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adding a preselected quantity of an ether-based solvent to said ammonium borohydride to form ammonia borane ( $\text{NH}_3\text{BH}_3$ ) at a yield greater than 90 percent by weight and a purity greater than 90 percent.

2. The method of claim 1, wherein said ether-based solvent is selected from the group consisting of: glyme; diglyme; ether; tetrahydrofuran, and combinations thereof.

3. The method of claim 2, wherein said liquid ammonia is not removed.

4. The method of claim 2, wherein said liquid ammonia is not removed prior to addition of said ether-based solvent.

5. The method of claim 2, wherein said ether-based solvent is added prior to addition of said liquid ammonia.

6. The method of claim 1, wherein said temperature is about  $15^\circ\text{C}$ . and said pressure is an ammonia partial pressure of about 7.0 atm.

7. The method of claim 1, wherein said temperature is about  $-40^\circ\text{C}$ . and said pressure is a partial pressure of ammonia of about 1 atm.

8. The method of claim 1, wherein said temperature is selected in the range from about  $-80^\circ\text{C}$ . to about  $25^\circ\text{C}$ .

9. The method of claim 1, wherein said temperature is selected in the range from about  $-40^\circ\text{C}$ . to about  $25^\circ\text{C}$ .

10. The method of claim 1, wherein said pressure is a partial pressure of ammonia selected in the range from about 1 atm to about 20 atm.

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11. The method of claim 1, wherein said temperature is in the range from about  $0^\circ\text{C}$ . to about  $25^\circ\text{C}$ . and said pressure is a partial pressure of ammonia selected in the range from about 100 psia to about 300 psia.

12. The method of claim 1, wherein said temperature is the same for said reacting step and for said adding step.

13. The method of claim 1, wherein said temperature is held constant for said reacting step and for said adding step.

14. The method of claim 1, wherein said borohydride salt includes a constituent selected from the group consisting of: Na, Li, K, Mg, Ca, and combinations thereof.

15. The method of claim 1, wherein said ammonium salt includes an anion selected from the group consisting of:  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{F}^-$ ,  $\text{I}^-$ ,  $\text{SO}_4^{2-}$ ,  $\text{CO}_3^{2-}$ ,  $\text{HCO}_2^{-1}$ ,  $\text{PO}_4^{3-}$ , and combinations thereof.

16. The method of claim 1, further including the steps of refluxing ammonia and continuously venting  $\text{H}_2$  gas during formation of said ammonium borohydride intermediate.

17. The method of claim 1, wherein yield of AB is greater than or equal to about 99%.

18. The method of claim 1, further including the step of isolating said AB product.

19. The method of claim 17, wherein the step of isolating said AB product includes filtering said AB product.

20. The method of claim 1, wherein said method is performed in a continuous reaction process.

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