WHAT IS CLAIMED IS:

1. A process for producing a polyol comprising:

conducting an Aldol addition reaction in a reaction zone containing an amine catalyst to thereby produce a reaction mixture comprising a hydroxy aldehyde, wherein one or more amine salts are produced during the Aldol addition reaction;

contacting the amine salts with a base to thereby cause dissociation of at least a portion of the amine salts; and

wherein the base is fed to the reaction zone via a feed to and upstream of the reaction zone.

2. The process according to claim 1, wherein the Aldol addition reaction includes contacting formaldehyde and another aldehyde with the amine catalyst.

3. The process according to claim 1or claim 2, wherein the hydroxy aldehyde comprises 3-hydroxypropanal, dimethylolethanal, trimethylolethanal (pentaerythrital), 3-hydroxybutanal (acetaldol), 3-hydroxy-2-ethylhexanal (butyl aldol), 3-hydroxy-2-methylpentanal (propyl aldol), 2-methylolpropanal, 2,2-dimethylolpropanal, 3-hydroxy-2-methylbutanal, 3-hydroxypentanal, 2-methylolbutanal, 2,2-dimethylolbutanal, or hydroxypivaldehyde.

4. The process according to claim 2, wherein said another aldehyde comprises formaldehyde, propionaldehyde, n-butyraldehyde, isobutyraldehyde, valeraldehyde, 2-methyl-butyraldehyde, 3-methylbutyraldehyde (isovaleraldehyde), 2,2-dimethylpropionaldehyde (pivalinaldehyde), caproaldehyde, 2-methylvaleraldehyde, 3-methylvaleraldehyde, 4-methyl-valeraldehyde, 2-ethylbutyraldehyde, 2,2-dimethylbutyraldehyde, 3,3-dimethyl-butyraldehyde,
caprylic aldehyde, capric aldehyde or glutaraldehyde.

5. The process according to claim 2, wherein the another aldehyde is isobutyraldehyde.

6. The process according to any of claims 1-5, wherein the base is present in the reaction zone in an amount of about 500 ppm to about 3000 ppm by weight.

7. The process according to any of claims 1-6, wherein the base is present in an amount sufficient to achieve dissociation of the amine salts.

8. The process according to any of claims 1-7, wherein the base is present in an amount that is less than 10 weight percent excess compared to the weight percent of the amine salts.

9. The process according to any of claims 1-8, further comprising hydrogenating the hydroxy aldehyde to form a polyol.

10. The process according to claim 9, wherein the polyol is neopentyl glycol.