Exothermic Reactions Encyclopedia Article

Exothermic Reactions

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Exothermic Reactions

An exothermic reaction is a chemical reaction which produces **heat**. During an exothermic reaction heat flows away from the reactants and into the surrounding environment. If an exothermic reaction is taking place inside a vessel the walls of the vessel take up the heat and feel warm to the touch. Many spontaneously occurring reactions are exothermic.

Methane reacting with **oxygen** is an example of an exothermic reaction. In this example more **energy** is produced from the formation of bonds than is required to break the existing bonds, creating an overall surplus of energy. This excess energy is released to the environment surrounding the system as heat. The rusting of **iron** is an exothermic reaction and this process is used in hand warmers which are utilized in cold regions.

The opposite of an exothermic reaction is an endothermic reaction, in which energy is taken in. Exothermic reactions are more common than endothermic ones.

The **enthalpy** change in an exothermic reaction is negative. Any burning is an example of an exothermic reaction, so fuels being burned are all exothermic reactions.

Exothermic reactions involve the production of energy which is given to the surrounding environment as heat.