

(19) World Intellectual Property Organization
International Bureau



G00002

(43) International Publication Date
4 July 2002 (04.07.2002)

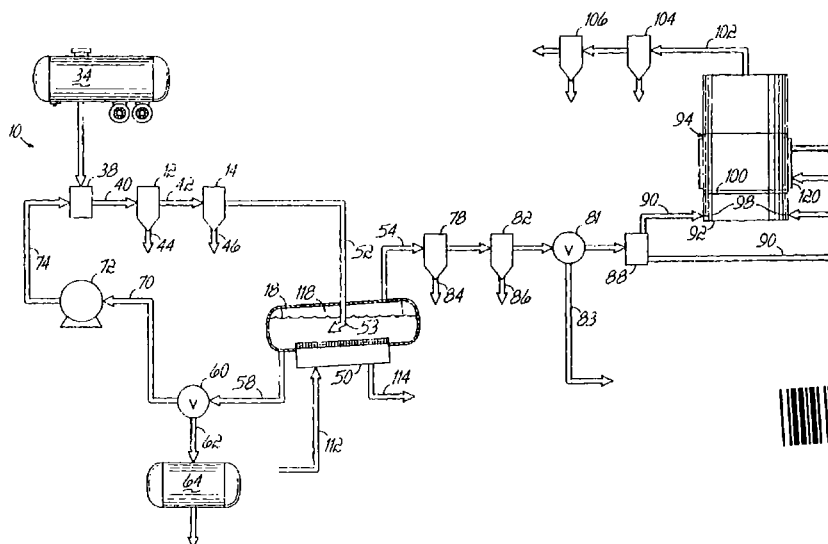
PCT

(10) International Publication Number
WO 02/051752 A3

- (51) International Patent Classification⁷: **C01C 1/02**
- (21) International Application Number: PCT/US01/44100
- (22) International Filing Date:
27 November 2001 (27.11.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/749,201 27 December 2000 (27.12.2000) US
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report

[Continued on next page]

(54) Title: PROCESS AND VAPORIZER FOR PRODUCING AMMONIA WITH ULTRA-LOW METALS CONTENT



162162

WO 02/051752 A3

(57) **Abstract:** Commercial grade ammonia is purified for use in production of semiconductors by initially passing the liquid ammonia through a liquid phase oil separation system (14). This removes the vast majority of the impurities. The filtered liquid ammonia is then passed through a vaporizer (18) which quiescently forms ammonia vapor and prevents entrainment of impurities within the ammonia vapor. The vapor passes through a vapor filtration system (78, 82) and subsequently to a bubble column (94). The bubble column (94) is designed so that the bubbles are small enough and travel at a rate which ensures that any entrapped particle within the bubbles will have time to migrate to the surface of the bubble and thereby pass through the liquid phase. The collected vapor is directed through subsequent vapor filters (104, 106) and is collected. If anhydrous ammonia is desired, the ammonia vapor is collected upstream of the bubble column.



(88) Date of publication of the international search report:
6 February 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.