Claims

1. Ethanolamines, selected from monoethanolamine, diethanolamine, triethanolamine and mixtures thereof, wherein the molar share of deuterium is $\leqslant$ 100 ppm, preferably in the range of from 10 to $\leqslant$ 98 ppm, more preferably in the range of from 10 to $\leqslant$ 95 ppm, most preferably in the range of from 10 to $\leqslant$ 90 ppm, based on the total hydrogen content.

2. Process for making ethanolamines according to claim 1, selected from monoethanolamine, diethanolamine, triethanolamine and mixtures thereof, wherein said process comprises the following steps:
   (a) providing hydrogen with a molar share of deuterium $\leqslant$ 100 ppm, based on the total hydrogen content, by electrolysis based on electrical power generated at least in part from non-fossil energy,
   (b) reacting the hydrogen from step (a) with nitrogen to form ammonia,
   (c) reacting the hydrogen from step (a) with carbon oxides, preferably carbon dioxide to form methanol,
   (d) converting the methanol from step (c) to ethylene and further to ethylene oxide,
   (e) converting the ammonia from step (b) with ethylene oxide from step (d) to ethanolamines in one or more steps.

3. The process according to claim 2 wherein the electrical power is generated at least in part from wind power, solar energy (thermal, photovoltaic and concentrated), hydroelectricity (tidal power, wave power, hydroelectric dams, In-river-hydrokinetics), geothermal energy, ambient heat captured by heat pumps, bioenergy (biofuel, biomass), the renewable part of waste or nuclear power (fission).

4. The process according to claim 2 or 3, wherein step (a) is a water electrolysis, preferably PEM water electrolysis, alkaline water electrolysis, or AEM water electrolysis.

5. The process according to any one of claims 2 to 4, wherein carbon dioxide is employed in step (c), which is preferably captured from industrial flue gases or from ambient air.

6. The process according to any one of claims 2 to 5 wherein the ethylene oxide in step (d) is obtained by
   (d1) a methanol-to-olefin process, preferably with a zeolite catalyst, wherein ethylene is obtained, followed by
   (d2) epoxidation of ethylene, preferably with a silver-based catalyst.

7. The process according to any one of claims 2 to 6, wherein ammonia from step (b), ethylene oxide from step (d) are reacted in one or more steps to a reaction product comprising monoethanolamine, diethanolamine and triethanolamine.

8. Use of the ethanolamines according to claim 1, preferably monoethanolamine and/or diethanolamine, as liquid or solid CO_2 absorbents in CO_2 capturing processes.