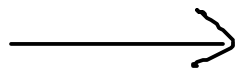


$$\begin{array}{l} 3.92 \text{ mL} \\ 760 \text{ mmHg} = P \\ 18^\circ\text{C} = 291 \text{ K} \end{array}$$



$$\begin{array}{l} V = ? \\ 1 \text{ atm} = P \\ 0^\circ\text{C} = 273 \text{ K} \end{array}$$

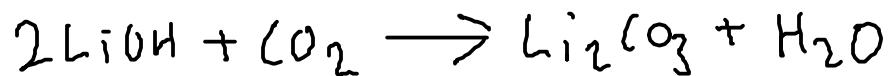
$$\frac{\cancel{P_1} V_1}{T_1} = \frac{\cancel{P_2} V_2}{T_2}$$

$$760 \text{ mmHg} = 1 \text{ atm}, P \text{ constant}$$

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$\frac{3.92 \text{ mL}}{291 \text{ K}} = \frac{V_2}{273 \text{ K}}$$

$$3.68 \text{ mL} = V_2$$



327g LiOH ; what V of  $\text{CO}_2$  at  $218^\circ\text{C}$ , 781 mmHg  
can be absorbed?

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$$\text{LiOH} : 23.95 \text{ g LiOH} = 1 \text{ mol LiOH} \qquad 760 \text{ mmHg} = 1 \text{ atm}$$

$$327 \text{ g LiOH} \times \frac{1 \text{ mol LiOH}}{23.95 \text{ g LiOH}} \times \frac{1 \text{ mol CO}_2}{2 \text{ mol LiOH}} = 6.8267 \text{ mol CO}_2$$

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$$V = \frac{nRT}{P} \quad \left| \quad n = 6.8267 \text{ mol} \quad T = 218^\circ\text{C} = 491 \text{ K} \right.$$
$$\left. \quad R = 0.08206 \frac{\text{L}\cdot\text{atm}}{\text{mol}\cdot\text{K}} \quad P = 781 \text{ mmHg} = 1.027 \text{ atm} \right.$$

$$V = \frac{(6.8267 \text{ mol}) \left( 0.08206 \frac{\text{L}\cdot\text{atm}}{\text{mol}\cdot\text{K}} \right) (491 \text{ K})}{(1.027 \text{ atm})}$$

$$= 268 \text{ L}$$

6.63, p 257

0.180 kg  $H_2O$ , change temp from  $19^\circ C$  to  $96^\circ C$

Find  $Q$

sp ht  $H_2O = 4.18 J/g^\circ C$

$$Q = \text{mass} \times \text{sp ht} \times \Delta T$$

$$= (180 \text{ g}) \left( 4.18 \frac{\text{J}}{\text{g}^\circ \text{C}} \right) (96^\circ \text{C} - 19^\circ \text{C})$$

$$Q = 57934.8 \text{ J}$$

$$Q = \boxed{58 \text{ kJ}}$$