

Use your Periodic Table and Ion List and calculator to answer questions on this quiz.

5

1. What is the name of the compound SF₄? ^{old newer}
 { fluorine sulphide | sulfurous fluoride | sulfur tetrafluoride | tetrafluoro sulphide | cannot exist }
 That compound has { polar covalent | nonpolar covalent | ionic | indeterminate } bonds
 and its shape will be { straight | star | spherical | pyramid | flat | cube | bent }.
 Sulfur's oxidation state must be { +14 | +6 | +4 | +2 | +1 | 0 | -1 | -2 | -4 | -6 | -14 }
 because fluorine's will be { +14 | +6 | +4 | +2 | +1 | 0 | -1 | -2 | -4 | -6 | -14 }.

9

2. Forming a compound from magnesium combining with sulfur:
 a) Magnesium's oxidation state will be { +12 | +8 | +2 | +1 | +1.2 | 0 | -1 | -2 | -8 | -12 }
 b) Sulfur's oxidation state will be { +16 | +8 | +2.5 | +2 | +1 | 0 | -1 | -2 | -2.5 | -8 | -16 }
 c) Its bonds will be { covalent non-polar | covalent polar | ionic | non-existent }
 d) the compound's formula will be MgS and should be named magnesium sulfide.
 e) its molecular mass will be 56.38 g/mol show steps!
 $(24.31 + 32.07) \frac{g}{mol}$
 atom masses from periodic Table = Mg S

10

3. Forming a compound from nitrogen combining with calcium:
 a) Nitrogen's oxidation state will be { +14 | +7 | +3.0 | +2 | +1 | 0 | -1 | -2 | -3 | -7 | -14 }
 b) Calcium's oxidation state will be { +40 | +20 | +2 | +1 | 0 | -1 | -2 | -20 | -40 }
 c) Its bonds will be { covalent non-polar | covalent polar | ionic | non-existent }
 d) the compound's formula will be Ca₃N₂ and should be named Calcium nitride.
 e) its molecular mass will be 148.26 g/mol show steps!
 $(3 \times 40.08 + 2 \times 14.01) \frac{g}{mol}$
 $(120.24 + 28.02) \frac{g}{mol}$

10

4. forming a compound from magnesium combining with nitrate:
 a) magnesium's oxidation state will be { +24 | +12 | +3 | +2 | +1.2 | +1 | 0 | -1 | -1.2 | -2 | -3 | -12 | -24 }
 b) nitrate's oxidation state will be { +9 | +4 | +3 | +2 | +1 | 0 | -1 | -2 | -3 | -4 | -6 }
 d) the compound's formula will be Mg(NO₃)₂ and should be named magnesium (di)nitrate.
 e) its molecular mass will be 148.33 g/mol show steps!
 $(24.31 + 2 \times [14.01 + 3 \times 16]) \frac{g}{mol}$
 $(24.31 + 2 \times [62.01]) \frac{g}{mol}$
 $(24.31 + 124.02) \frac{g}{mol}$

$$\begin{array}{r} 20.1 + 7.7 \\ \hline 34 \end{array} \quad \begin{array}{r} 10 \times .125 \\ 10 \times .25 \\ \hline 7.75 + 2.0 \\ \hline 10 \end{array}$$