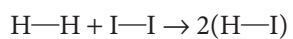


# Worksheet 7.4

## Bond energies

When hydrogen reacts with iodine, we can show the reaction as follows:



This shows the bonds broken and made during the course of the reaction.

**1** Given the following bond energies, calculate the heat of reaction.

$$\text{H—H} = 436 \text{ kJ/mol}$$

$$\text{I—I} = 151 \text{ kJ/mol}$$

$$\text{H—I} = 298 \text{ kJ/mol}$$

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**2** Is the reaction exothermic or endothermic?

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**3** Draw an energy level diagram for the reaction.