# 쟤료공학개론 과제7

2018-12432, Electrical and Computer Engineering department, Park Jeonghyun 11/15/2023

# 1 Problem 1

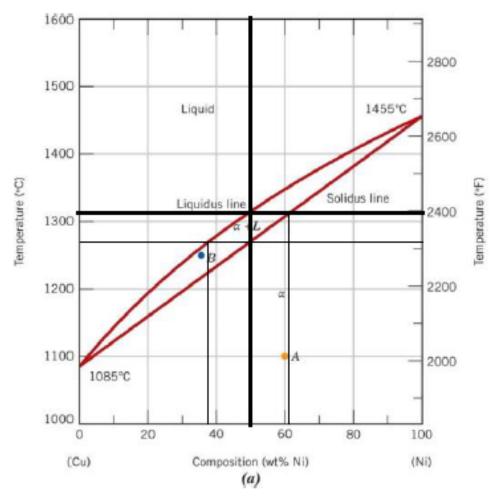


Figure 1: Ni-Co Phase Diagram

#### 1.1 a

약  $1320^{\circ}C$ 에서 발생한다.

# 1.2 b

Ni 62%, Cu 38%이다.

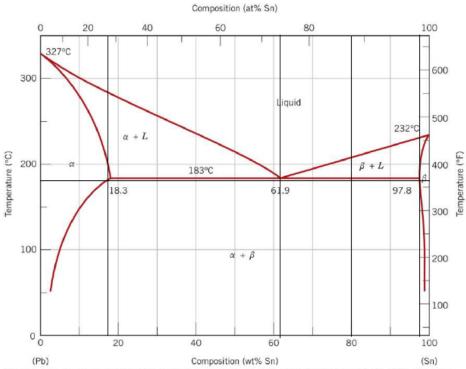
## 1.3 c

약  $1270^{o}C$ 에서 발생한다.

#### 1.4 b

Ni 36%, Cu 64%이다.

# 2 Problem 2



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Figure 2: Sn-Pb Phase Diagram

## **2.1** a

$$W_{\alpha} = \frac{97.8 - 80}{97.8 - 18.3} \tag{1}$$

$$=0.224$$
 (2)

$$W_{\beta} = \frac{80 - 18.3}{97.8 - 18.3} \tag{3}$$

$$=0.776$$
 (4)

# **2.2** b

$$W_{primary\beta} = \frac{80 - 61.9}{97.8 - 61.9} \tag{5}$$

$$=0.504$$
 (6)

$$W_{eutectic} = \frac{97.8 - 80}{97.8 - 61.9} \tag{7}$$

$$=0.496$$
 (8)

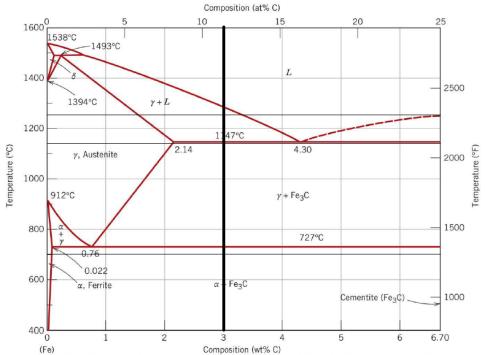
$$W_{eutectic\beta} = W_{\beta} - W_{primary\beta} \tag{9}$$

$$= 0.776 - 0.504 \tag{10}$$

$$=0.272$$
 (11)

# 3 Problem 3

각 온도별 schematic은 Figs.4, 5, 6와 같다.



(Fe) Composition (wt% C)
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Figure 3: Fe Phase Diagram

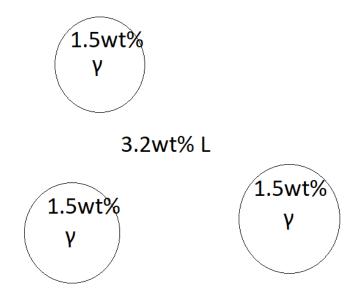


Figure 4:  $1250^{o}C$ 

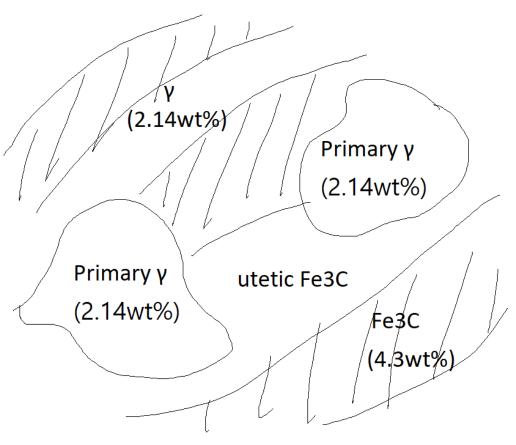


Figure 5:  $1145^{\circ}C$ 

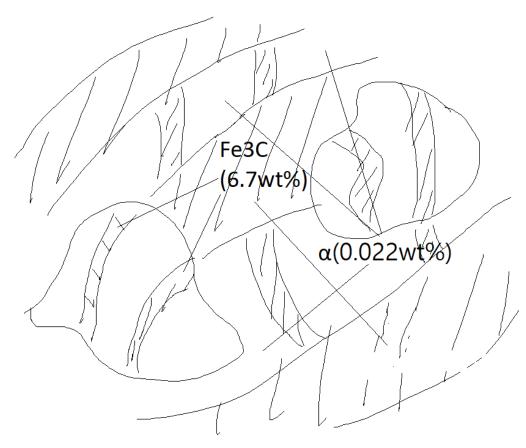


Figure 6:  $700^{\circ}C$