LC 18 : Corps purs et mélanges binaires

Niveau : CPGE

Prérequis :

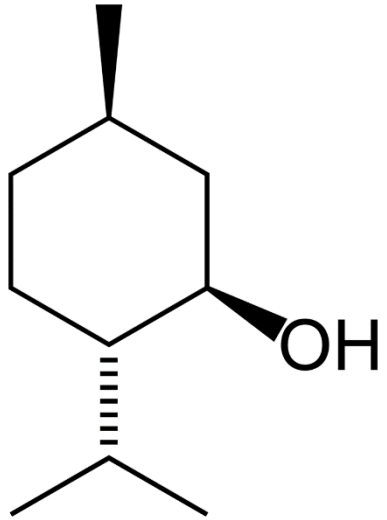
- Fraction massique
- Potentiel chimique
- Changement d'état du corps pur

Mélange de solides

Menthol

1,1 g

T_{fus}= 42,45°C



Acide laurique

0,6 g

T_{fus}= 44,33°C

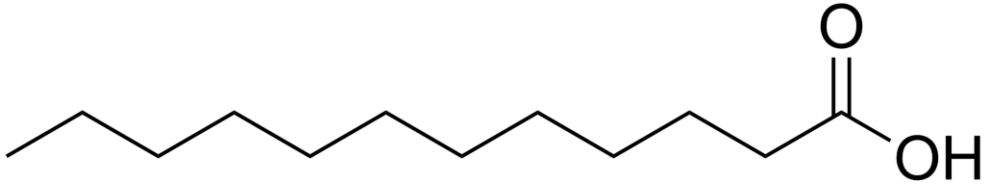


Diagramme de phase d'un corps pur

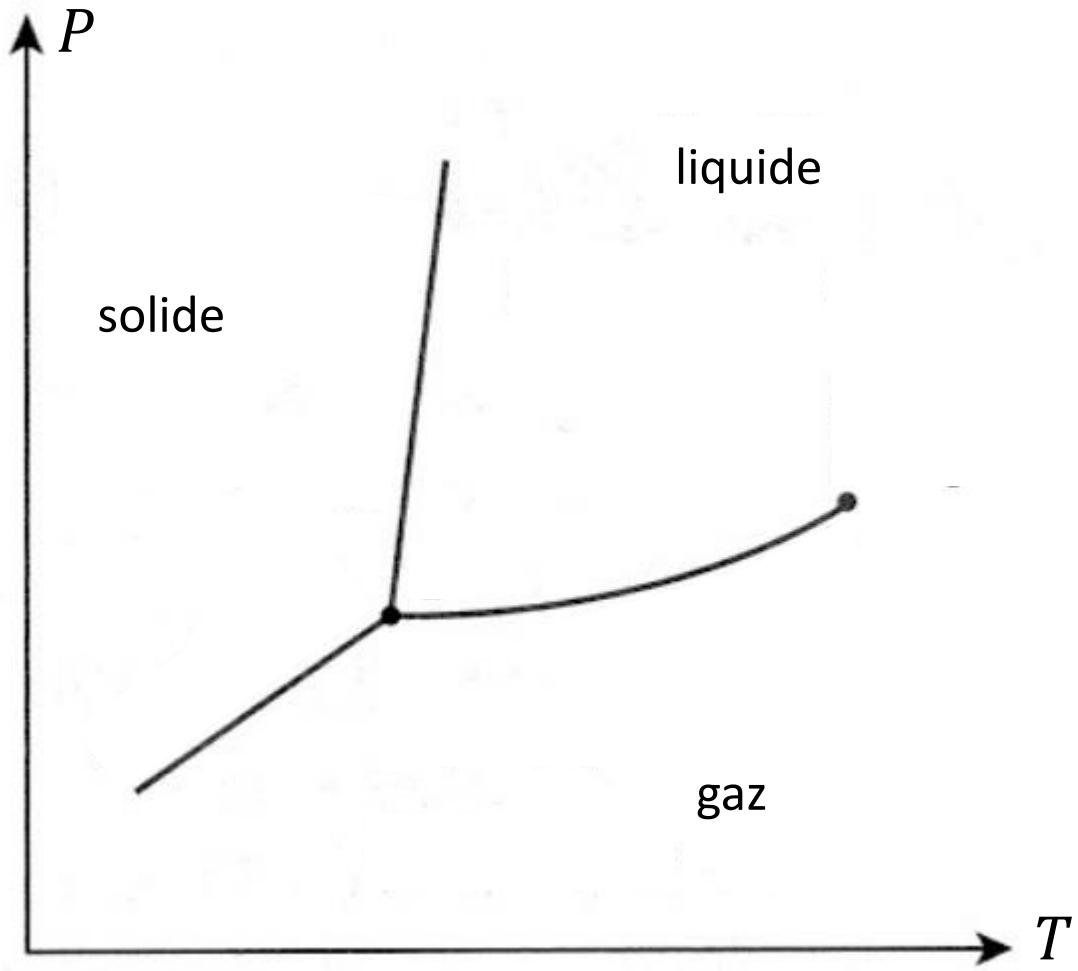
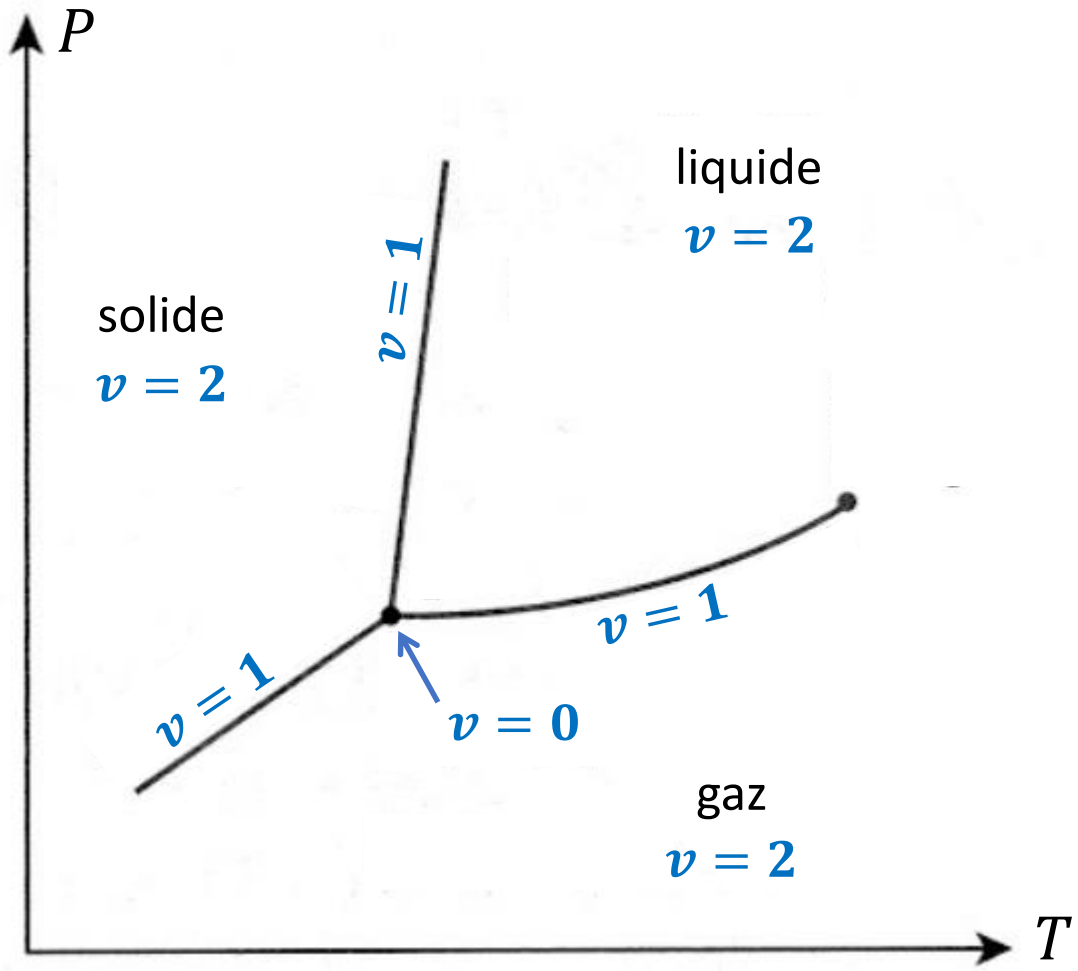
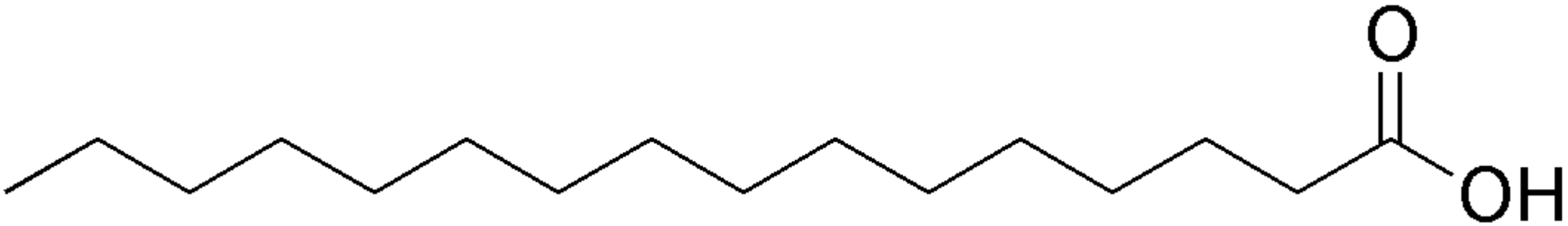


Diagramme de phase d'un corps pur



Acide palmitique



T_{fus} = 63,69°C

Variables de composition

$$w_1^l = \frac{m_1^l}{m_1^l + m_2^l}$$

Fraction massique du constituant 1 dans la phase liquide

On définit de même w_2^l , w_1^s et w_2^s

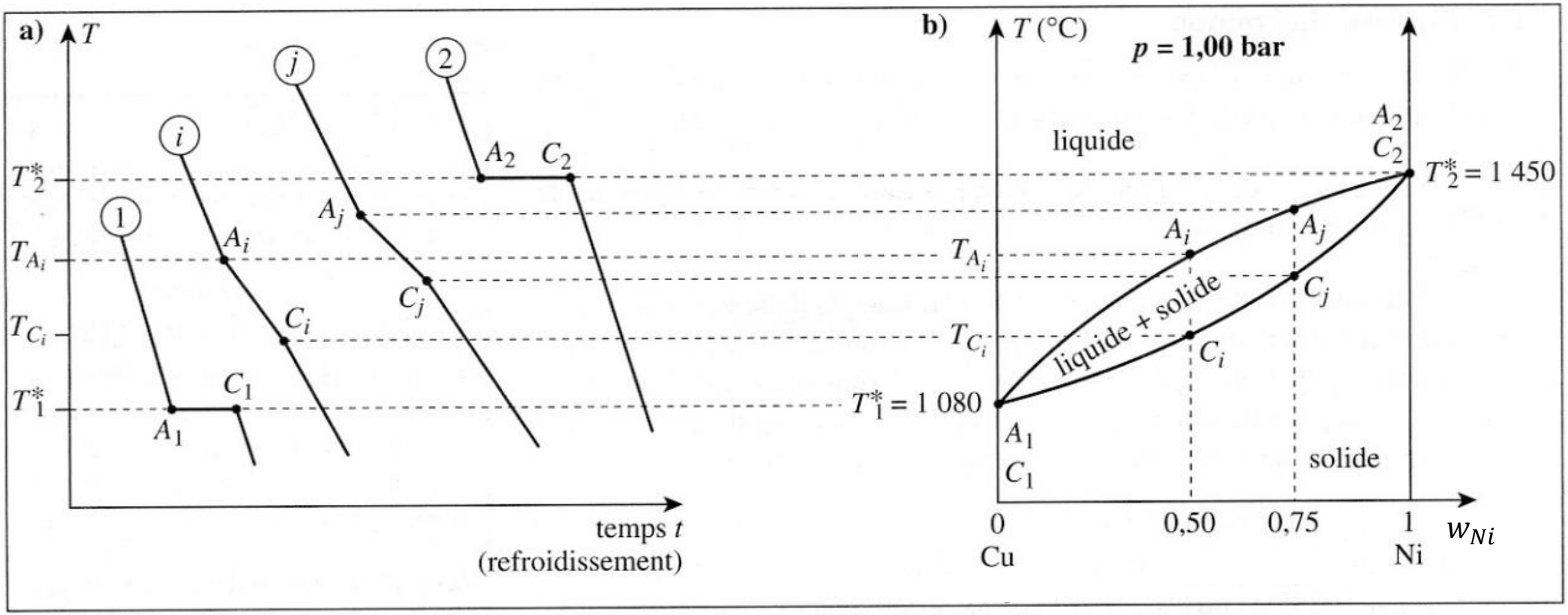
Variables de composition

$$w_1 = \frac{m_1}{m_1 + m_2}$$

Fraction massique **globale** du constituant 1

On définit de même w_2

Construction du diagramme binaire Cuivre - Nickel



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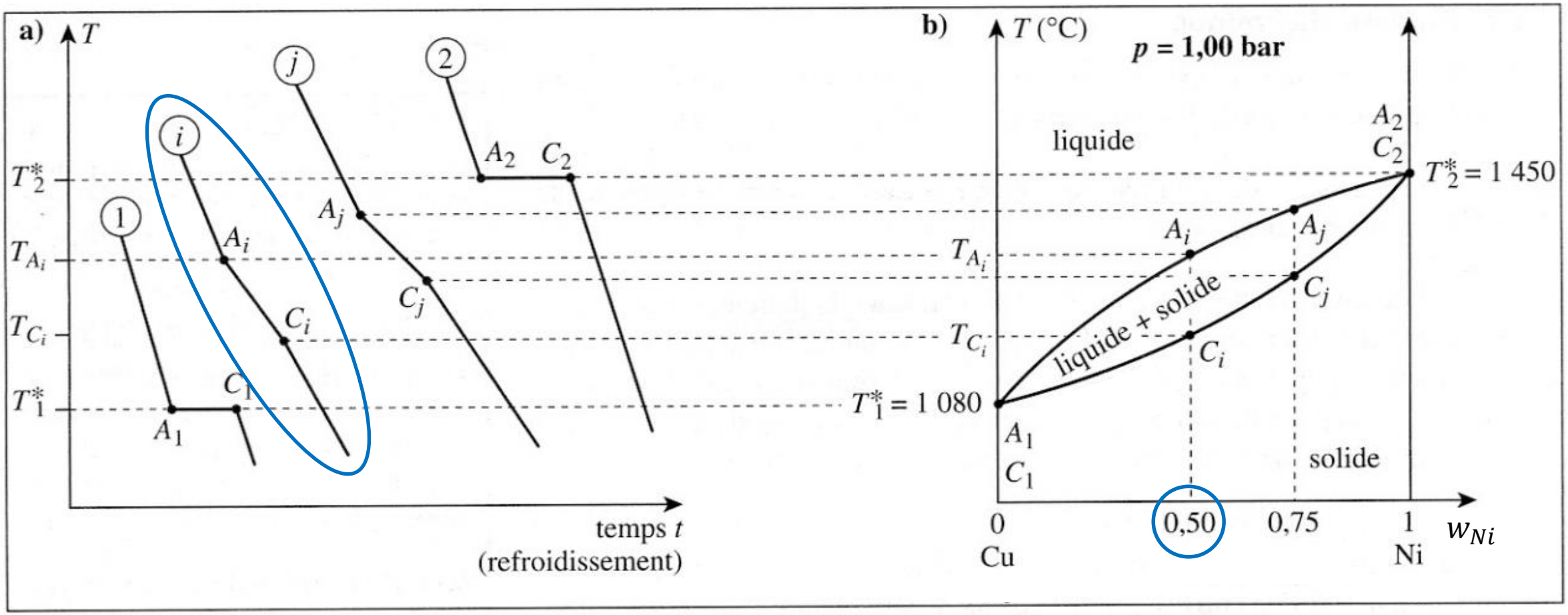

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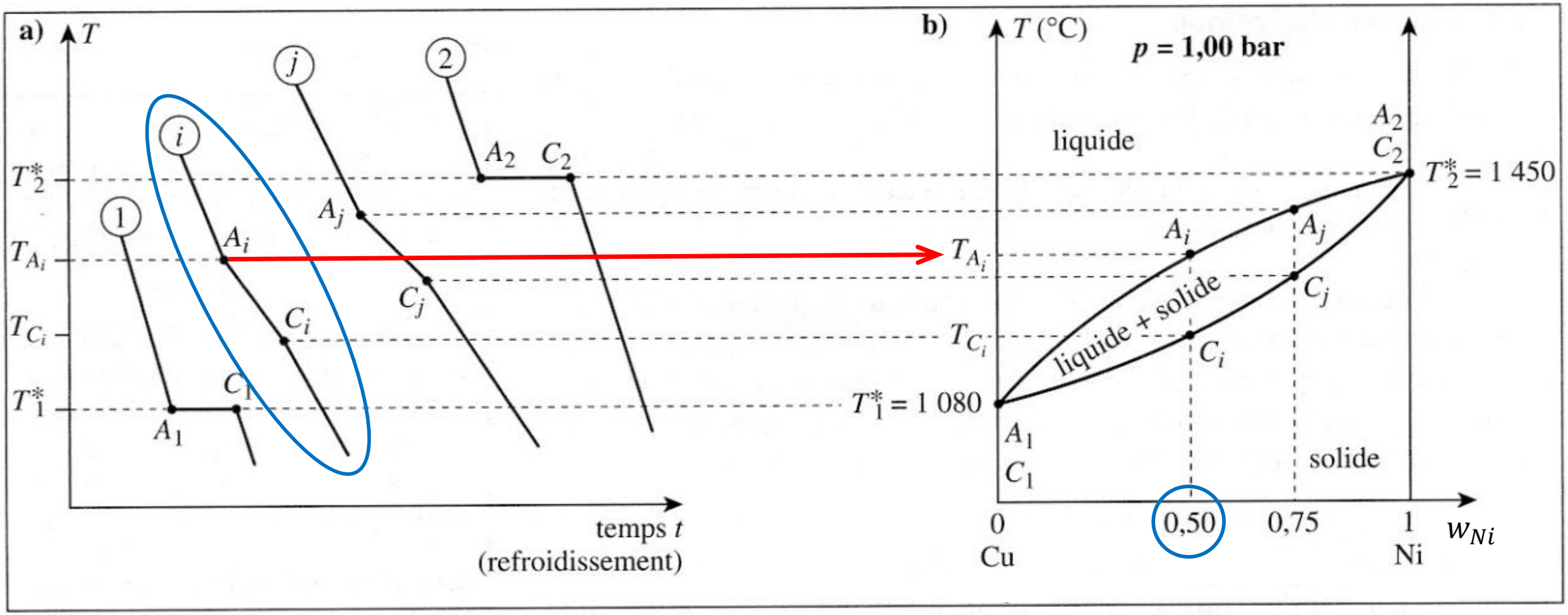

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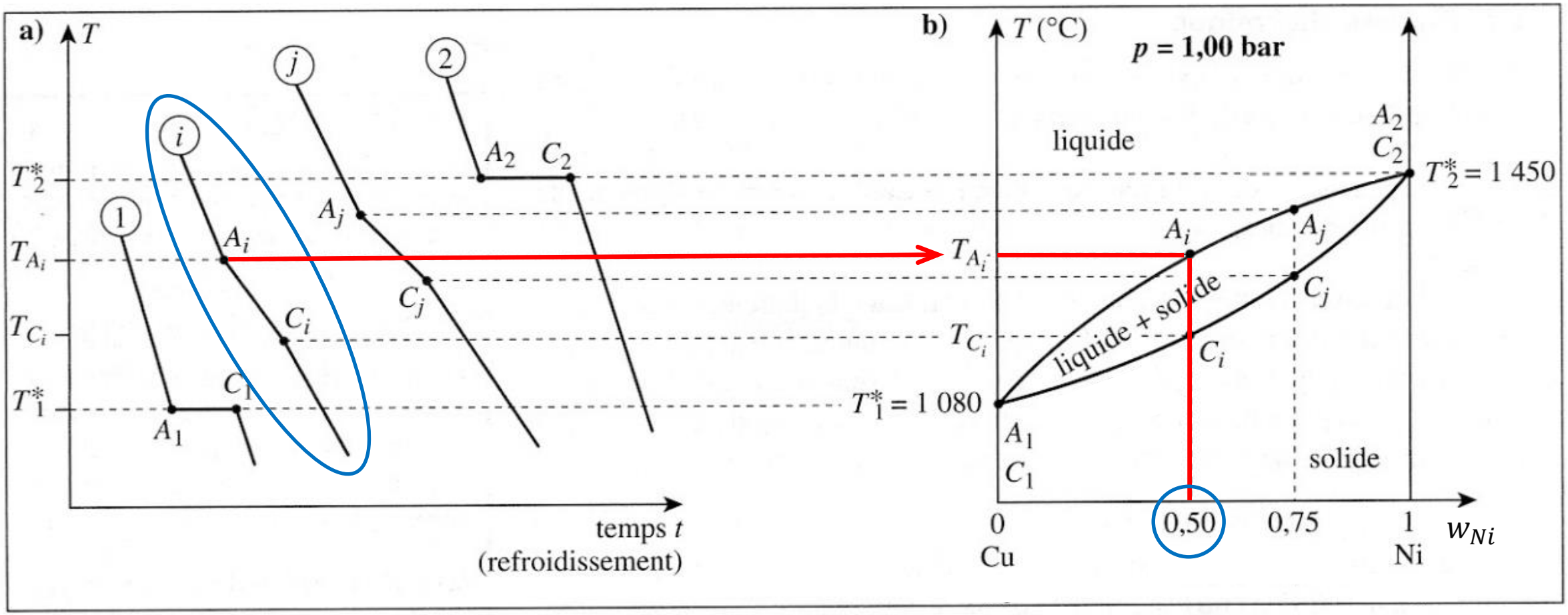

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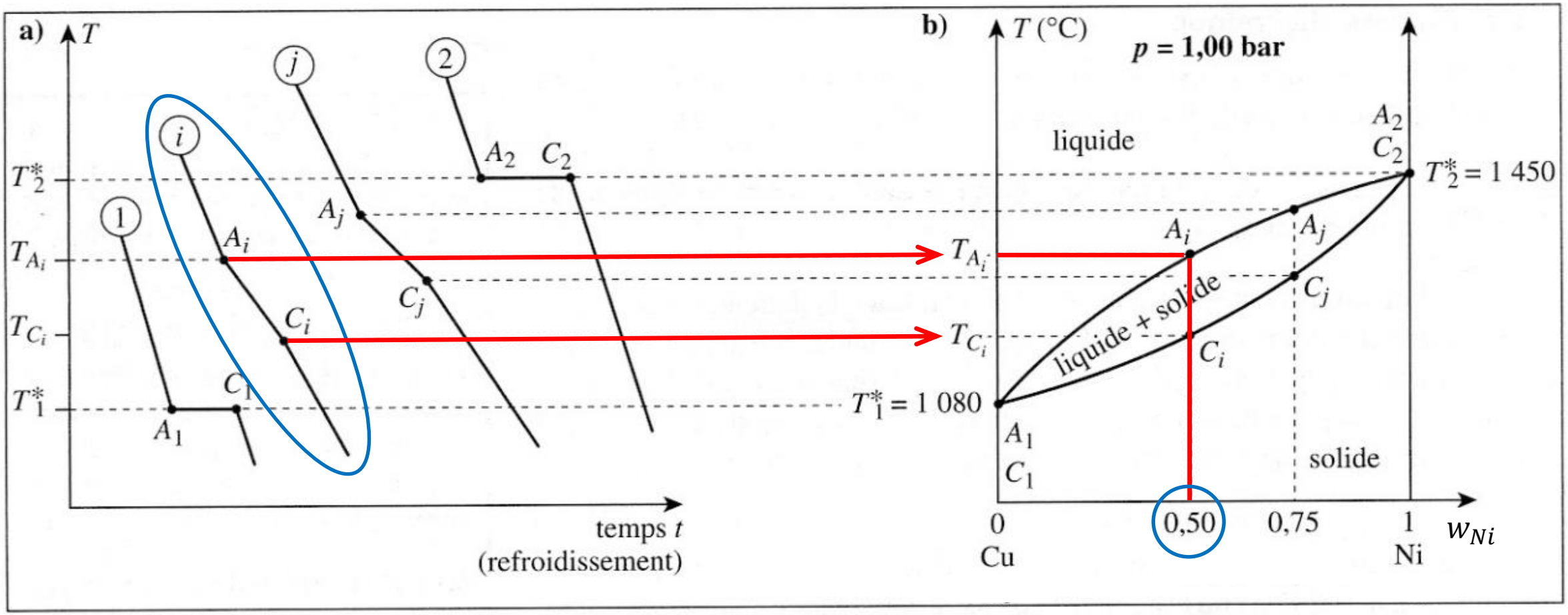

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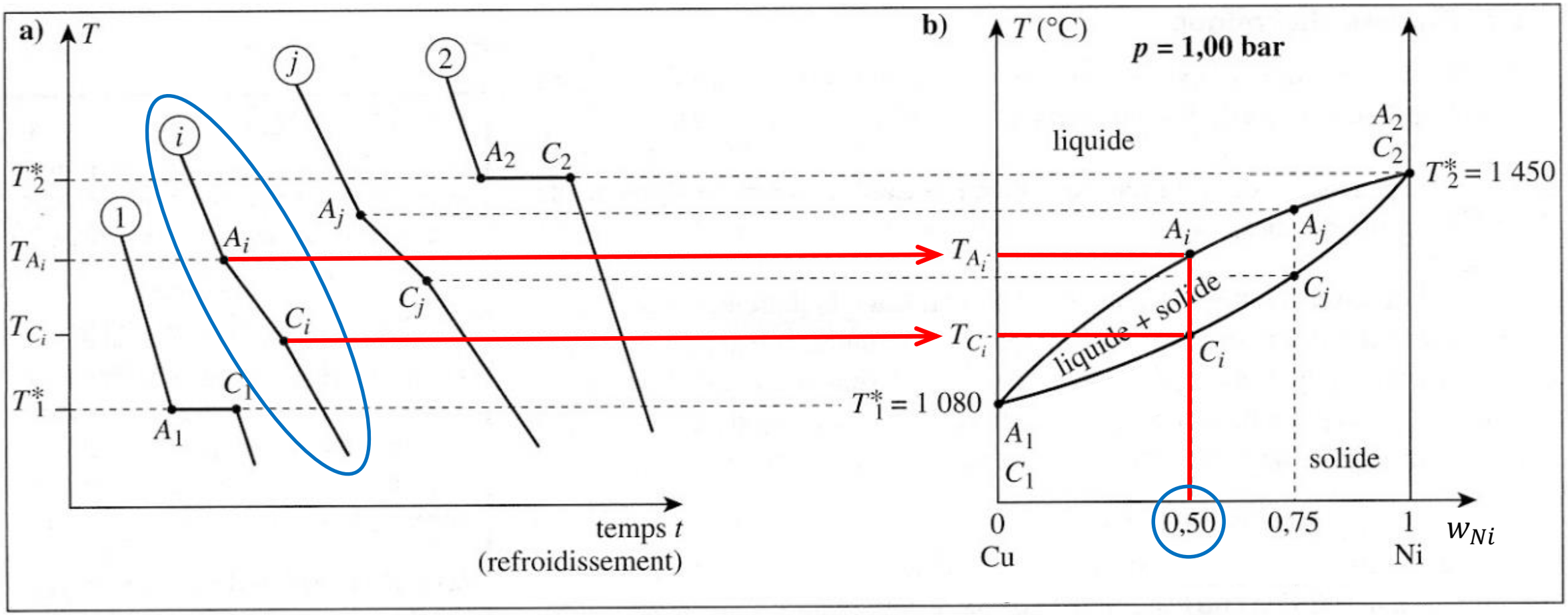
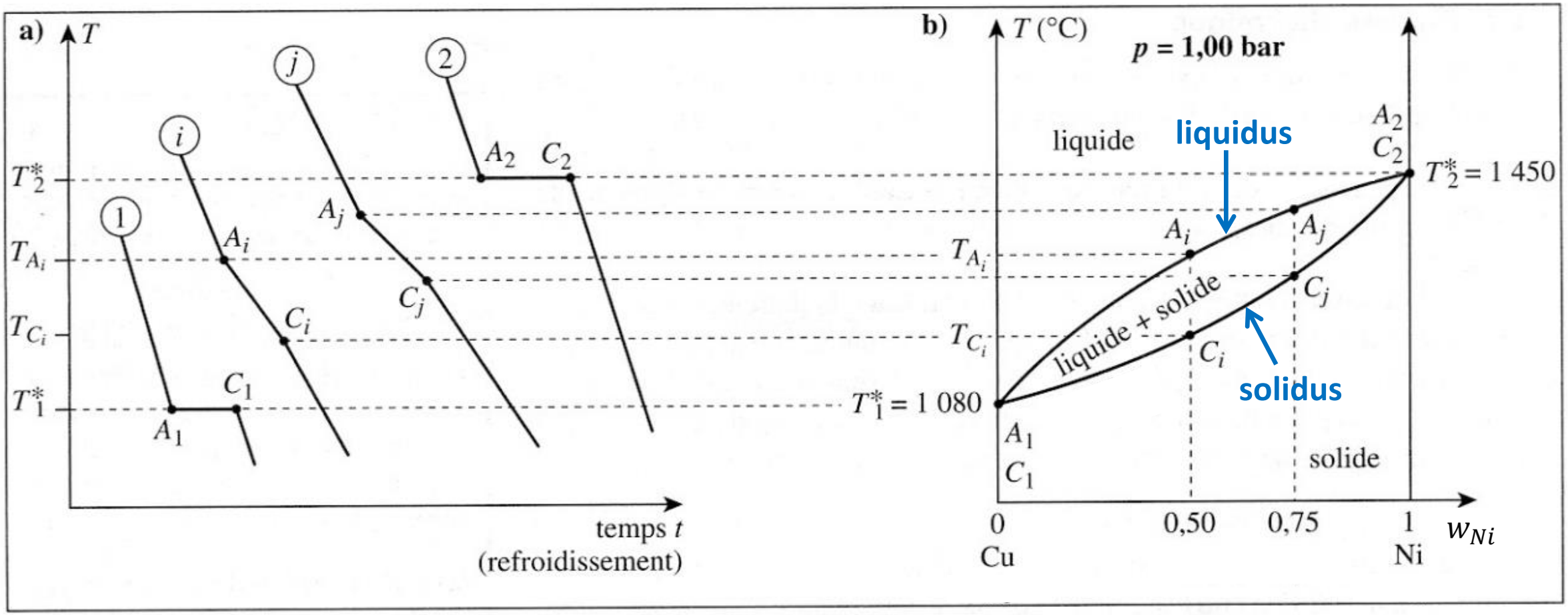
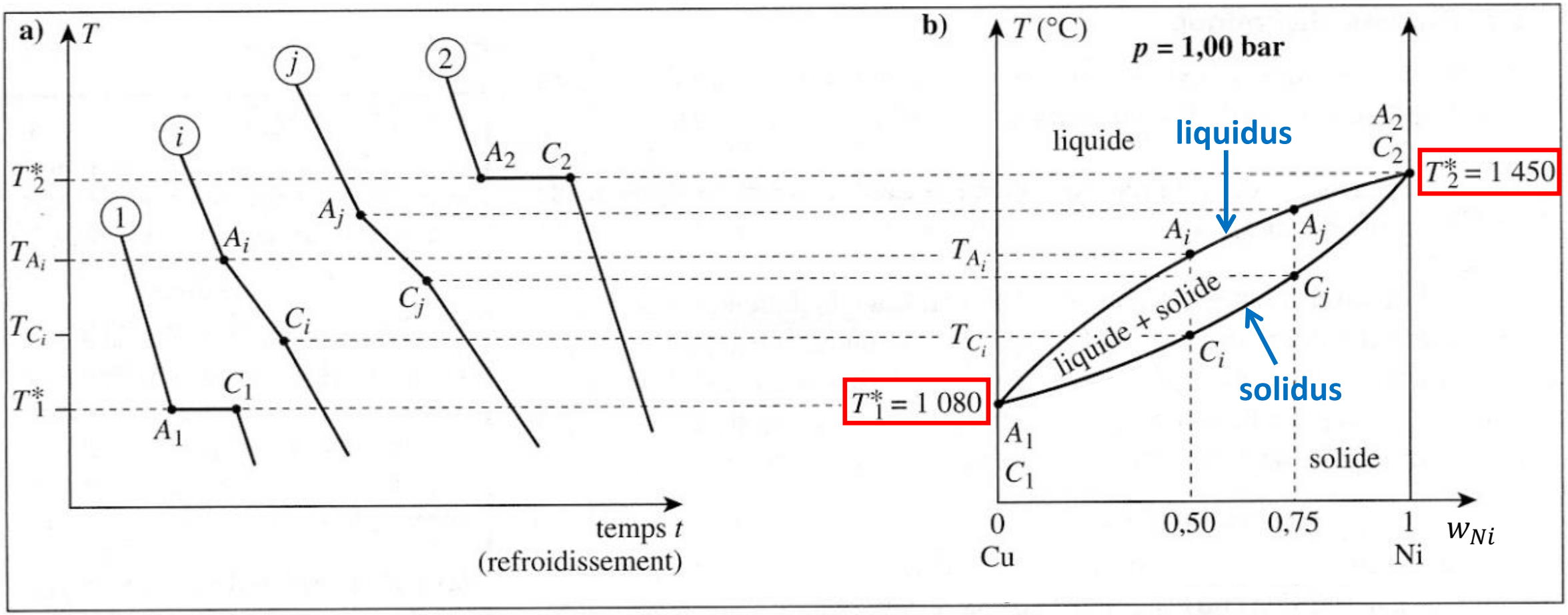


Construction du diagramme binaire Cuivre - Nickel



Construction du diagramme binaire Cuivre - Nickel



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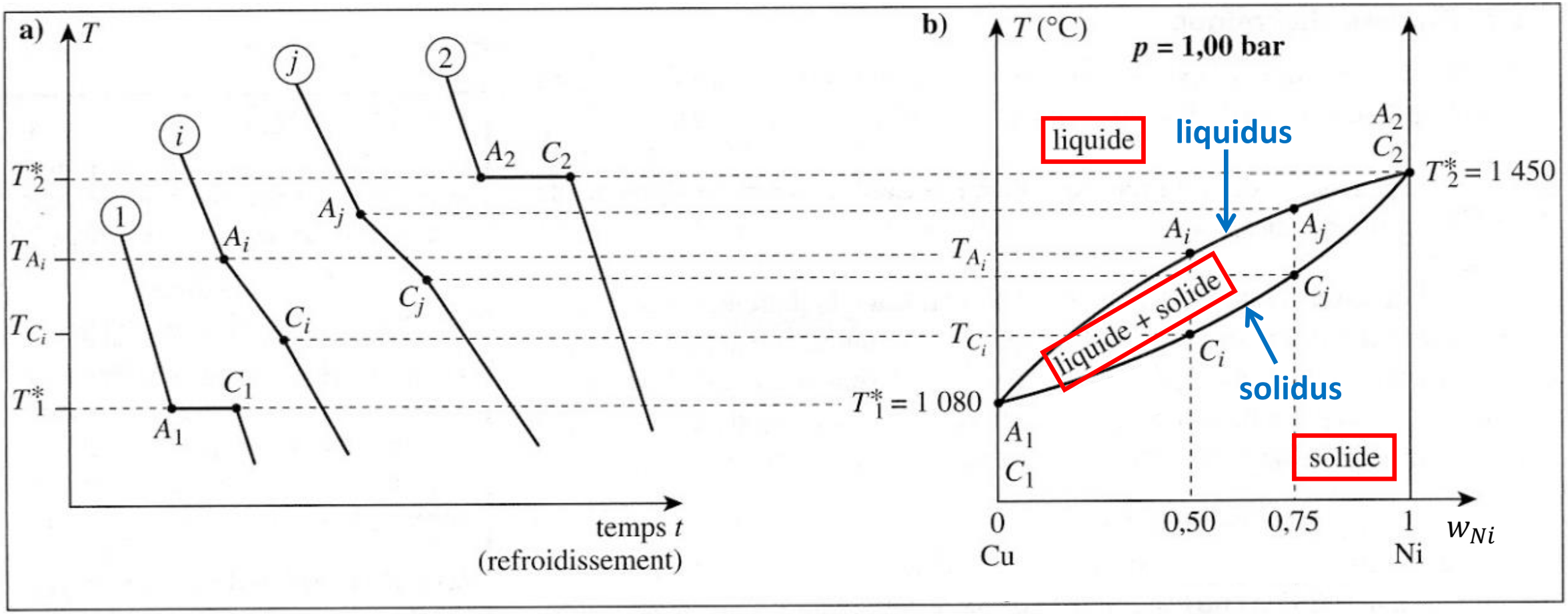
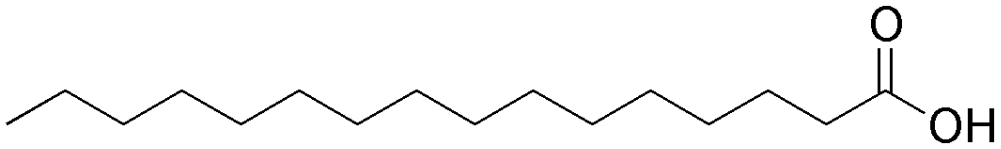


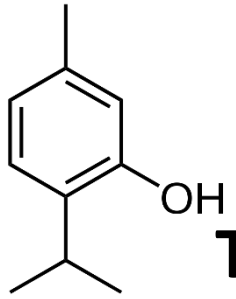
Expérience : diagramme binaire acide sébacique – acide adipique

Acide palmitique



T_{fus} = 63,69°C

Thymol

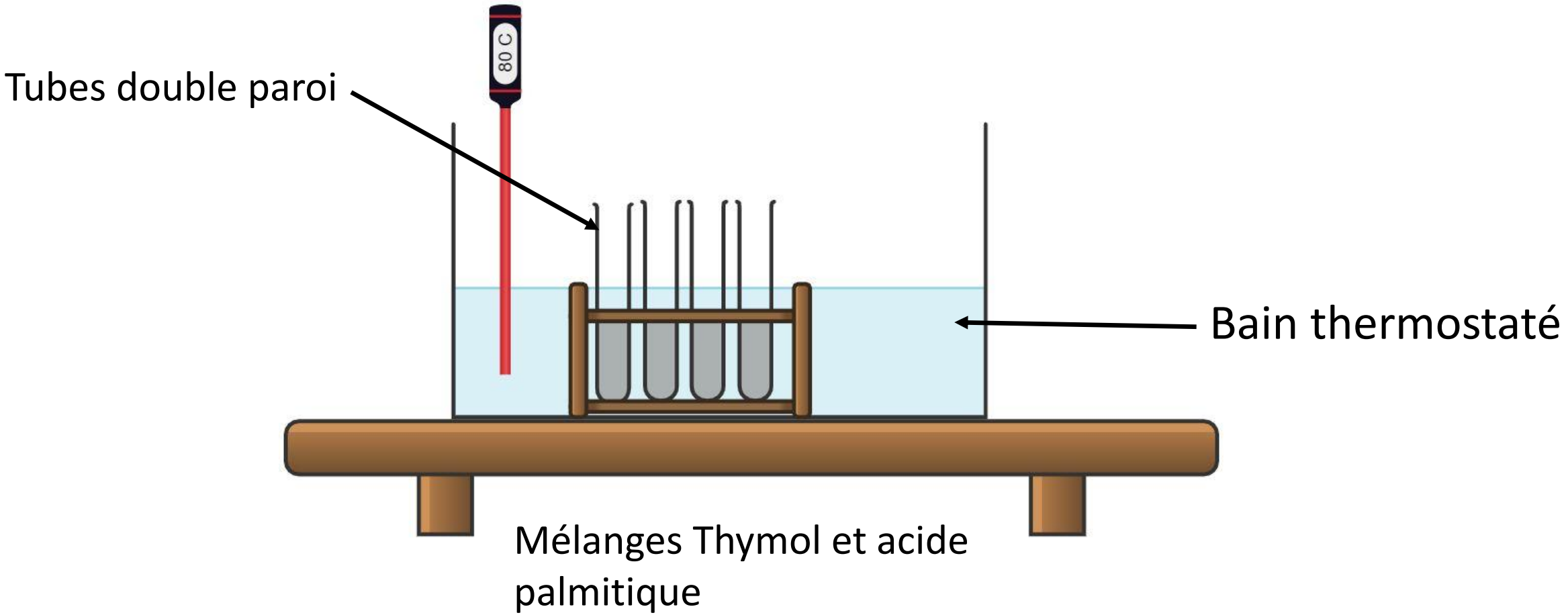


T_{fus} = 49,95°C

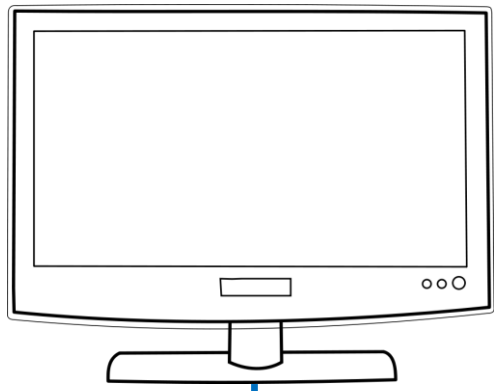
Mélanges réalisés

Fraction molaire d'acide palmitique	0	0,2	0,24	0,5				1

Tracé de courbes d'analyse thermique : protocole

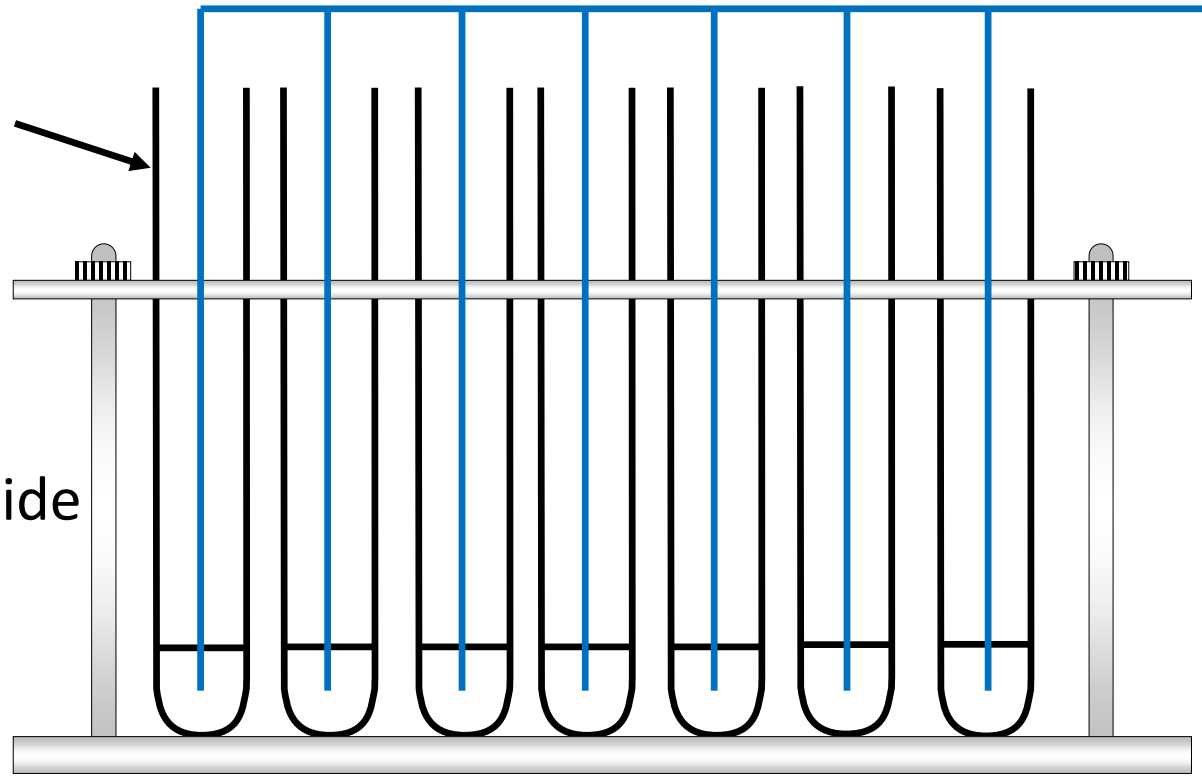


Acquisition de courbes de refroidissement



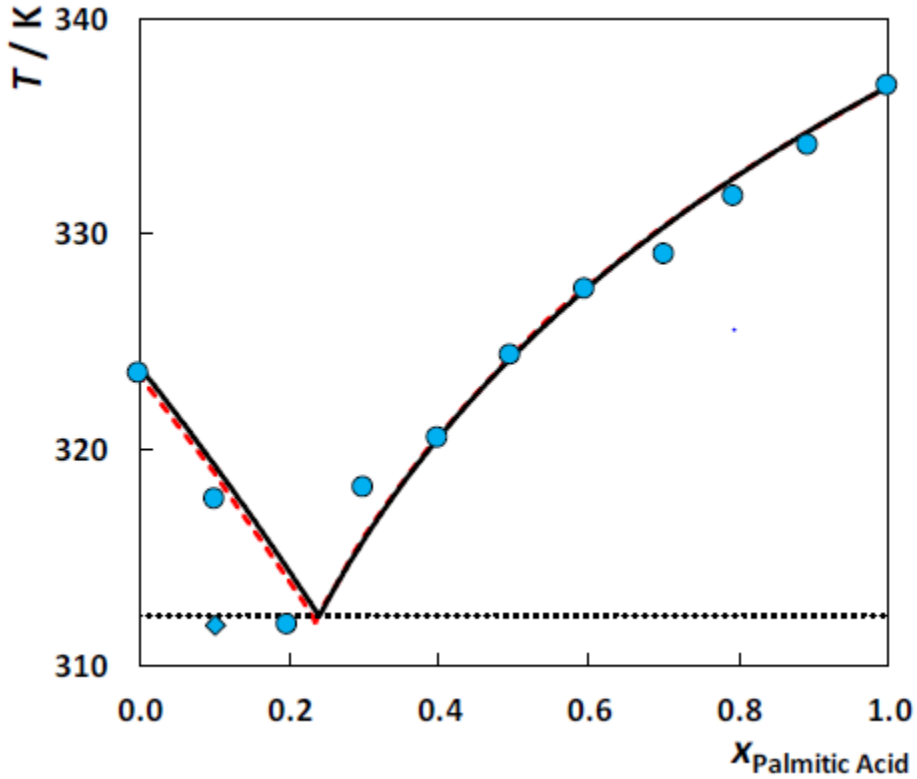
thermocouples

Tubes double paroi



Mélanges Thymol et acide palmitique

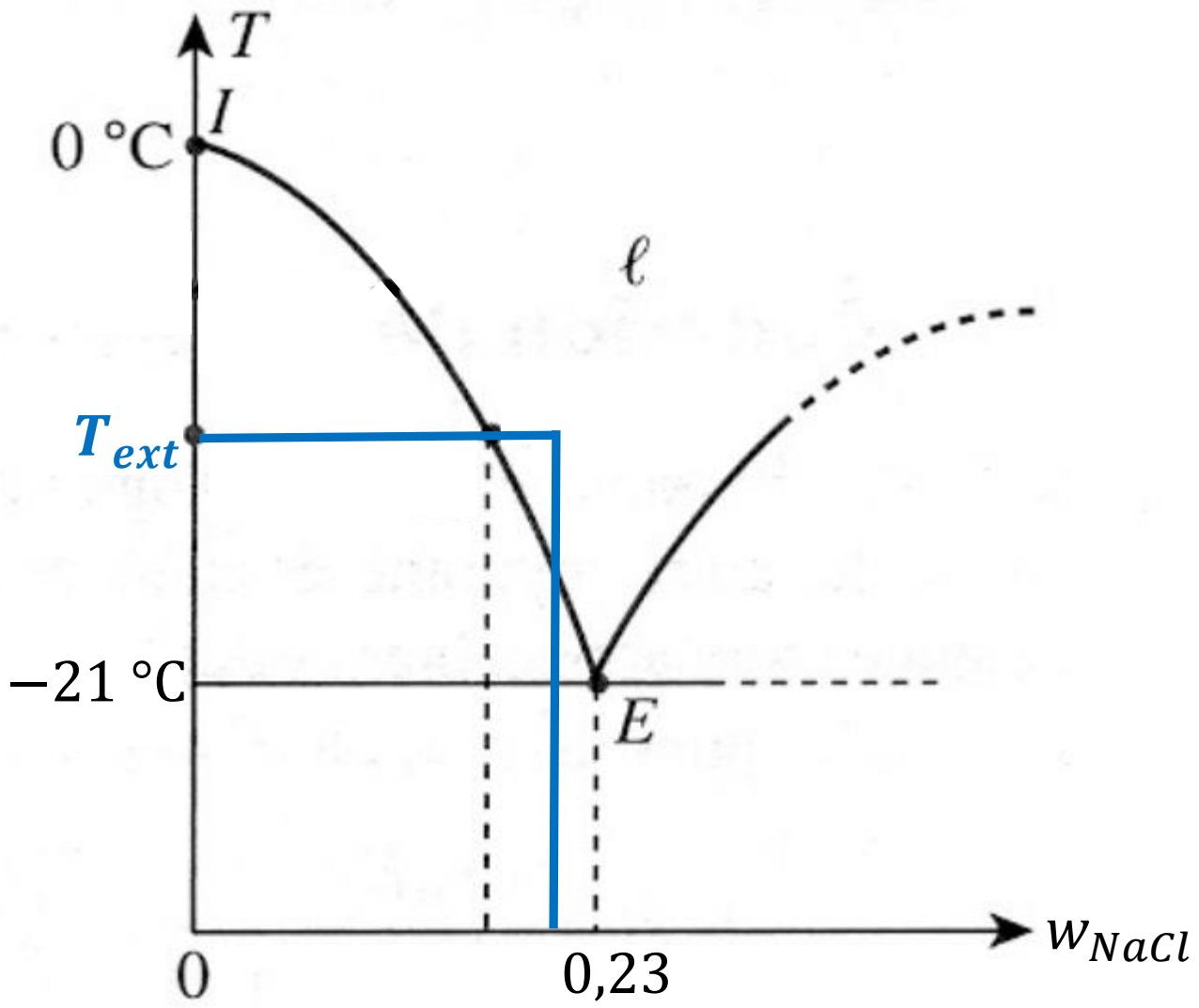
Diagramme binaire isobare Thymol-Acide palmitique



Tunable hydrophobic eutectic solvents based on terpenes and monocarboxylic acids, Mónia Andreia Rodrigues Martins et al. *ACS Sustainable Chem. Eng*

Salage des routes en hiver

Diagramme partiel eau – chlorure de sodium



Application des diagrammes binaires à eutectique

Minerai de bauxite,
contient de l'alumine Al_2O_3

Aluminium

Mélanges	**Liquide à partir d'une température de**
Alumine pure	2050°C
Alumine + cryolithe Na_3AlF_6 (80% environ)	960°C