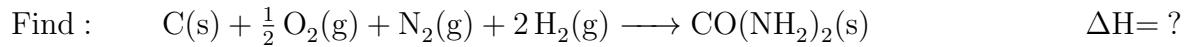


HESS' LAW 2



Given :

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|-----|--|---------------------------------|
| (1) | $2NH_3(g) + 3H_2O(l) \longrightarrow NH_4NO_3(s) + 4H_2(g)$ | $\Delta H = + 583.6 \text{ kJ}$ |
| (2) | $CH_2O(l) \longrightarrow CO(g) + H_2(g)$ | $\Delta H = - 1.9 \text{ kJ}$ |
| (3) | $CH_2O(l) + 2NH_3(g) \longrightarrow CO(NH_2)_2(s) + 2H_2(g)$ | $\Delta H = - 133.1 \text{ kJ}$ |
| (4) | $C(s) + \frac{1}{2}O_2(g) \longrightarrow CO(g)$ | $\Delta H = - 110.5 \text{ kJ}$ |
| (5) | $H_2(g) + \frac{1}{2}O_2(g) \longrightarrow H_2O(l)$ | $\Delta H = - 285.8 \text{ kJ}$ |
| (6) | $N_2(g) + 2H_2(g) + \frac{3}{2}O_2(g) \longrightarrow NH_4NO_3(s)$ | $\Delta H = - 583.6 \text{ kJ}$ |
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|------------|--|---------------------------------|
| (3) | $CH_2O(l) + 2NH_3(g) \longrightarrow CO(NH_2)_2(s) + 2H_2(g)$ | $\Delta H = - 133.1 \text{ kJ}$ |
| rev (2) | $CO(g) + H_2(g) \longrightarrow CH_2O(l)$ | $\Delta H = + 1.9 \text{ kJ}$ |
| rev (1) | $NH_4NO_3(s) + 4H_2(g) \longrightarrow 2NH_3(g) + 3H_2O(l)$ | $\Delta H = - 583.6 \text{ kJ}$ |
| (4) | $C(s) + \frac{1}{2}O_2(g) \longrightarrow CO(g)$ | $\Delta H = - 110.5 \text{ kJ}$ |
| (6) | $N_2(g) + 2H_2(g) + \frac{3}{2}O_2(g) \longrightarrow NH_4NO_3(s)$ | $\Delta H = - 583.6 \text{ kJ}$ |
| re 3 x (5) | $3H_2O(l) \longrightarrow 3H_2(g) + \frac{3}{2}O_2(g)$ | $\Delta H = + 857.4 \text{ kJ}$ |
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