

# 가철식국부의치주조체 제작시 실패원인과 그 방지책에 대하여

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## I. 서론

가

가

1.

<	>		
1. Lingual bar	:		8
2. Lingual bar	:		12
3.	Indirect retainer	:	3
4. Lingual plate	:		3
5. Lingual plate	:		2
6. retainer shoulder	:		8
			<hr/>
			36

## II. 본론

### 조사방법

1. 가
  2. 가.
  3. 가.
- <void , , ,  
(fatigue) , ,  
>

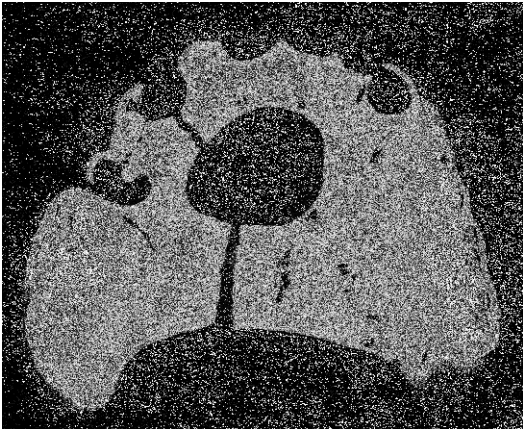
<	>		
1. anterior palatal bar	:		3
2. mid palatal bar	:		3
3. posterior palatal bar	:		1
4. palatal bar	saddle	:	2
			<hr/>
			9

### 조사한 결과

1. -Cr base alloy, Ni-Cr base alloy(regalloy)
  2. < 1>
  3. 가 50% 가  
75% 가
- 1) Lingual bur
  - 2) Retainer shoulder 가
  - 3) Palatal bar



1. ( 12 )



1. ( 5~7 )

- 4)
- 5)

1. 상악이나 하악 주연결자 (major connector)의 중앙부위 파절

< a > 가 가

< b > (cross-sectional area) ( )

가 (Load) (Yield strength)

2. retainer의 shoulder 부위 파절

< > (elastic stress)

19

3. 주조체내의 기포발현

< a > ( )가 :

< b > :

(疲困) 가

(dimensional change)

Base Metal Alloys

1. (composition)

1) Co-Cr alloy : Co가 60%, Cr 25~30% 가

Mn, Si 가 Mo, W, Co 가

2) Ni-Cr alloy: Ni가 70%, Cr 6%, Al 2%, Be 0.5% Mo, W, Mn, Co, C, Si (intermetallic compound) (Ni3Al) 가

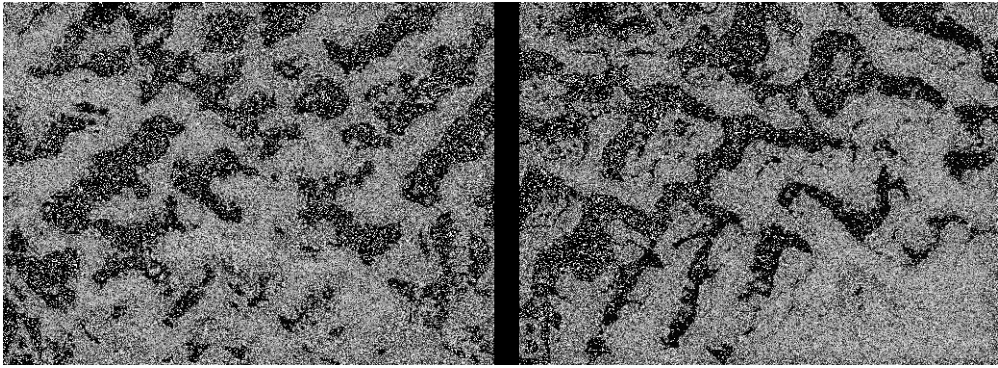


Figure 23-2. Microstructures of cobalt - chromium alloys  
 (A) Partial denture alloy, Durallium - LG (B) surgical alloy, Vitalium.

## 2. (Properties)

- 1) (Physical properties)
  - a) (Fusion temperature) : 1399 (2550 ) ~ 1454 (2650 )
  - b) (color) :
  - c) (density) : 8 ~ 9g/cm<sup>3</sup> ( 가 ).
  - d) (casting shrinkage) : 2.05 ~ 2.33% ( 1.25 ± 0.1% )
- 2) (Mechanical properties)
  - a) (hardness) : Brinell hardness number 370 Type gold(B.H.N.130) 3 high speed engine
  - b) (Modulus of elasticity) : 1/2
  - c) (elongation) : 2 ~ 10% mold 가
  - d) (Response to heat treatment) : Co-Cr alloy

Ni-Cr alloy

- 1) 1800 15

- 2) 1300 15

- 3) (chemical properties)
  - a) (chlorine) : chromium

chlorox 가  
chromium

## 3. (maniplation)

- 1) (investment) : 1300 (2372 ) ethyl-silicate, phosphate bonded investment
- 2) mold gas (Elimination of mold gases) mold gas
- 3) (melting) :
  - a)
  - b)
  - c)

> Over heating  
(casting porosity)

- 4) (casting) : , , 가 sand blaster
- 5) 가
- 6)

PROPRIETARY BASE METAL PARTIAL DENTURE ALLOYS

TYPE 1, HIGH - FUSING *	MANUFACTURER
Alloy X-12	Federal Prosthetics, Inc.
Dentorium	Dentorium Products Co., Inc.
Durallium LG Alloy	LG Div., J. F. Jelenko & Co.
Niranium	Niranium Corp.
Nobilium Alloy	Nobilium Products, Inc.
Platinore	Allen Dynamics, Inc.
Regalloy	Ransom & Randolph Co., Div. of Dentsply International, Inc.
Stalite Chromium - Cobalt Alloy "S" Ingots	Stalite, Inc.
Ticonium Premium 100†	Ticonium Co.,
Vitalium	Howmedica, Inc., Dental Div.
TYPE 11, LOW - FUSING ‡	
Ticonium No, 50	Ticonium Co.

\* Fusion temperature > 1316 °C (2400 °F)

† Ni-Cr based alloy.

‡ Fusion temperature < 1316 °C (2400 °F)

4. (Porosity)

2)(a)

- 1) (internal porosity)
- a) (Localized shrinkage ring porosity)
- b) (subsurface porosity)
- c) (micro porosity)
- 2) (external porosity)
- a) (back pressure 1)(a) porosity) spure mold 가 1)(b) sprue pin (elastic stress) mold 가 1)(b) mold 가

III. 결 론

1.

2.

3.

4.

(dimensional change)

## 참 고 문 헌

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