

# Chemical Bonding Worksheet

Ionic Bond  
Covalent Bond  
Metallic Bond

between a Metal and Non-Metal  
between a Non-Metal and Non-Metal  
between a Metal and Metal

(M + NM)  
(NM + NM)  
(M + M)

Determine if the elements in the following compounds are metals or non-metals. Describe the type of bonding that occurs in the compound.

Compound	Element 1 (metal or non-metal?)	Element 2 (metal or non-metal?)	Bond Type
NO <sub>2</sub>	N = non-metal	O = non-metal	covalent
NaCl	Na metal	Cl - non	ionic
SO <sub>2</sub>	S non	O non	covalent
PO <sub>4</sub> <sup>3-</sup>	P non	O non	covalent
MgBr <sub>2</sub>	Mg metal	Br non	ionic
CaO	Ca metal	O non	ionic
H <sub>2</sub> O	H non	O non	covalent
K <sub>2</sub> O	K metal	O non	ionic
Cu-Zn alloy	Cu metal	Zn metal	metallic
O <sub>2</sub>	O non	O non	covalent
CuCl <sub>2</sub>	Cu metal	Cl non	ionic
NO <sub>2</sub> <sup>-</sup>	N non	O non	covalent
TiO <sub>2</sub>	Ti metal	O non	ionic
HF	H non	F non	covalent
Rb <sub>2</sub> S	Rb metal	S non	ionic
Au-Ag mixture	Au metal	Ag metal	metallic
Fe <sub>2</sub> O <sub>3</sub>	Fe metal	O non	ionic
C <sub>6</sub> H <sub>12</sub> O <sub>22</sub>	C non	H non O non	covalent