

Answer on Question #43483-Physics-Molecular Physics-Thermodynamics

Can the same Vander Waals' Gas

- i) Have more than one inversion temperature?
- ii) Show both heating and cooling effect?

Answer

- i) No. Vander Waals' Gas have one inversion temperature:

$$T_i = \frac{2a}{bk_B},$$

where k_B is Boltzmann's constant, a and b are constants depending on intermolecular forces and molecular volume, respectively.

- ii) No. Vander Waals' Gas can show heating effect at very high temperature and cooling effect at very low temperature.