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[\[Image PDF \(379K\)\]](#) [\[References\]](#)**Corrosion-related Changes on Ti-based Orthodontic Brackets in Acetic NaF Solutions: Surface Morphology, Microhardness, and Element Release**[Eun-Hee KANG](#)<sup>1)</sup>, [Soo-Byung PARK](#)<sup>1)</sup>, [Hyung-II KIM](#)<sup>2)</sup> and [Yong Hoon KWON](#)<sup>2)</sup>

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**Abstract:**

This study sought to investigate the effects of acetic NaF solutions on titanium and Ti alloy brackets. To this end, two different brackets were immersed in various NaF-containing solutions for three days. The Equilibrium Ti (EQ) bracket was composed of Ti only, whereas the Ortho 2 (OR) bracket was composed of Ti (base) and Ti-6Al-4V (wings). Brackets that were immersed in the acetic NaF solution of pH 3.5 yielded no reliable surface microhardness values due to corrosion. In other test solutions, however, there was minimal reduction (at best 3%) in microhardness. Further on microhardness, the values of the OR bracket at the base and wings were different. On the release of elements, it was significant only in the acetic NaF solution of pH 3.5. However, the release of Al ( $6.11 \pm 0.93$  ppm) and V ( $1.16 \pm 0.40$  ppm) in this solution was low. In conclusion, an acetic NaF solution of low pH could damage Ti-based orthodontic brackets.

**Key words:**[Corrosion](#), [Bracket](#), [NaF solution](#)[\[Image PDF \(379K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)

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