



MSR campaign $\text{PuCl}_3\text{-NaCl}$ density two slides

April 2023

Changing the World's Energy Future

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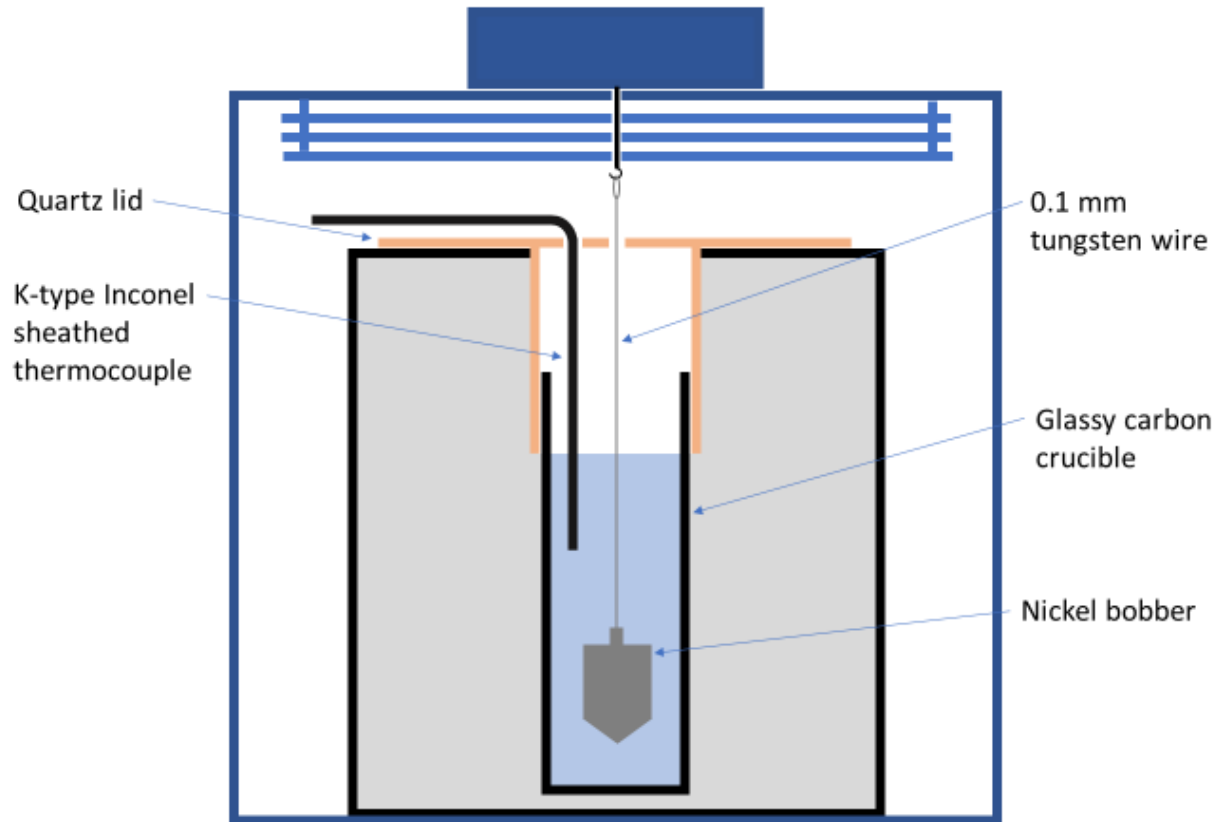
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Density of PuCl_3 -NaCl mixtures



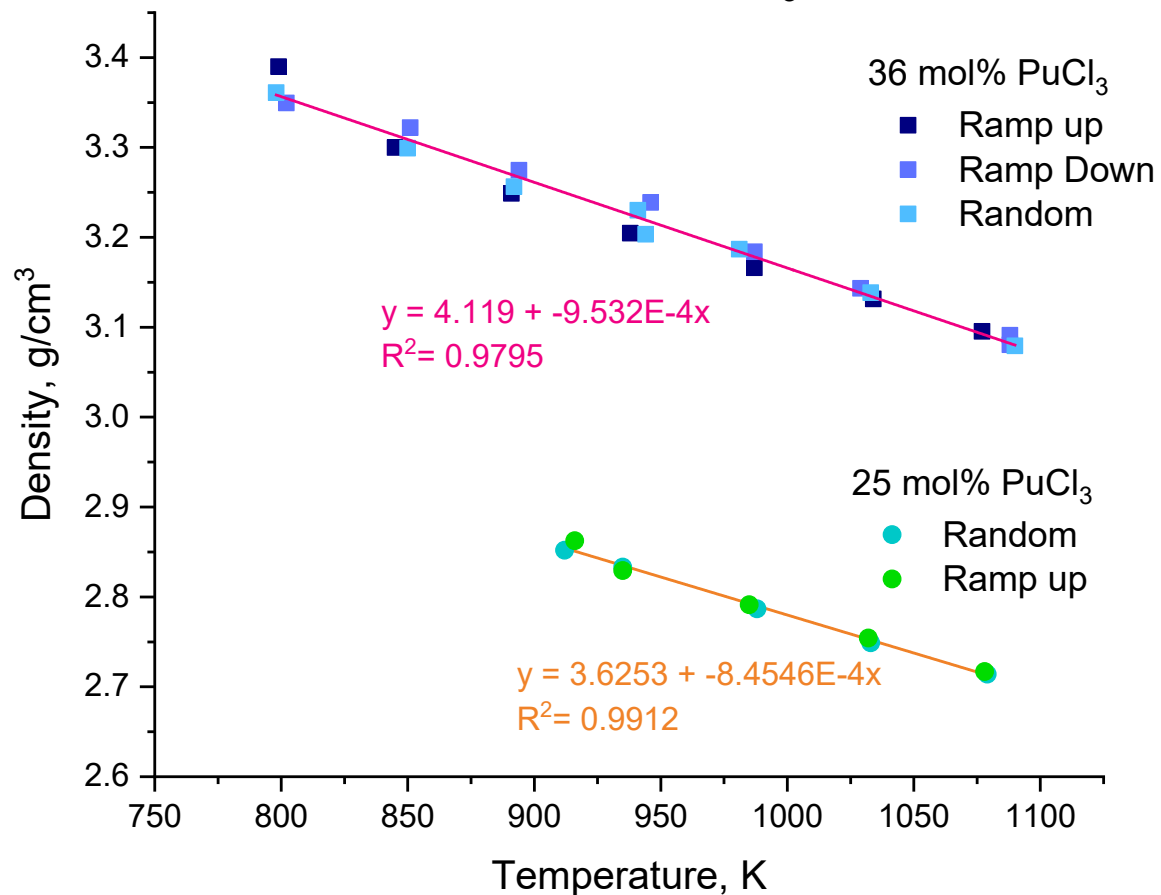
- Archimedes' hydrostatic method
- 5 mass measurements per temp
- Heating, cooling, randomized cycle

$$\rho_{\text{salt}} = \frac{M_{\text{air}} - W_{\text{salt}}}{V_0(1 + 3 \alpha (T - T_0))}$$

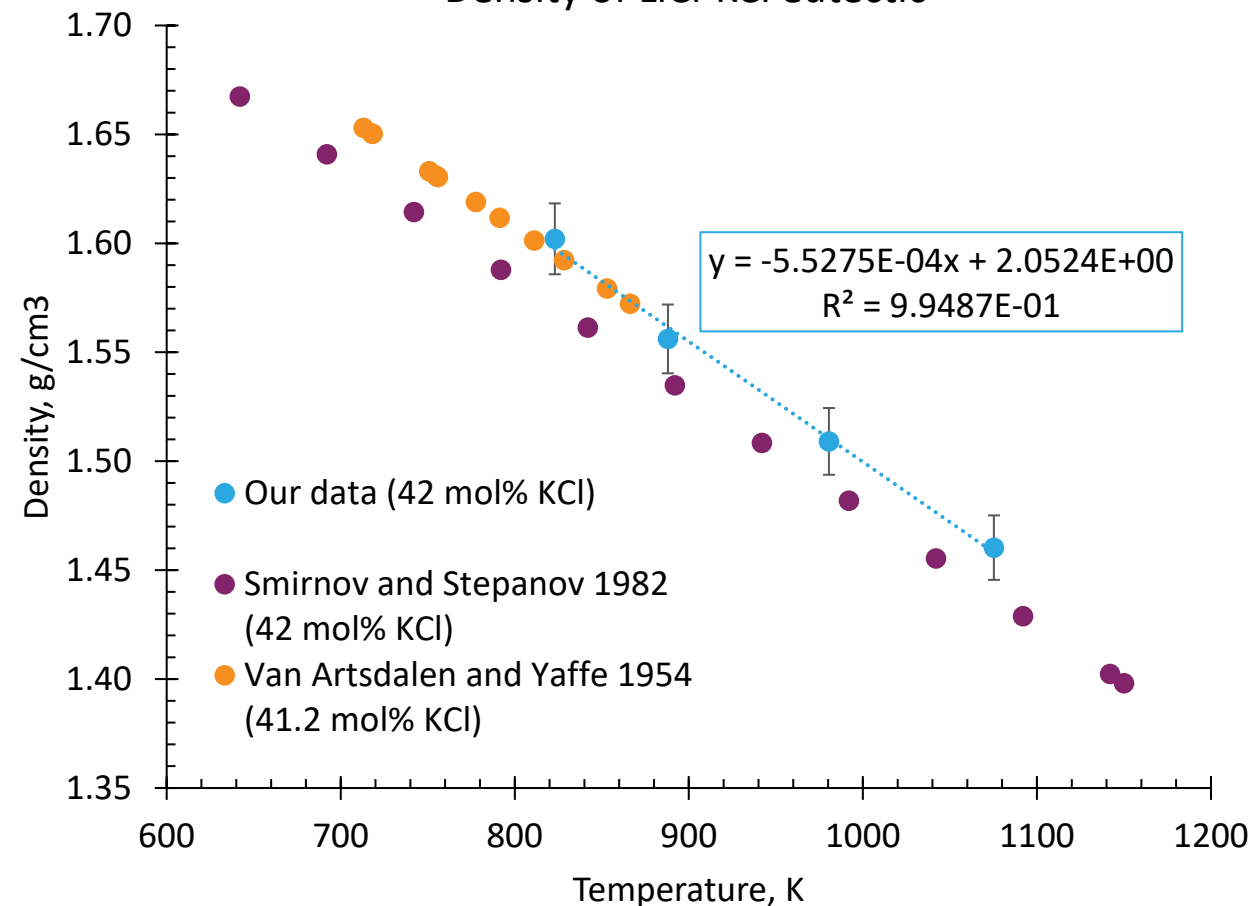


Density of PuCl₃-NaCl mixtures

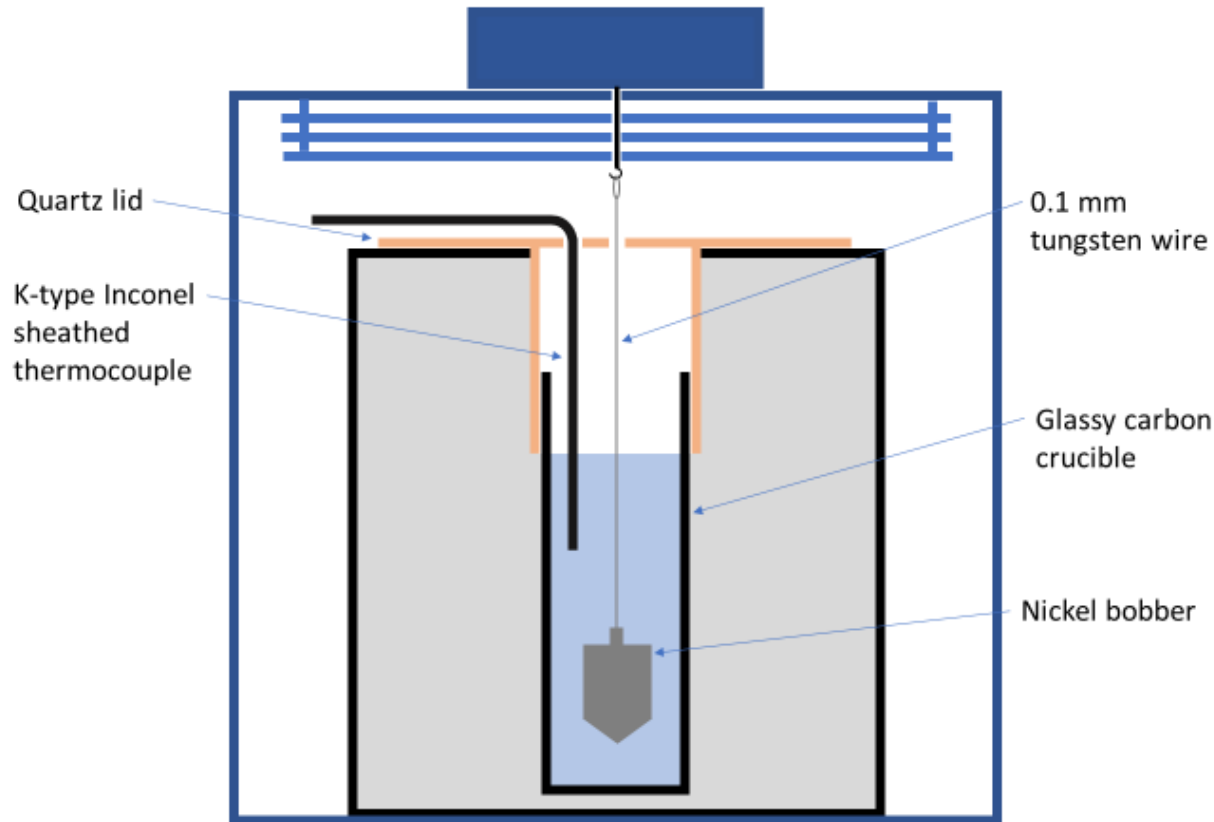
Density of NaCl-PuCl₃ Salts



Density of LiCl-KCl eutectic



Density of PuCl_3 -NaCl mixtures



- Archimedes' hydrostatic method
- 5 mass measurements per temp
- Heating, cooling, randomized cycle

$$\rho_{salt} = \frac{M_{air} - W_{salt}}{V_0(1 + 3 \alpha (T - T_0))}$$

$$\frac{\pi D \gamma}{g}$$

$$V_0 + \Delta V = (L_0 + \Delta L)^3 = L^3 + 3L^2\Delta L + 3L\Delta L^2 + \Delta L^3$$

$$D = 0.01 \text{ cm}$$

$$\gamma \sim 0.120 \frac{\text{N}}{\text{m}}$$

$$g = 980.7 \text{ cm/s}^2$$

$$\frac{\pi D \gamma}{g} = 0.00384 \text{ g}$$