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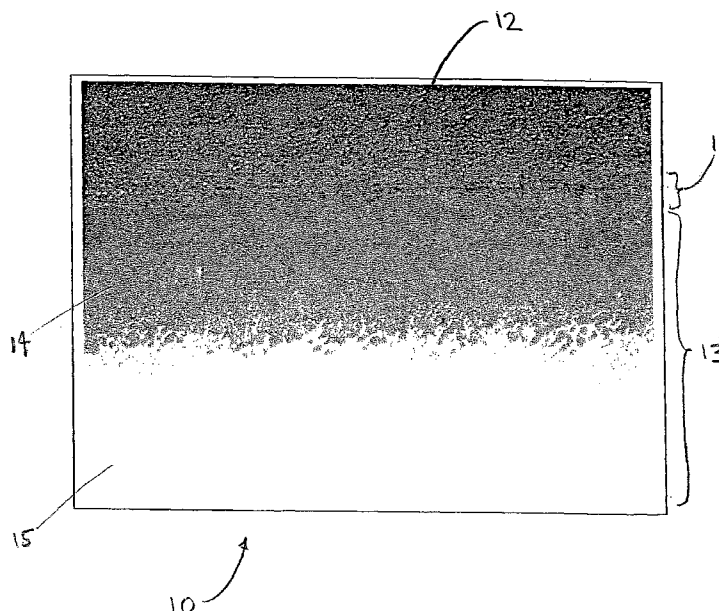
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(54) Title: **Al₂O₃ CERAMIC TOOLS WITH DIFFUSION BONDING ENHANCED LAYER**



(57) Abstract: The present invention relates to ceramic cutting tools, such as, a aluminum oxide with zirconium oxide ceramic cutting tool with diffusion bonding enhanced layer and CVD coatings, particularly useful for machining modern metal materials. The method comprises a chemical reaction with a mixture including nitrogen and aluminum chloride introduced to form a diffusion bonding enhanced layer between the ceramic substrate and the CVD coatings. Thus formed diffusion bonding is highly adherent to the aluminum oxide with zirconium oxide ceramic substrate and significantly enhances the CVD coating properties, and thus improving the machining performance in terms of the tool life of zirconium-based aluminum oxide with zirconium oxide ceramic cutting tools.

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