



Physics. *You work it out.*

[Home](#) [Gameboard](#) [Chemistry](#) [Physical](#) [Acids & Bases](#) [Common Acids and Bases](#)

Common Acids and Bases

A Level


Test your knowledge of common acids and bases with the questions below.

Part A Nitric acid

Enter the molecular formula for nitric acid (listing hydrogen in the formula first).

Part B Sulfuric acid

Enter the molecular formula for sulfuric acid (listing hydrogen in the formula first).

Part C Hydrochloric acid

Enter the molecular formula for hydrochloric acid (listing hydrogen in the formula first).

Part D Carbonic acid

Enter the molecular formula for carbonic acid (listing hydrogen in the formula first).

Part E Ammonia

Enter the molecular formula for ammonia.

Part F Potassium hydroxide

Enter the molecular formula for potassium hydroxide.

Part G Sodium hydroxide

Enter the molecular formula for sodium hydroxide.

Part H Ethanoic acid

Ethanoic acid is an example of a carboxylic acid, containing the carboxylic acid group composed of four atoms. If not drawing out the organic structure, we still usually make the functional group it contains clear, by writing the formula as:

CH₃

Items:

H C N O F



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[Home](#) [Gameboard](#) [Chemistry](#) [Physical](#) [Acids & Bases](#) [Acid-base Terminology](#)

Acid-base Terminology

A Level
P P P

The terminology surrounding acids and bases can be a bit confusing. Answer the questions below to test your understanding of this topic.

Part A Fully dissociated

What do we call an acid or base that fully dissociates in aqueous solution?

Part B High mol dm^{-3}

What do we call an acid or alkali solution that has a high value of mol dm^{-3} ?

Part C Low mol dm^{-3}

What do we call an acid or alkali solution that has a low value of mol dm^{-3} ?

Part D Acidic solutions

An acid with a very high K_a value is a acid, but it can still be if we create a solution of it with large amounts of water. At the same concentration, a acid will have a lower pH than a acid.

Items:

strong

weak

concentrated

dilute

Part E Two acidic protons

What do we call an acid such as H_2SO_4 that has two acidic protons it can lose in succession?

Created for isaacphysics.org by Andrea Chlebikova

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[Home](#)[Gameboard](#)[Chemistry](#)[Physical](#)[Acids & Bases](#)[Essential Pre-Uni Chemistry J1.4](#)

Essential Pre-Uni Chemistry J1.4



Give the conjugate acid of NH_3 .

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Essential Pre-Uni Chemistry J1.5



Give the conjugate base of H_2SO_4 .

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[Home](#)[Gameboard](#)[Chemistry](#)[Physical](#)[Acids & Bases](#)[Essential Pre-Uni Chemistry J1.6](#)

Essential Pre-Uni Chemistry J1.6



Give the conjugate base of NH_3 .

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Essential Pre-Uni Chemistry J1.7



Give the conjugate base of $\text{H}_3\text{N}^+\text{CH}_2\text{COO}^-$.

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[Home](#)[Gameboard](#)[Chemistry](#)[Physical](#)[Acids & Bases](#)[Essential Pre-Uni Chemistry J1.8](#)

Essential Pre-Uni Chemistry J1.8



Give the conjugate acid of $\text{H}_3\text{N}^+\text{CH}_2\text{COO}^-$.

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[Home](#)[Gameboard](#)[Chemistry](#)[Physical](#)[Acids & Bases](#)[Essential Pre-Uni Chemistry J1.9](#)

Essential Pre-Uni Chemistry J1.9



Give the conjugate acid of PO_4^{3-} .

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[Home](#)

[Gameboard](#)

[Chemistry](#)

[Physical](#)

[Acids & Bases](#)

[Essential Pre-Uni Chemistry J1.10](#)

Essential Pre-Uni Chemistry J1.10



Give the conjugate base of CH_3OH .

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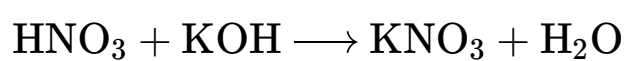
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[Home](#) [Gameboard](#) [Chemistry](#) [Physical](#) [Acids & Bases](#) [Acid-Base Reactions](#)

Acid-Base Reactions

A Level
P P P

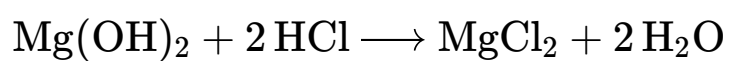
Part A Reaction 1



☐ acid-base reaction

☐ other

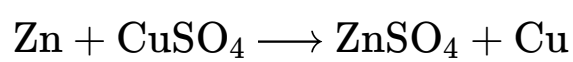
Part B Reaction 2



☐ acid-base reaction

☐ other

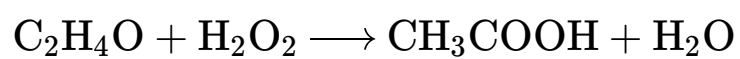
Part C Reaction 3



☐ acid-base reaction

☐ other

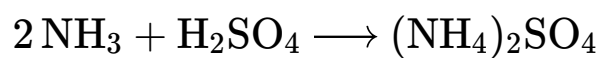
Part D **Reaction 4**



☐ acid-base reaction

☐ other

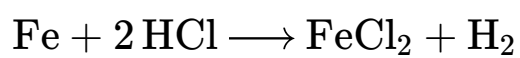
Part E **Reaction 5**



☐ acid-base reaction

☐ other

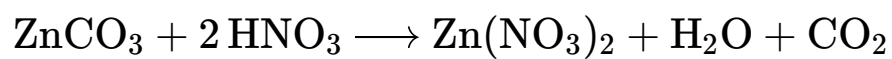
Part F **Reaction 6**



☐ acid-base reaction

☐ other

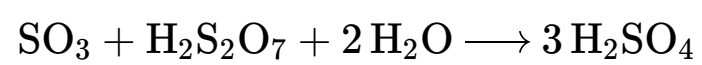
Part G **Reaction 7**



☐ acid-base reaction

☐ other

Part H **Reaction 8**



☐ acid-base reaction

☐ other

Based on Question J1.3 from the Physical Chemistry book

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