

United States Patent [19]

Brewer

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[54] **EDGE BEAD REMOVAL PROCESS FOR SPIN ON FILMS**

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[51] Int. Cl.⁴ **B05D 5/12; B05D 3/12**

[52] U.S. Cl. **427/240; 427/336; 437/231; 437/233**

[58] Field of Search **427/240, 82 X, 336; 437/231, 233**

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[57] **ABSTRACT**

A process for removing the edge bead of films that are spun onto a planar substrate, which edge bead collects at the edge of the substrate. In processes such as the manufacture of integrated circuits, the edge bead of brittle substances such as glass, SiO₂, tends to shatter upon subsequent high temperature processing and generates particles which contaminate further processing of the integrated circuits. A pulsed or repeated application of a solvent on the edge of the substrate, a backwash step of constant rotational speed and a deceleration over time provides a means of smoothing and gradual cutting back of the spun on film edge. The deceleration spin has a starting rotational speed and a final rotational speed; and the subsequent backwash step is always at a constant rotational speed lower than the starting speed of the previous deceleration spin.

17 Claims, 9 Drawing Figures