

Name:

Per:



# Ion Soup!



The soup contains the following ions (some already grouped into neutral compounds at the top):

- Cl<sup>-</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup> (already grouped)
- Na, Cl, Al
- Cl, Cl, Cl, Cl, Cl
- NO<sub>3</sub>, F, Mg, Na, N, K<sup>+</sup>, K, Cl
- NO<sub>3</sub>, Ca, F, Mg, K, K, K, S, K
- NO<sub>3</sub>, Ca, Ca<sup>2+</sup>, Cl, K, K, K
- Ca, NO<sub>3</sub>, F, K, SO<sub>4</sub>, SO<sub>4</sub>
- Ca, OH<sup>-</sup>, OH, Li, SO<sub>4</sub>, Al, Al, SO<sub>4</sub>
- Ca, PO<sub>4</sub>, Mg, Mg, OH, SO<sub>4</sub>, Sr<sup>2+</sup>, Be, NH<sub>4</sub>
- Ca, PO<sub>4</sub>, OH, OH, Al, PO<sub>4</sub>, Be, NH<sub>4</sub>, S
- Ca, PO<sub>4</sub>, OH, OH, PO<sub>4</sub>, Be, NH<sub>4</sub>, NH<sub>4</sub>
- Ca, PO<sub>4</sub>, Fe<sup>3+</sup>, Be, Be, OH, NH<sub>4</sub>, NH<sub>4</sub>
- Be, Be, OH, OH, Cu<sup>2+</sup>, SO<sub>4</sub>
- Na, Na, OH, OH, NH<sub>4</sub>
- Cl, Na

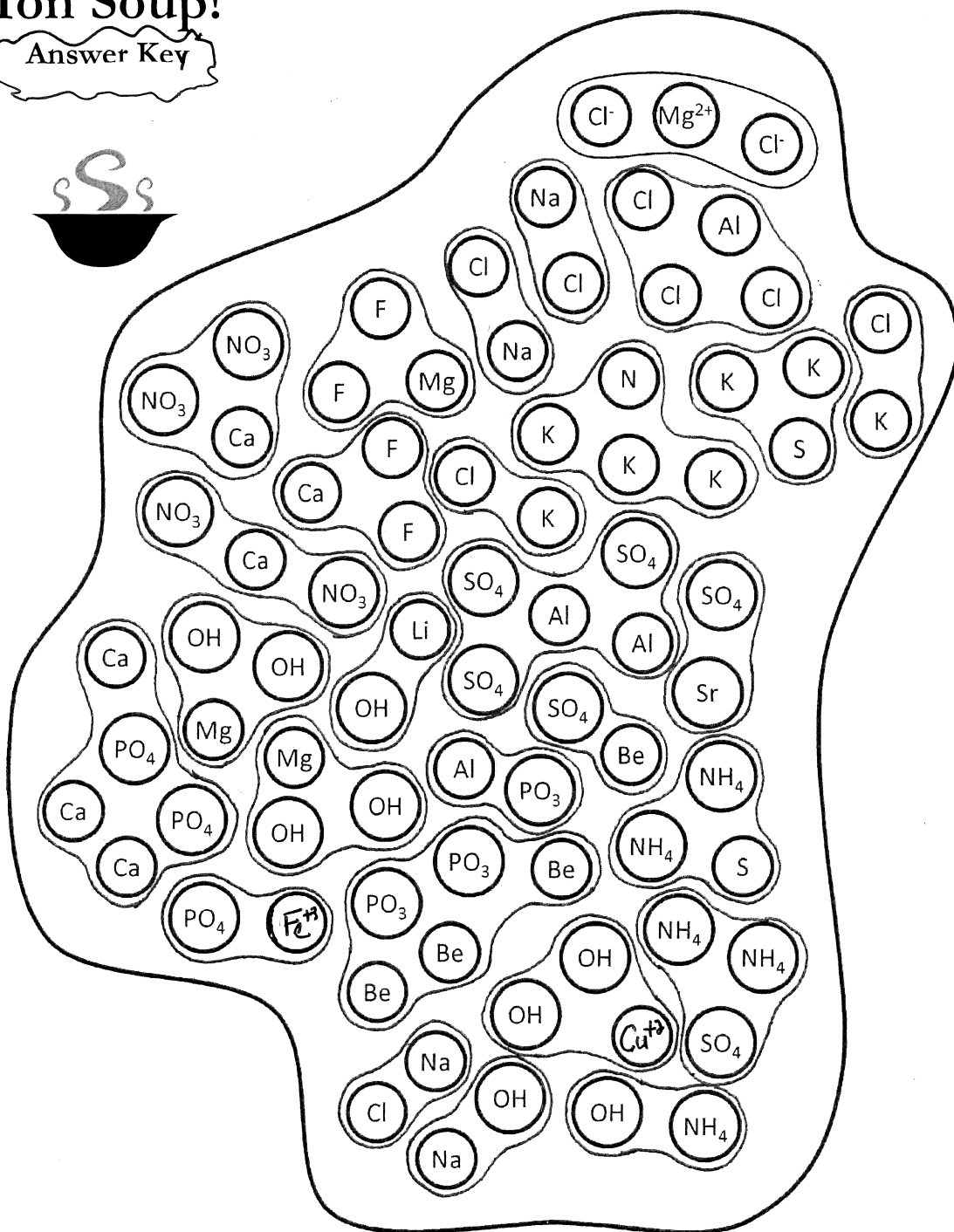
## Instructions:

A soup of ions needs to be grouped into neutral ionic compounds. Unfortunately, <sup>some of</sup> the charges on the ions got lost when the soup was spilled. You'll have to work out the charges yourself so that you can put the compounds together. Also, you should have **no uncircled ions** when you're done.

The first compound has been completed to start you off. Good luck!

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## Answer Key



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When you are done, answer the questions on the back.

List the formulas and names of all the compounds you circled in the ion soup. You do not need to list the same formula more than once.

<u>MgCl<sub>2</sub></u>	<u>magnesium chloride</u>
<u>AlCl<sub>3</sub></u>	<u>aluminum chloride</u>
<u>NaCl</u>	<u>sodium chloride</u>
<u>MgF<sub>2</sub></u>	<u>magnesium fluoride</u>
<u>K<sub>3</sub>N</u>	<u>potassium nitride</u>
<u>K<sub>2</sub>S</u>	<u>potassium sulfide</u>
<u>KCl</u>	<u>potassium chloride</u>
<u>Ca(NO<sub>3</sub>)</u>	<u>calcium nitrate</u>
<u>CaF<sub>2</sub></u>	<u>calcium fluoride</u>
<u>Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub></u>	<u>aluminum sulfate</u>
<u>SrSO<sub>4</sub></u>	<u>strontium sulfate</u>
<u>LiOH</u>	<u>lithium hydroxide</u>
<u>Mg(OH)<sub>2</sub></u>	<u>magnesium hydroxide</u>
<u>BeSO<sub>4</sub></u>	<u>beryllium sulfate</u>
<u>Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub></u>	<u>calcium phosphate</u>
<u>Fe PO<sub>4</sub></u>	<u>iron (III) phosphate</u>
<u>(NH<sub>4</sub>)<sub>2</sub>S</u>	<u>ammonium sulfide</u>
<u>Be<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub></u>	<u>beryllium phosphate</u>
<u>(NH<sub>4</sub>)SO<sub>4</sub></u>	<u>ammonium sulfate</u>
<u>Cu(OH)<sub>2</sub></u>	<u>Copper (II) hydroxide</u>
<u>NaOH</u>	<u>sodium hydroxide</u>
<u>NH<sub>4</sub>OH</u>	<u>ammonium hydroxide</u>