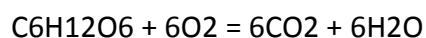


### Question #75774, Chemistry / Physical Chemistry / Completed

The standard enthalpies of formation of  $\text{CO}_2(\text{g})$ ,  $\text{H}_2\text{O}(\text{l})$  and glucose (s) at  $25^\circ\text{C}$  are  $-400\text{kJ}$ ,  $-300\text{kJ/mol}$  and  $-1300\text{kJ/mol}$ , respectively. The standard enthalpy of combustion per gram of glucose at  $25^\circ\text{C}$  is

- (1)  $2900\text{kJ}$
- (2)  $-2900\text{kJ}$
- (3)  $-16.11\text{kJ}$
- (4)  $16.11\text{kJ}$

#### Solution:



$$6(-400) + 6(-300) - (-1300) = -2400 - 1800 + 1300 = -2900\text{kJ/mol}$$

$$M = 180\text{g/mol}$$

$$-2900/180 = -16.11\text{kJ/g}$$

**Answer: (3)  $-16.11\text{kJ/g}$ .**