least one preformed stabilizer;

(C) ethylenically unsaturated monomers comprising styrene and acrylonitrile;

and

(D) polybutadiene

in the presence of

(E) at least one free radical polymerization catalyst;

and, optionally,

(F) one or more chain transfer agents;

wherein said polybutadiene is introduced into the polymer polyols through said preformed stabilizer and/or as a separate reactant, and said polybutadiene is present in the polymer polyol in an amount ranging from 0.03 to 1.0% by weight, based on 100% by weight of the polymer polyol.

2. The polybutadiene modified polymer polyol of claim 1, wherein said polybutadiene (D) is present in the polymer polyol in an amount ranging from 0.1 to 0.5% by weight, based on 100% by weight of the polymer polyol.

3. The polybutadiene modified polymer polyol of claim 1, wherein said one or more base polyols (A) comprise at least one polyether polyol having a functionality of about 2 to about 8 and an OH number ranging from about 10 mg KOH/g to about 1000 mg KOH/g.

4. The polybutadiene modified polymer polyol of claim 1, wherein said polybutadiene (D) comprises homopolymers of polybutadiene having a number average molecular weight of 1000 g/mole to 10,000 g/mole.

5. The polybutadiene modified polymer polyol of claim 1, wherein styrene and acrylonitrile are present in a weight ratio of from 80:20 to 20:80.

6. The polybutadiene modified polymer polyol of claim 1, wherein the solids content of said polymer polyols ranges from about 20% by weight up to about 75% by weight.

7. The polybutadiene modified polymer polyol of claim 1, wherein a chain transfer agent comprising isopropanol is present.

8. The polybutadiene modified polymer polyol of claim 1, wherein said free radical polymerization catalyst (E) is selected from the group consisting of peroxides, azo compounds and mixtures thereof.

9. A polybutadiene modified polymer polyol comprising the free-radical polymerization product of:

(A) one or more base polyols;

(B) at least one preformed stabilizer;

(C) ethylenically unsaturated monomers comprising styrene and acrylonitrile;

with

(D) from 0.03 to 1% by weight, based on 100% by weight of the total polymer polyol, of polybutadiene;

in the presence of

(E) at least one free radical polymerization catalyst; and,

optionally,

(F) one or more chain transfer agents.

10. A polybutadiene modified polymer polyol comprising the free-radical polymerization product of:

(A) one or more base polyols;

(B) at least one preformed stabilizer which comprises from 0.5 to 13% by weight, based on 100% by weight of the preformed stabilizer, of polybutadiene;

with

(C) one or more ethylenically unsaturated monomers;

in the presence of

(E) at least one free radial polymerization catalyst;

and, optionally,

(F) one or more chain transfer agents.

11. The polybutadiene modified polymer polyol of claim 10, wherein from 1 to 6% by weight of polybutadiene is present in the preformed stabilizer.

12. A process for the preparation of a polybutadiene modified polymer polyol comprising

(I) free-radically polymerizing:

(A) one or more base polyols;

(B) at least one preformed stabilizer;

(C) ethylenically unsaturated monomers comprising styrene and acrylonitrile; and

(D) polybutadiene

in the presence of

(E) at least one free radical polymerization catalyst;

and, optionally,

(F) one or more chain transfer agents;

wherein said polybutadiene is introduced into the polymer polyol through said preformed stabilizer and/or as a separate reactant, and said polybutadiene is present in the polymer polyol in an amount ranging from 0.03 to 1.0% by weight, based on 100% by weight of the polymer polyol.

13. The process of claim 12, wherein said polybutadiene (D) is present in the polymer polyol in an amount ranging from 0.1 to 0.5% by weight, based on 100% by weight of the polymer polyol.

14. The process of claim 12, wherein said one or more base polyols (A) comprise at least one polyether polyol having a functionality of about 2 to about 8 and an OH number ranging from about 10 mg KOH/g to about 1000 mg KOH/g.

15. The process of claim 12, wherein said polybutadiene (D) comprises homopolymers of polybutadiene having a number average molecular weight of 1000 g/mole to 10,000 g/mole.

16. The process of claim 12, wherein styrene and acrylonitrile are present in a weight ratio of from 80:20 to 20:80.

17. The process of claim 12, wherein the solids content of said polymer polyols ranges from about 20% by weight up to about 75% by weight.

18. The process of claim 12, wherein a chain transfer agent comprising isopropanol is

present.

19. The process of claim 12, wherein said free radical polymerization catalyst (E) is selected from the group consisting of peroxides, azo compounds and mixtures thereof.

20. A process for the preparation of a polymer polyol comprising:

(I) free-radically polymerizing

(A) one or more base polyols;

(B) at least one preformed stabilizer;

(C) ethylenically unsaturated monomers comprising styrene and acrylonitrile;

with

(D) from 0.03 to 1% by weight, based on the weight of total polymer polyol, of polybutadiene;

in the presence of

(E) at least one free radial polymerization catalyst;

and, optionally,

(F) one or more chain transfer agents.

21. A process for the preparation of a polybutadiene modified polymer polyol comprising:

(I) free-radically polymerizing

(A) one or more base polyols;

(B) at least one preformed stabilizer which comprises from 0.5 to 13% by weight, based on 100% by weight of the preformed stabilizer, of polybutadiene;

with

(C) one or more ethylenically unsaturated monomers;

in the presence of

(E) at least one free radial polymerization catalyst;

and, optionally,

(F) one or more chain transfer agents.

22. The process of claim 21, wherein from 1 to 6% by weight of polybutadiene is present in the preformed stabilizer.

23. A foam comprising the reaction product of:

(1) a polyisocyanate component,

with

(2) an isocyanate-reactive component comprising the polybutadiene modified polymer polyol of claim 1;

in the presence of

(3) one or more catalysts,

(4) one or more blowing agents,

and

(5) one or more surfactants.

24. A polyurethane foam comprising the reaction product of:

(1) a polyisocyanate component,

with

(2) an isocyanate-reactive component comprising the polybutadiene modified polymer polyol of claim 9;

in the presence of

(3) one or more catalysts,

(4) one or more blowing agents,

and

(5) one or more surfactants.

25. A polyurethane foam comprising the reaction product of:

(1) a polyisocyanate component,

with

(2) an isocyanate-reactive component comprising the polybutadiene modified polymer polyol of claim 10;

in the presence of

(3) one or more catalysts,

(4) one or more blowing agents,

and

(5) one or more surfactants.

26. A process for preparing a polyurethane foam, comprising reacting:

(1) a polyisocyanate component,

with

(2) an isocyanate-reactive component comprising the polybutadiene modified polymer polyol of claim 1;

in the presence of

(3) one or more catalysts,

(4) one or more blowing agents,

and

(5) one or more surfactants.

27. A process for preparing a polyurethane foam, comprising reacting:

(1) a polyisocyanate component,

with

(2) an isocyanate-reactive component comprising the polybutadiene modified polymer polyol of claim 9;

in the presence of

(3) one or more catalysts,

(4) one or more blowing agents,

and

(5) one or more surfactants.

28. A process for preparing a polyurethane foam, comprising reacting:

(1) a polyisocyanate component,

with

(2) an isocyanate-reactive component comprising the polybutadiene modified polymer polyol of claim 10;

in the presence of

(3) one or more catalysts,

(4) one or more blowing agents,

and

(5) one or more surfactants.