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Lewis Acids and Lewis Bases

You have been introduced to an acid (AlCl_3) that does not have any protons to donate.

How are these acids and bases (without the exchange of protons) defined?

[http://www.youtube.com/watch?v=6r6lb957AaQ&feature=player_embedded]

An example of Lewis acid base reaction (something as easy as dissolving a salt into water).

[http://www.youtube.com/watch?v=z7RkPU6ytiw&feature=player_embedded]

Here are some examples of different cations in water.

[http://www.youtube.com/watch?v=TTTTcFqYVic&feature=player_embedded]

FYI

For more information:

A visualization of the bond formation: <http://www.youtube.com/watch?v=TBNT7gbOpwY>

An interactive site to determine different Lewis Acid Base complexations: http://www.chem.ox.ac.uk/vrchemistry/livechem/transitionmetals_content.html