Exothermic vs. Endothermic Reactions

Some reactions (both physical and chemical) require the addition of heat, or involve the release of heat.

Mar 6-10:08 AM

You feel heat as the transfer of heat energy to your body.

You feel cold as the removal of heat energy from your body.

Mar 6-10:09 AM

An exothermic reaction releases heat.

In a physical reaction this is due to the organization of molecules (ex: freezing). You must remove heat for this to happen.

It can also occur when substances are dissolving.

Ex: NaOH dissolved in water releases heat

Mar 6-10:13 AM

In a chemical reaction exothermic is due to more bonds forming then breaking. Forming bonds is a type of organization, so it releases energy.

Gummy Bear Experiment - Conversion of Bond Energy to Heat ...

Mar 6-10:39 AM

An endothermic reaction absorbs heat, so it feels cold.

In a physical reaction this is due to the disorganization of molecules (ex: melting). You must add for this to happen.

It can also occur when substances are dissolving.

Ex: Ammonium Nitrate dissolved in water requires heat

Mar 6-10:44 AM

In an endothermic chemical reaction more bonds break than form. Breaking bonds is a type of disorganization, so it requires energy.

A chemical cold pack for injuries is an example of an endothermic reaction.

Mar 6-10:47 AM