

##C865198 : MAJOR PROSTHODONTICS

KEY WORD : MECHANICAL PROPERTIES / RECYCLED / COBALT-CHROMIUM ALLOYS

PARINTORN HARIRAKSAPITAK : MECHANICAL PROPERTIES OF THE RECYCLED COBALT-CHROMIUM ALLOYS. THESIS ADVISOR : ASSO.PROF. PANUPONG WONGTHAI, 161 pp. ISBN 974-637-250-5

This research objected to study the effects of the mixing ratios between the previously used alloys and the new one and the times of reusing the alloys on the mechanical properties of the castings compared with The American Dental Association specification number 14 for dental chromium-cobalt casting alloys, mechanical properties of the new alloys and each another group of the specimen.

Materials and method were in accordance with ADA specification no.14 for dental chromium-cobalt casting alloys. There were 4 groups of the mixing ratios between the previously used and the new alloys by weight which were 100% old alloys, 75% old and 25% new alloys, 50% old and 50% new alloys and 25% old and 75% new alloys. The old alloys used was melted and cast for 1,2 and 3 times. Specimens were determined for tensile strength, strain while the tensile strength was 5,000 to 60,000 psi, percentage elongation and Rockwell surface hardness. The results are concluded as follow:

1. Recycling the alloys by mixing 25% old alloys previously used 1 time with 75% new alloys is the only one method that the mechanical properties are not below minimum ADA specification.
2. Comparing with the new alloys, recycling the alloys degeneratively changes the tensile strength and percentage elongation at significant level 95% except when mixing 25% old alloys previously used 1 time with 75% new alloys.
3. The amount of the old alloys and the times of recycle are the factors that reduce the mechanical properties of the casting. Effects of these two factors enhance with the increasing amount of the old alloys and the times of recycle.

ภาควิชา.....ทันตกรรมประดิษฐ์
สาขาวิชา.....ทันตกรรมประดิษฐ์
ปีการศึกษา.....2540

ลายมือชื่อนิติ.....
ลายมือชื่ออาจารย์ที่ปรึกษา.....
ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....