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[\[PDF \(1577K\)\]](#) [\[References\]](#)**Effect of chromium content on mechanical properties of casting Ti-Cr alloys**[Masayuki HATTORI](#)¹⁾, [Shinji TAKEMOTO](#)¹⁾, [Masao YOSHINARI](#)¹⁾, [Eiji KAWADA](#)¹⁾
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Abstract:

The mechanical properties of a series of binary Ti-Cr alloys were investigated. Chromium content ranged from 5 to 20 mass%. Dumbbell- and disk-shaped specimens of each alloy were obtained by casting for mechanical testing and microstructural observation. Yield strength (YS) at 0.2%, tensile strength (TS), elongation (EL) and Vickers hardness (Hv) were determined. The TS and YS of Ti-15Cr were similar to those of Ti-20Cr at approximately 880 or 900 MPa and higher than those of cp-Ti by nearly 55%. Among all Ti-Cr alloys, Ti-10Cr showed the lowest EL. At 50 μm below the surface, Hv ranged from 370 to 420. Addition of 15 or 20 mass% chromium to titanium yielded sufficient strength and relatively high elongation values. Judging from the results of the mechanical properties, the suitability of Ti-Cr alloys with 15 or 20 mass% chromium for use in dental prostheses.

Key words:[Mechanical property](#), [Titanium alloys](#), [Titanium casting](#)[\[PDF \(1577K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)[BibTeX](#)

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