SCH3UI
Ms Williamson

Name: _____
Date: _____

Hydrates

Hydrates are compounds that contain water as part of its ionic crystal structure.

When heat is applied to a hydrate, it will decompose to produce water vapour and an ionic compound. This proves that the waster is loosely held to the ionic compound. When this water, called water of hydrations, is removed, the product is referred to as **anhydrous**.

Epsom salts is a common example of a hydrate. $MgSO_4 \bullet 7H_2O$. This formula means that for every magnesium sulphate there are seven molecules of water weakly bonded to it. The dot before the water molecules signifies a hydrated compound.

The word "hydrate" is included in the name of these compounds. Prefixes are added to the word "hydrate" to show the exact number of water molecules per formula.

Example:

Write the name of $CuSO_4 \bullet 5H_2O$

Step 1. Name the first part like usual

Copper (II) sulfate

Step 2. Name the hydrate after the first part with the appropriate prefix.

Copper (II) sulfate pentahydrate

SCH3UI
Ms Williamson

Name: _____
Date: _____

Fill in the missing information

Name	Formula
Sodium carbonate decahydrate	
Iron (III) oxide trihydrate	
Aluminum chloride hexahydrate	
Lithium chloride tetrahydrate	
Calcium chloride dihydrate	
Zinc sulphate heptahydrate	
Lithium chloride tetrahydrate	
Cobalt (II) chloride hexahydrate	
Nickel (III) chloride pentahydrate	
Cadmium nitrate tetrahydrate	
	$Ba(OH)_2 \bullet 8H_2O$
	$CuSO_4 \bullet 5H_2O$
	$MgSO_4 \bullet 7H_2O$
	$MgCl_2 \bullet 6H_2O$
	$ZnCl_2 \bullet 6H_2O$
	$AlCl_2 \bullet 6H_2O$
	$CoCl_2 \bullet 6H_2O$
	$Al_2O_3 \bullet 2H_2O$
	$Na_2CO_3 \bullet 10H_2O$
	$CaCl_2 \bullet 2H_2O$
	$MgSO_4 \bullet 7H_2O$
	$Na_2SO_4 \bullet 10H_2O$

SCH3UI
Ms Williamson

Name: _____
Date: _____

Nomenclature #5: Odds And Ends when Naming Ionic Compounds

1. Write correct formulae for each of the following names:

sodium hypochlorite (bleach)	mercury (II) periodate
manganese (IV) oxide	tin (IV) bromate
potassium permanganate	zinc hypophosphite
chromium (II) sulfate	chromium (III) hydrogen sulfate
iron (III) acetate	silver nitrate
tin (IV) iodite	lead (IV) hydrogen carbonate
lithium oxalate	cobalt (II) perchlorate
arsenic (V) thiosulfate	gold (III) fluoride
calcium permanganate	sodium chromate
aluminum hydrogen borate	strontium cyanate
copper (II) hydrogen carbonate	lead (IV) hypoiodite
silver dichromate	iron (III) borate
ammonium cyanide	antimony (III) hydrogen sulfate
mercury (II) acetate dihydrate	
silver cyanide tetrahydrate	
copper (II) sulfate pentahydrate	
copper (I) carbonate heptahydrate	
iron (III) perchlorate nonahydrate	

2. Write the IUPAC names for the following compounds. Use Roman numerals when necessary.

Na_2O	$Hg(ClO_4)_2$
KNO_2	$Zn(OH)_2$
$CrSO_4$	$Cr(HSO_3)_3$
$Fe(CH_3COO)_3$	$LiIO_4$
AuF_3	$CaSO_2$
$HgMnO_4$	NaCN
$Pb(IO)_2$	$Sn(H_2PO_4)_2$
$CuHSO_4$	$Al_2(Cr_2O_7)_3$
Ag_2HPO_3	H_2O_2
$NiPO_4$	$Pb(HCO_3)_4$
$Co(IO_2)_2$	$Sb_3(BO_3)_5$
$MnO_2 \cdot 4\ H_2O$	
$CuNO_3 \cdot 6\ H_2O$	
$NaCH_3COO \cdot 3\ H_2O$	
$AuCN \cdot 8\ H_2O$	