

Conjugate Acid Base Pairs

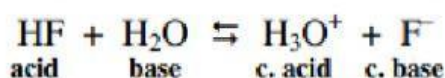
Name-

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An **acid** is defined as a proton (H^+) donor while a **base** is a proton acceptor. The substance that is produced after an acid has donated its proton is called the **conjugate base** while the substance formed when a base accepts a proton is called the **conjugate acid**. The conjugate acid can donate a proton to the conjugate base, to reform the original reactants in the reverse reaction.

Acids donate protons
Bases accept protons

A proton is a hydrogen ion

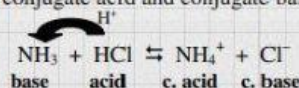


In the reaction above HF is the acid and H_2O is the base. The HF has given a proton to the H_2O , forming H_3O^+ and F^- . Since the product H_3O^+ can donate a proton back to F^- it is labeled the conjugate acid, while the F^- is the conjugate base.

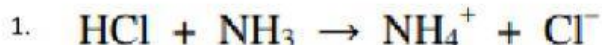
Example

Write an equation that shows NH_3 reacting with HCl. Label the acid, base, and conjugate acid and conjugate base.

- Write reactants and transfer a proton from the acid to the base:



For each equation. Identify the acid, the base, the conjugate acid, and the conjugate base in each of the equations.



Q2. Fill in the following table.

Acid	Base	Conjugate Acid	Conjugate Base	Equation
HNO_2	H_2O			$HNO_2 + H_2O \rightarrow NO_2^- + H_3O^+$
H_2O	F^-	HF	OH^-	
				$NH_3 + HCN \rightarrow NH_4^+ + CN^-$
		H_2O	ClO_3^-	