

Published: 11 November 2019

# Electrochemical Behavior of $\text{AlB}_{12}$ –AlN Composites in Natural Environments

V.M. Talash , O. O. Vasiliev, V.B. Muratov, Yu. B. Rudenko & G.I. Malyshevska

*Powder Metallurgy and Metal Ceramics* **58**, 329–333 (2019) | [Cite this article](#)

**34** Accesses | **1** Citations | [Metrics](#)

Electrochemical processes occurring on ceramic  $\text{AlB}_{12}$ –AlN composites induced by polarization in a 3% NaCl aqueous solution at 37°C are examined for the first time. Aluminum dodecaboride  $\text{AlB}_{12}$  is found to dissolve so slowly that it hardly influences the composites' corrosion resistance in actual environments. A higher aluminum nitride amount in the composite increases its electrochemical corrosion resistance. The electrochemical behavior of aluminum dodecaboride and ceramic nitride composites generally allows the materials to retain their service properties in natural corrosive environments even at 37°C.