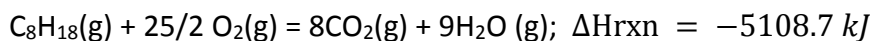


## Answer on Question #55348 - Chemistry - General chemistry

### Question:

For a particular isomer of  $C_8H_{18}$ , the following reaction produces 5108.7 kJ of heat per mole of  $C_8H_{18}(g)$  consumed, under standard conditions. What is the standard enthalpy of formation of this isomer of  $C_8H_{18}(g)$ ?

### Solution



$$\Delta H_{rxn} = 9\Delta H(H_2O) + 8\Delta H(CO_2) - \Delta H(C_8H_{18})$$

$$\Delta H(C_8H_{18}) = 9\Delta H(H_2O) + 8\Delta H(CO_2) - \Delta H_{rxn}$$

$$\Delta H(C_8H_{18}) = 9(-241.8) + 8(-393.5) + 5108.7 = -215.5 \text{ kJ/mol}$$

**Answer:**  $-215.5 \text{ kJ/mol}$