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BONDED ABRASIVE ARTICLE AND METHODS FOR FORMING SAME

BACKGROUND

Field of the Disclosure

[0001] The following is directed to abrasive articles, and more particularly, to abrasive articles having at least one hydrophilic species.

Description of the Related Art

[0002] Abrasive articles incorporating abrasive particles are useful for various material removal operations including grinding, finishing, polishing, and the like. Depending upon the type of abrasive material, such abrasive particles can be useful in shaping or grinding various materials in the manufacturing of goods. In particular, thin grinding wheels can be used to cut metals, such as steel, stainless steel, and aluminum; polyvinylchloride and other plastics; composites; woods; and ceramics. For example, thin abrasive wheels can be used to cut metal studs, pipes, or tiles.

[0003] However, many bonded abrasive systems suffer from degradation in performance over time. In the case of thin wheel cutting systems, degradation includes a reduction in the amount of cutting or grinding that can be achieved before the thin wheeled abrasive wears out. In addition, degradation can include an increase in wear rate of the abrasive article or a reduction in grind rate on a work piece. The presence of water in bonded abrasive systems which is absorbed over time during storing and usage of the bonded abrasive system can lead to degradation in performance.

[0004] The industry continues to demand improved abrasive materials and abrasive articles.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The present disclosure may be better understood, and its numerous features and advantages made apparent to those skilled in the art by referencing the accompanying drawings.

[0006] FIG. 1 is an illustration of a flow chart of an embodiment of a method of making an abrasive article in accordance with an embodiment.

[0007] FIG. 2 is an illustration of a top view of an abrasive article in accordance with an embodiment.

[0008] FIG. 3A and 3B are photographs of an embodiment of bulk molding compound in a raw form and after processing, respectively.

[0009] FIGS. 4A-4F are illustrations of sectional side views of embodiments of abrasive articles.