$$μ\_{Ps}^{L}=μ\_{Ps}^{F}$$

$$∆G\_{Ps}^{F\rightarrow L}+(X\_{Tk}^{L})^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}-1\right)\right]+RTln\left(1-X\_{Tk}^{L}\right)=X\_{Tk}^{F}^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}-1\right)\right]+RTln(1-X\_{Tk}^{F})$$

$$μ\_{Tk}^{L}=μ\_{Tk}^{F}$$

$$∆G\_{Tk}^{B\rightarrow L}+(1-X\_{Tk}^{L})^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}\right)\right]+RTln\left(X\_{Tk}^{L}\right)=∆G\_{Tk}^{B\rightarrow F}+(1-X\_{Tk}^{F})^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}\right)\right]+RTln(X\_{Tk}^{F})$$

$$μ\_{Ps}^{L}=μ\_{Ps}^{F}$$

$$12000-10T+\left(X\_{Tk}^{L}\right)^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}-1\right)\right]+RTln\left(1-X\_{Tk}^{L}\right)-X\_{Tk}^{F}^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}-1\right)\right]-RTln\left(1-X\_{Tk}^{F}\right)=0$$

$$μ\_{Tk}^{L}=μ\_{Tk}^{F}$$

$$6000-10T+\left(1-X\_{Tk}^{L}\right)^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}\right)\right]+RTln\left(X\_{Tk}^{L}\right)-7500-(1-X\_{Tk}^{F})^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}\right)\right]-RTln\left(X\_{Tk}^{F}\right)=0$$

$$\frac{∂F1}{∂X\_{Tk}^{L}}$$

$$2\left(X\_{Tk}^{L}\right)\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}-1\right)\right]+\left(X\_{Tk}^{L}\right)^{2}\left[\left(-4794.9-0.0095T\right)\left(2\right)\right]-\frac{RT}{\left(1-X\_{Tk}^{L}\right)}$$

$$\frac{∂F1}{∂X\_{Tk}^{F}}$$

$$-2X\_{Tk}^{F}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}-1\right)\right]-X\_{Tk}^{F}^{2}\left[\left(-7200-0.0083T\right)\left(2\right)\right]+\frac{RT}{\left(1-X\_{Tk}^{F}\right)}$$

$$\frac{∂F2}{∂X\_{Tk}^{L}}$$

$$-2\left(1-X\_{Tk}^{L}\right)\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}\right)\right]+\left(1-X\_{Tk}^{L}\right)^{2}\left[\left(-4794.9-0.0095T\right)\left(2\right)\right]+\frac{RT}{X\_{Tk}^{L}}$$

$$\frac{∂F2}{∂X\_{Tk}^{F}}$$

$$2(1-X\_{Tk}^{F})\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}\right)\right]-(1-X\_{Tk}^{F})^{2}\left[\left(-7200-0.0083T\right)\left(2\right)\right]-\frac{RT}{\left(X\_{Tk}^{F}\right)}$$

2

$$μ\_{Ps}^{B}=μ\_{Ps}^{F}$$

$$∆G\_{Ps}^{F\rightarrow B}+(X\_{Tk}^{B})^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}-1\right)\right]+RTln\left(1-X\_{Tk}^{B}\right)=X\_{Tk}^{F}^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}-1\right)\right]+RTln(1-X\_{Tk}^{F})$$

$$μ\_{Tk}^{B}=μ\_{Tk}^{F}$$

$$(1-X\_{Tk}^{B})^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}\right)\right]+RTln\left(X\_{Tk}^{B}\right)=∆G\_{Tk}^{B\rightarrow F}+(1-X\_{Tk}^{F})^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}\right)\right]+RTln(X\_{Tk}^{F})$$

$$μ\_{Ps}^{B}=μ\_{Ps}^{F}$$

$$4000+(X\_{Tk}^{B})^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}-1\right)\right]+RTln\left(1-X\_{Tk}^{B}\right)-X\_{Tk}^{F}^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}-1\right)\right]-RTln\left(1-X\_{Tk}^{F}\right)=0$$

$$μ\_{Tk}^{B}=μ\_{Tk}^{F}$$

$$(1-X\_{Tk}^{B})^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}\right)\right]+RTln\left(X\_{Tk}^{B}\right)-7500-(1-X\_{Tk}^{F})^{2}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}\right)\right]-RTln\left(X\_{Tk}^{F}\right)=0$$

$$\frac{∂F1}{∂X\_{Tk}^{B}}$$

$$2\left(X\_{Tk}^{B}\right)\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}-1\right)\right]+\left(X\_{Tk}^{B}\right)^{2}\left[\left(1.6382-0.0106T\right)\left(2\right)\right]-\frac{RT}{1-X\_{Tk}^{B}}$$

$$\frac{∂F1}{∂X\_{Tk}^{F}}$$

$$-2X\_{Tk}^{F}\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}-1\right)\right]-X\_{Tk}^{F}^{2}\left[\left(-7200-0.0083T\right)\left(2\right)\right]+\frac{RT}{1-X\_{Tk}^{F}}$$

$$\frac{∂F2}{∂X\_{Tk}^{B}}$$

$$-2\left(1-X\_{Tk}^{B}\right)\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}\right)\right]+\left(1-X\_{Tk}^{B}\right)^{2}\left[\left(1.6382-0.0106T\right)\left(2\right)\right]+\frac{RT}{X\_{Tk}^{B}}$$

$$\frac{∂F2}{∂X\_{Tk}^{F}}$$

$$2(1-X\_{Tk}^{F})\left[12598-4.981T+\left(-7200-0.0083T\right)\left(2X\_{Tk}^{F}\right)\right]-(1-X\_{Tk}^{F})^{2}\left[\left(-7200-0.0083T\right)\left(2\right)\right]-\frac{RT}{X\_{Tk}^{F}}$$

3

$$μ\_{Ps}^{L}=μ\_{Ps}^{B}$$

$$∆G\_{Ps}^{F\rightarrow L}+(X\_{Tk}^{L})^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}-1\right)\right]+RTln\left(1-X\_{Tk}^{L}\right)=∆G\_{Ps}^{F\rightarrow B}+(X\_{Tk}^{B})^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}-1\right)\right]+RTln\left(1-X\_{Tk}^{B}\right)$$

$$μ\_{Tk}^{L}=μ\_{Tk}^{B}$$

$$∆G\_{Tk}^{B\rightarrow L}+(1-X\_{Tk}^{L})^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}\right)\right]+RTln\left(X\_{Tk}^{L}\right)=(1-X\_{Tk}^{B})^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}\right)\right]+RTln\left(X\_{Tk}^{B}\right)$$

$$μ\_{Ps}^{L}=μ\_{Ps}^{B}$$

$$12000-10T+\left(X\_{Tk}^{L}\right)^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}-1\right)\right]+RTln\left(1-X\_{Tk}^{L}\right)-4000-\left(X\_{Tk}^{B}\right)^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}-1\right)\right]-RTln\left(1-X\_{Tk}^{B}\right)=0$$

$$μ\_{Tk}^{L}=μ\_{Tk}^{B}$$

$$6000-10T+\left(1-X\_{Tk}^{L}\right)^{2}\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}\right)\right]+RTln\left(X\_{Tk}^{L}\right)-\left(1-X\_{Tk}^{B}\right)^{2}\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}\right)\right]-RTln\left(X\_{Tk}^{B}\right)=0$$

$$\frac{∂F1}{∂X\_{Tk}^{L}}$$

$$2\left(X\_{Tk}^{L}\right)\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}-1\right)\right]+\left(X\_{Tk}^{L}\right)^{2}\left[\left(-4794.9-0.0095T\right)\left(2\right)\right]-\frac{RT}{1-X\_{Tk}^{L}}$$

$$\frac{∂F1}{∂X\_{Tk}^{B}}$$

$$-2\left(X\_{Tk}^{B}\right)\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}-1\right)\right]-\left(X\_{Tk}^{B}\right)^{2}\left[\left(1.6382-0.0106T\right)\left(2\right)\right]+\frac{RT}{1-X\_{Tk}^{B}}$$

$$\frac{∂F2}{∂X\_{Tk}^{L}}$$

$$-2\left(1-X\_{Tk}^{L}\right)\left[14894-7.9923T+\left(-4794.9-0.0095T\right)\left(2X\_{Tk}^{L}\right)\right]+\left(1-X\_{Tk}^{L}\right)^{2}\left[\left(-4794.9-0.0095T\right)\left(2\right)\right]+\frac{RT}{X\_{Tk}^{L}}$$

$$\frac{∂F2}{∂X\_{Tk}^{B}}$$

$$2\left(1-X\_{Tk}^{B}\right)\left[6999-3.998T+\left(1.6382-0.0106T\right)\left(2X\_{Tk}^{B}\right)\right]-\left(1-X\_{Tk}^{B}\right)^{2}\left[\left(1.6382-0.0106T\right)\left(2\right)\right]-\frac{RT}{X\_{Tk}^{B}}$$