

Nomenclature Exercise #1 - Naming Simple Binary Compounds

Name each of the following simple binary compounds.

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| 1. H_2O | 11. Na_2S |
| 2. Li_2O | 12. KI |
| 3. SrO | 13. CaO |
| 4. Al_2O_3 | 14. BeI_2 |
| 5. NaCl | 15. AlCl_3 |
| 6. MgS | 16. AlP |
| 7. CaBr_2 | 17. LiBr |
| 8. K_3P | 18. Rb_3N |
| 9. RbCl | 19. RbF |
| 10. Sr_3P_2 | 20. Al_2P_3 |

Nomenclature Exercise #2 - Creating Simple Binary Formulas

Write formulas for each of the following simple binary compounds.

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| 1. Lithium sulphide | 11. Hydrogen nitride |
| 2. Potassium bromide | 12. Potassium chloride |
| 3. Cesium iodide | 13. Lithium nitride |
| 4. Calcium phosphide | 14. Beryllium oxide |
| 5. Sodium fluoride | 15. Sodium iodide |
| 6. Strontium oxide | 16. Magnesium oxide |
| 7. Beryllium sulphide | 17. Potassium chloride |
| 8. Magnesium bromide | 18. Calcium sulphide |
| 9. Lithium oxide | 19. Rubidium oxide |
| 10. Strontium chloride | 20. Strontium nitride |

Nomenclature Exercise #3 - Creating Formulas for the Polyatomic Ions of 1+, 3- and 2-

Using the positive and negative ions given below make up the correct formulas.

1. NH_4^+ and PO_4^{3-}
2. H^+ and BO_3^{3-}
3. Li^+ and CO_3^{2-}
4. Na^+ and SO_4^{2-}
5. K^+ and CrO_4^{2-}
6. Rb^+ and $\text{Cr}_2\text{O}_7^{2-}$
7. Cs^+ and HPO_4^{2-}
8. Be^{2+} and $\text{Cr}_2\text{O}_7^{2-}$
9. Mg^{2+} and CrO_4^{2-}
10. B^{3+} and HPO_4^{2-}
11. Ca^{2+} and SO_4^{2-}
12. Sr^{2+} and CO_3^{2-}
13. Ba^{2+} and BO_3^{3-}
14. B^{3+} and PO_4^{3-}
15. NH_4^+ and HPO_4^{2-}
16. H^+ and $\text{Cr}_2\text{O}_7^{2-}$
17. Rb^+ and CO_3^{2-}
18. Ca^{2+} and HPO_4^{2-}
19. B^{3+} and $\text{Cr}_2\text{O}_7^{2-}$
20. Be^{2+} and BO_3^{3-}

Using the IUPAC names below come up with the correct formulas.

1. Ammonium borate
2. Potassium phosphate
3. Beryllium sulphate
4. Hydrogen chromate
5. Sodium monohydrogen phosphate
6. Boron chromate
7. Potassium dichromate
8. Hydrogen phosphate
9. Cesium borate
10. Sodium carbonate
11. Strontium dichromate
12. Barium monohydrogen phosphate
13. Barium chromate
14. Lithium sulphate

Give the Correct IUPAC names for the following molecular formulas.

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| 1. $(\text{NH}_4)_2\text{CO}_3$ | 9. Rb_3PO_4 |
| 2. Rb_2HPO_4 | 10. Rb_2CrO_4 |
| 3. $\text{Li}_2\text{Cr}_2\text{O}_7$ | 11. MgCr_2O_7 |
| 4. MgHPO_4 | 12. $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ |
| 5. SrHPO_4 | 13. Cs_2CO_3 |
| 6. Na_3BO_3 | 14. $\text{Ca}_3(\text{BO}_3)_2$ |
| 7. H_2SO_4 | 15. SrCrO_4 |
| 8. $\text{Sr}_3(\text{PO}_4)_2$ | 16. $\text{B}_2(\text{CO}_3)_3$ |

Nomenclature Exercise #4 - Creating Formulas for the Polyatomic 1- Ions

Using the IUPAC names below come up with the correct molecular formulas.

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| 1. Ammonium cyanide | 10. Rubidium iodate |
| 2. Potassium nitrate | 11. Potassium permanganate |
| 3. Beryllium hydroxide | 12. Cesium bicarbonate |
| 4. Cesium permanganate | 13. Sodium hydroxide |
| 5. Boron iodate | 14. Hydrogen cyanide |
| 6. Sodium bicarbonate | 15. Barium bisulphate |
| 7. Rubidium dihydrogen phosphate | 16. Cesium nitrate |
| 8. Ammonium hydroxide | 17. Magnesium permanganate |
| 9. Sodium chlorate | 18. Calcium cyanide |

Given the formulas below provide the correct IUPAC name.

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| 1. HOH | 11. LiHCO ₃ |
| 2. LiCN | 12. KHSO ₄ |
| 3. RbNO ₃ | 13. CsIO ₃ |
| 4. Be(ClO ₃) ₂ | 14. NH ₄ H ₂ PO ₄ |
| 5. Ca(MnO ₄) ₂ | 15. RbOH |
| 6. HCH ₃ COO | 16. Be(CN) ₂ |
| 7. NH ₄ HCO ₃ | 17. Ca(NO ₃) ₂ |
| 8. Ba(IO ₃) ₂ | 18. KClO ₃ |
| 9. Mg(HSO ₄) ₂ | 19. CsCH ₃ COO |
| 10. Sr(NO ₃) ₂ | 20. KHCO ₃ |

Nomenclature Exercise #5 - Creating Formulas for the Transition Metals
Using the IUPAC formulas below come up with correct names

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| 1. ScCl ₃ | 11. PtO ₂ |
| 2. Cr(NO ₃) ₆ | 12. Zn ₃ P ₂ |
| 3. MnO | 13. Sn(HSO ₄) ₄ |
| 4. Fe(MnO ₄) ₂ | 14. Au ₂ O ₃ |
| 5. CoF ₃ | 15. Bi ₃ (BO ₃) ₅ |
| 6. Ni ₃ (PO ₄) ₂ | 16. NiN |
| 7. CuCl ₂ | 17. TiO ₂ |
| 8. ZnO | 18. VSO ₄ |
| 9. GeS ₂ | 19. Cr(H ₂ PO ₄) ₃ |
| 10. AgCl | 20. W(MnO ₄) ₄ |

Given the names below provide the correct IUPAC formulas.

16. Chromium (II) sulphate
17. Manganese (IV) phosphide
18. Iron (III) sulphide
19. Cobalt (II) dichromate
20. Nickel (III) nitride
21. Copper (I) cyanide
22. Zinc carbonate
23. Cadmium phosphate
24. Mercury (II) iodide
25. Gold (III) permanganate

Nomenclature Exercise #6 - Creating Formulas for Non-metal to Non-metal Compounds

Using the names below come up with the correct formulas.

1. Carbon dioxide
2. Bromine monoxide
3. Iodine monochloride
4. Antimony trifluoride
5. Bromine dioxide
6. Carbon monosulphide
7. Phosphorus tribromide
8. Dinitrogen tetraoxide
9. Chlorine trifluoride
10. Phosphorus pentachloride
11. Bromine monofluoride
12. Dinitrogen pentoxide
13. Carbon tetraiodide
14. Tellurium dioxide

Given the formulas below provide the correct names.

