

Ionic or Covalent

In each of the examples below you must identify the compound as being either IONIC or COVALENT. The type of bond that a compound forms is based on the types of elements bonded together. You must be able to identify elements as either METALS or NON-METALS. To do that you use their location on the periodic table:

H	Metals, Nonmetals, and Metalloids																He	
Li	Be											B	C	N	O	F	Ne	metals
Na	Mg											Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	metalloids
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	nonmetals
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	—	Uuq	—	—	—	—	
Ce		Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu				
Th		Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr				

Finally, to identify a compound as IONIC or COVALENT you simply need to use these rules:

METAL bonded to a NON-METAL	→	IONIC
NON-METAL bonded to a NON-METAL	→	COVALENT

Metals do not bond to other metals!

Use the rules above to decide if each of the compound below is IONIC or COVALENT:

Name and Formula	Ionic or Covalent??
Sodium chloride, NaCl	
Calcium oxide, CaO	
Carbon monoxide, CO	
Nickel bromide, NiBr ₂	
Dinitrogen monoxide, N ₂ O	
Silver sulfate, Ag ₂ SO ₄	
Arsenic triiodide, AsI ₃	
Dibromine monoxide, Br ₂ O	
Molybdenum sulfide, Mo ₂ S ₇	
Sucrose, C ₁₁ H ₂₂ O ₁₁	
Tin chloride, SnCl ₂	
Sulfur hexafluoride, SF ₆	
Selenium phosphide, SeP	
Neodymium nitride, NdN	
Yttrium oxide, Y ₂ O ₃	
Nitrogen dioxide, NO ₂	
Rhodium selenide, RhSe ₂	
Sulfur dioxide, SO ₂	
Sodium sulfate, Na ₂ SO ₄	
Methane, CH ₄	

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Arsenic triiodide, AsI ₃	COVALENT
Dibromine monoxide, Br ₂ O	
Molybdenum sulfide, Mo ₂ S ₇	IONIC
Sucrose, C ₁₁ H ₂₂ O ₁₁	
Tin chloride, SnCl ₂	IONIC
Sulfur hexafluoride, SF ₆	COVALENT
Selenium phosphide, SeP	
Neodymium nitride, NdN	IONIC
Yttrium oxide, Y ₂ O ₃	
Nitrogen dioxide, NO ₂	COVALENT
Rhodium selenide, RhSe ₂	
Sulfur dioxide, SO ₂	COVALENT
Sodium sulfate, Na ₂ SO ₄	
Methane, CH ₄	COVALENT