

Worksheet 4: Identifying Types of Acids and Bases.

As quickly as possible, identify the compounds below by type of acid or base and the symbol to be used in an acid or base calculation (answer key below)

Possible types of acid or base answers:

strong acid, weak acid, strong base, weak base, Lewis acid, neither, amphiprotic

Possible symbols: H^+ , OH^- , HA, A^- , B, BH^+ , none

Name or molecular formula	Type of acid or base	Symbol in calculations
hydrochloric acid	Strong acid	H^+
potassium malonate	Weak base	A^-
NH_4Cl	Weak acid	BH^+
H_2SO_4		
HCOOH		
tartaric acid		
hydrofluoric acid		
$Ba(OH)_2$		
HNO_2		
hypochlorous acid		
ammonium nitrate		
NH_3		
lithium hydroxide		
$FeCl_3$		
potassium bisulfate		
Br_2		
phosphoric acid		
dimethylamine		
$CH_3CH_2C=CCOOH$		
$CH_3COO^-Na^+$		
$Al(OH)_3$		
$(CH_3)_2NH$		
$CH_3NH_3^+Cl^-$		
Sulfurous acid		
Hydronium ion		
H_2O		
$NaHCO_3$		
Sodium carbonate		
H_2CO_3		
H_3PO_4		
Hydroxide ion		
$HClO_3$		
Ammonium acetate		
Potassium chloride		
H_3O^+		
Hydroiodic acid		
Br^-		
CH_3COOH		
BH_3		

Name or molecular formula	Type of acid or base	Symbol in calculations
hydrochloric acid	Strong acid	H^+
potassium malonate	Weak base	A^-
NH_4Cl	Weak acid	BH^+
H_2SO_4	Strong acid	H^+
$HCOOH$	Weak acid	HA
tartaric acid	Weak acid	HA
hydrofluoric acid	Weak acid	HA
$Ba(OH)_2$	Strong base	OH^-
HNO_2	Weak acid	HA
hypochlorous acid	Weak acid	HA
ammonium nitrate	Weak acid	BH^+
NH_3	Weak base	B
lithium hydroxide	Strong base	OH^-
$FeCl_3$	Weak acid	Lewis acid
potassium bisulfate	amphiprotic	HA^-
Br_2	neutral	none
phosphoric acid	Weak acid	H_3A
dimethylamine	Weak base	B
$CH_3CH_2C=CCOOH$	Weak acid	HA
$CH_3COO^-Na^+$	Weak base	A^-
$Al(OH)_3$	Weak base	OH^-
$(CH_3)_2NH$	Weak base	B
$CH_3NH_3^+Cl^-$	Weak acid	BH^+
Sulfurous acid	Weak acid	HA
Hydronium ion	Strong acid	H^+
H_2O	amphiprotic	H^+ and OH^-
$NaHCO_3$	amphiprotic	HA^-
Sodium carbonate	Weak base	A^-
H_2CO_3	Weak acid	HA
H_3PO_4	Weak acid	HA
Hydroxide ion	Strong base	OH^-
$HClO_3$	Strong acid	H^+
Ammonium acetate	Weak acid and weak base	BH^+ and A^-
Potassium chloride	Neutral	none
H_3O^+	Strong acid	H^+
Hydroiodic acid	Strong acid	H^+
Br^-	Neutral	none
CH_3COOH	Weak acid	HA
BH_3	Weak acid	Lewis acid