Question #46808, Chemistry, Inorganic Chemistry

If 3.0 L of oxygen gas at is cooled at constant pressure until the volume becomes 1.50 L, then what is the final temperature?

Answer:

To solve this problem you need to use Charles law equations $V_1 / T_1 = V_2 / T_2$.

Because initial conditions are not specified, then we take the standard ambient temperature and pressure (SATP).

T₁= 25°C= 298 K V₁=3.0 L V₂=1.5 L T₂= ?

 $V_1 / T_1 = V_2 / T_2$

 $T_{2=}(T1*V2)/V_1$

T₂₌(298*1.5)/3=**149 (K)**