

CONCEPT REVIEW
16

Endothermic and exothermic reactions

EST
PAGES 114-117
Complete this concept review handout and keep it as a record of what you have learned.

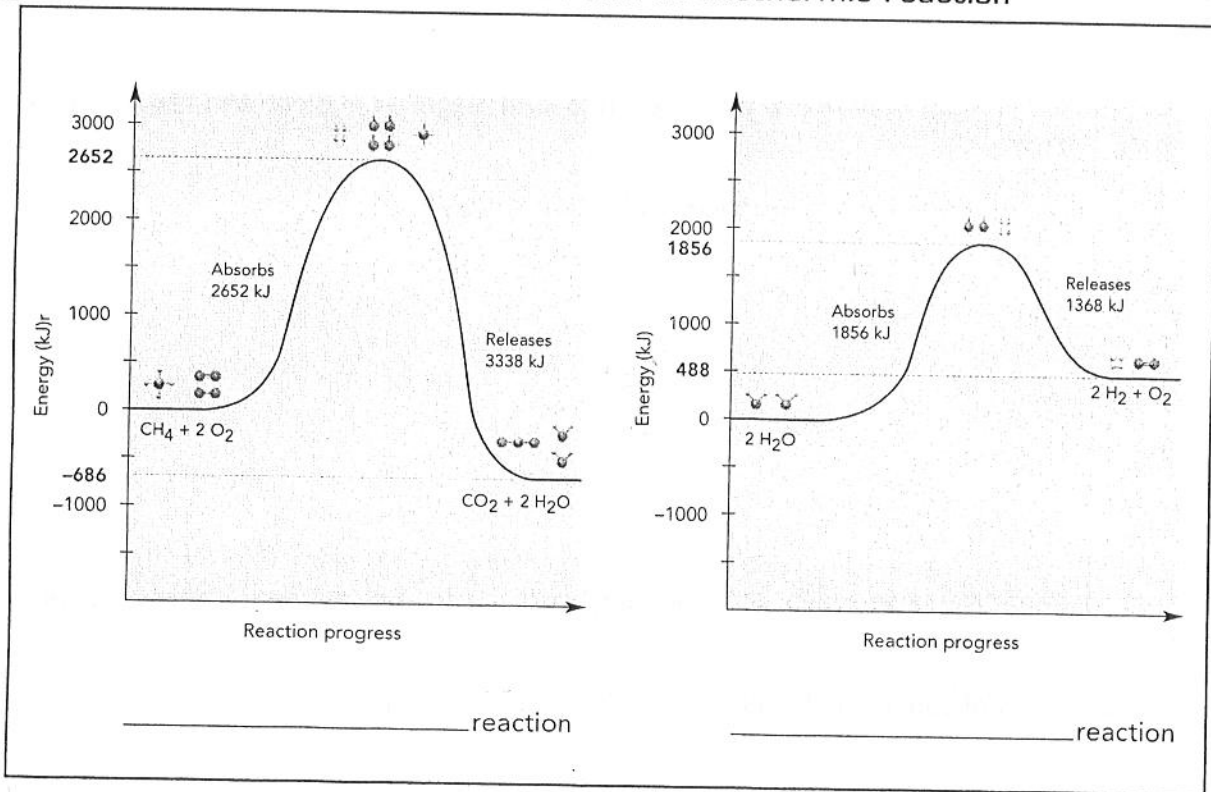
EST Definitions

- An exothermic reaction is _____
- An endothermic reaction is _____

EST Reaction energy

The amount of energy released or absorbed by a reaction can be estimated by calculating its reaction energy, which is _____

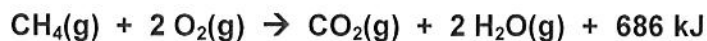
EST Graphs of an endothermic reaction and an exothermic reaction



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Stoichiometry and Energy

The combustion of methane releases 686 kJ of heat energy for every 1 mole of methane

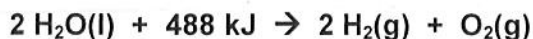


So now we can do stoichiometry with heat energy just like with grams and moles!! Yee Haw!!

e.g. Determine how many kJ of heat energy will be released if 100. g of methane burn?

Problems:

- 1) Water decomposes into its elements according to the following equation:



How many kJ of electrical energy would be required to produce 50. g of hydrogen gas?

- 2) One mole of magnesium reacts with oxygen to form magnesium oxide and releases 601 kJ of energy.

What mass of oxygen would produce 2000. kJ of energy?

- 3) Solid sodium hydroxide reacts with aqueous hydrochloric acid to produce approximately 90. kJ of heat energy.

What amount of sodium hydroxide will produce 35 kJ of heat energy?