**中五化學 熱力學**

答案

**利用標準燃燒焓變計算標準反應焓變**

已知：

1. $∆H\_{c}^{∅}$[C2H2(g)] = -1299 kJ mol-1
2. $∆H\_{c}^{∅}$[H2(g)] = -285.8 kJ mol-1
3. $∆H\_{c}^{∅}$[C2H6(g)] = -1560 kJ mol-1

計算以下反應的標準反應焓變：

C2H2(g) + 2H2(g) C2H6(g)

$$∆H\_{}^{∅}$$

**路經1**

C2H2(g) + 2H2(g) C2H6(g)

**路經2**

$∆H\_{c}^{∅}$[C2H6(g)]

$$×\\_\\_1\\_\\_$$

+ \_$\frac{7}{2}$\_O2(g)

$∆H\_{c}^{∅}$[H2(g)]

$$×\\_\\_2\\_\\_$$

+ \_1\_O2(g)

$∆H\_{c}^{∅}$[C2H2(g)]

$$×\\_\\_1\\_\\_$$

+ \_$\frac{5}{2}$\_O2(g)

2CO2(g) + 3H2O(l)

$∆H\_{}^{∅}$= ($∆H\_{c}^{∅}$[C2H2(g)] x\_\_1\_\_) + ($∆H\_{c}^{∅}$[H2 (g)] x\_\_2\_\_) + (-$∆H\_{c}^{∅}$[C2H6] x\_\_1\_\_)

 = (-1299) + (-285.8 x 2) + (+1560)

 = -310.6 kJ mol-1