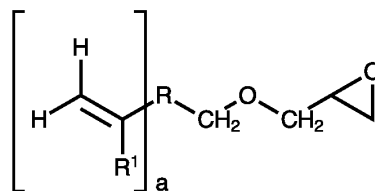


WHAT IS CLAIMED IS:

1. A process for making a polymer polyol, comprising polymerizing one or more low molecular weight ethylenically unsaturated monomers that have a molecular weight of no greater than 150 in a continuous liquid polyol phase and in the presence of a stabilizer to form a dispersion of solid polymer particles in the continuous liquid polyol phase, wherein the stabilizer includes (i) a macromer produced in a reaction of a hydroxyl-containing polyether with an epoxide compound having a polymerizable carbon-carbon double bond; (ii) a pre-formed polymer formed by polymerizing a carbon-carbon double bond of such macromer, or (iii) a mixture of (i) and (ii) wherein the epoxide compound is represented by structure I:



(I)

where a is a positive number, R is a covalent bond or an organic linking group and R¹ is hydrogen or hydrocarbyl group having up to 6 carbon atoms.

2. The process of claim 1, wherein at least 75% by weight of the stabilizer is the macromer.

3. The process of claim 2, wherein at least 95% by weight of the stabilizer is the macromer.

4. The process of any of claims 1-3, wherein the hydroxyl-containing polyether is a random copolymer of a mixture of 84 to 90% propylene oxide and 10 to 16% ethylene oxide, based on the weight of the polyether.

5. The process of any of claims 1-4, wherein the macromer has a molecular weight from 8000 to 15,000.

1
2 6. The process of any preceding claim, wherein the macromer contains an
3 average of 4 to 6 hydroxyl groups per molecule and 1 to 1.5 polymerizable carbon-carbon
4 double bonds per molecule.

5
6 7. The process of any preceding claim, wherein the epoxide compound has a
7 molecular weight of up to 300.

8
9 8. The process of any preceding claim, wherein the epoxide compound is a
10 vinyl aromatic compound or an isopropenyl aromatic compound.

11
12 9. The process of any preceding claim, wherein the epoxide compound is one
13 or more of isopropenyl benzyl glycidyl ether, vinyl benzyl glycidyl ether, and allyl
14 glycidyl ether.

15
16 10. The process of any preceding claim, wherein the low molecular weight
17 ethylenically unsaturated monomers include at least one of styrene and acrylonitrile.

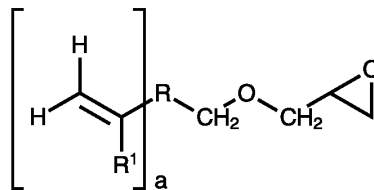
18
19 11. The process of claim 10, wherein the low molecular weight ethylenically
20 unsaturated monomers include styrene and acrylonitrile at a weight ratio of 85:15 to
21 50:50.

22
23 12. A polymer polyol made in accordance with any of claims 1-11.

24
25 13. A polyurethane foam which is produced by reacting a polymer polyol of
26 claim 12 with an organic polyisocyanate in the presence of a blowing agent.

27
28 14. A method of producing a capped polyether, comprising the steps of a)
29 producing a polyether in the presence of an alkali metal hydroxide or an alkali metal
30 alkoxide polymerization catalyst to produce a polyether having terminal $-O\cdot M^+$ moieties,
31 which M represents an alkali metal, and b) combining the polyether having terminal $-O\cdot$
32 M^+ moieties with an epoxide compound, and reacting the polyether and epoxide

- 1 compound to produce a capped polyether, wherein the epoxide compound is represented
2 by structure I:



(I)

- 3
4 where a is a positive number, R is a covalent bond or an organic linking group and R¹ is
5 hydrogen or hydrocarbyl group having up to 6 carbon atoms.

6

7