

- The gas methane, CH_4 , has a critical point at $-82\text{ }^\circ\text{C}$ and 46 atm. Can methane be liquefied at $25\text{ }^\circ\text{C}$? Explain your answer.

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The critical temperature (T_c) is the temperature above which a substance cannot exist as a liquid. Thus, methane cannot be liquefied above $-82\text{ }^\circ\text{C}$ and so cannot be liquefied at $25\text{ }^\circ\text{C}$.