

CLASSES OF COMPOUNDS

MOLECULAR

Made of Molecules
Molecules are made entirely of neutral nonmetal atoms.

ACID

Formula begins with hydrogen

Examples

HCl	H ₃ PO ₄
HNO ₃	H ₂ SO ₄
H ₂ S	H ₂ CO ₃

COVALENT

Examples

CO ₂	H ₂ O
I ₄ O ₉	BrF ₂
N ₂ O	CCl ₄

IONIC

Made of Ions

Cations
metal or ammonium

Anions
nonmetal or polyatomic anion

SALT

Cations
metal or ammonium

Anions
any anion but hydroxide

Examples

NaCl	FeS
NH ₄ I	MgSO ₄
AgNO ₃	K ₂ O

BASE

Cations
metal

Anions
hydroxide

Examples

KOH	Ca(OH) ₂
Al(OH) ₃	Fe(OH) ₂
Ba(OH) ₂	NaOH

IONIC OR MOLECULAR?

Does the formula begin with a metal or ammonium?

Yes - ionic

No - molecular (all nonmetals)

COVALENT, ACID, BASE, OR SALT?

- Does formula begin with hydrogen?
 - if yes - acid
 - if no - go to 2
- Does formula end with hydroxide?
 - if yes - base
 - if no - go to 3
- Does formula begin with metal or ammonium?
 - if yes - salt
 - if no - covalent