

Appendix

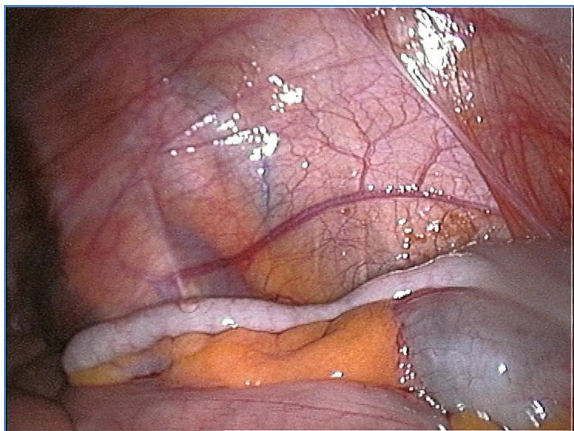
The appendix of a chemistry book is where we put a great big list of the information that we don't feel like putting in the body of the book. Usually it consists of tables and stuff, so it's not really all that interesting. Generally, you shouldn't memorize most of this stuff, because it's already in a table, and why would anybody put it in a table if they didn't want people to use it?

Contents:

Appendix 1: Table of Polyatomic Ions

Appendix 2: Activity Series

Appendix 3: Solubility Table



The other type of appendix, in its native environment. If anybody ever asks if you want to see their appendix scar, the correct answer is "no."

http://commons.wikimedia.org/wiki/File:Appendix_vermiformis.jpg

Appendix 1: List of common polyatomic ions

The following is a list of polyatomic ions that you might run into when naming compounds. This is by no means a comprehensive list of all the polyatomic ions in the universe (that would be a very big chart), but it does include the ones that you'll probably see on an exam. I have put an asterisk by the names of the polyatomic ions that I make my students memorize – your teacher may find it important to have you memorize other ions, so you may want to ask about that.

Name of ion	Formula/charge of ion
acetate*	$\text{C}_2\text{H}_3\text{O}_2^{-1}$ or $\text{CH}_3\text{COO}^{-1}$
ammonium*	NH_4^{+1}
azide	N_3^{-1}
bicarbonate*	HCO_3^{-1}
carbonate*	CO_3^{-2}
chlorate	ClO_3^{-1}
chlorite	ClO_2^{-1}
chromate*	CrO_4^{-2}
cyanide*	CN^{-1}
dichromate	$\text{Cr}_2\text{O}_7^{-2}$
hydroxide*	OH^{-1}
hypochlorite	ClO^{-1}
nitrate*	NO_3^{-1}
nitrite*	NO_2^{-1}
oxalate	$\text{C}_2\text{O}_4^{-2}$
perchlorate	ClO_4^{-1}
permanganate*	MnO_4^{-1}
phosphate*	PO_4^{-3}
phosphite*	PO_3^{-3}
sulfate*	SO_4^{-2}
sulfite*	SO_3^{-2}

Interesting Polyatomic Ions



Ion Iliescu served two terms as the president of Romania after the 1989 revolution against Communist rule. Because he was comprised of considerably more than one atom, he is technically a “polyatomic Ion.”

http://commons.wikimedia.org/wiki/File:Ion_Iliescu.jpg

Appendix 2: Activity Series

Metals (most active to least active):

Li > K > Ca > Na > Mg > Al > Mn > Zn > Fe > Ni > Sn > Pb > Cu > Ag > Pt > Au

Halogens (most active to least active):

F > Cl > Br > I



Richard Simmons has long been known as a proponent of physical activity.

<http://commons.wikimedia.org/wiki/File:RichardSimmonsSept2011.jpg>

Appendix 3: Solubility Table

	$C_2H_3O_2^{-1}$	Br^{-1}	CO_3^{-2}	Cl^{-1}	OH^{-1}	I^{-1}	NO_3^{-1}	O^{-2}	PO_4^{-3}	SO_4^{-2}	S^{-2}
NH_4^+ , H^+ , alkali metals	S	S	S	S	S	S	S	S	S	S	S
Al^{+3}	S	S	X	S	I	S	S	I	I	S	D
Ba^{+2}	S	S	P	S	S	S	S	S	I	I	D
Ca^{+2}	S	S	P	S	P	S	S	P	P	P	P
Cu^{+2}	S	S	X	S	S	X	S	I	I	S	I
Fe^{+2}	X	S	P	S	I	S	S	I	I	S	I
Fe^{+3}	X	S	X	S	I	S	S	I	P	P	D
Pb^{+2}	S	S	X	I	P	P	S	P	I	P	I
Mg^{+2}	S	S	P	S	I	S	S	I	P	S	D
Mn^{+2}	S	S	P	S	I	S	S	I	P	S	I
Ag^{+1}	P	I	I	I	X	I	S	P	I	P	I
Sr^{+2}	S	S	P	S	S	S	S	S	I	P	S
Sn^{+2}	D	S	X	S	X	S	D	I	I	S	I
Sn^{+4}	S	S	X	S	I	D	X	I	X	S	I
Zn^{+2}	S	S	P	S	P	S	S	P	I	S	I

S = soluble in water (it dissolves)

P = partially soluble in water (some, but not all, of it dissolves)

I = insoluble in water (it doesn't dissolve)

D = decomposes in water (the compound breaks apart in water)

X = unknown (something bad happens to bust up the compound)



Like many witches, the Wicked Witch of the West was known for being water-soluble.

http://commons.wikimedia.org/wiki/File:The_Wizard_of_Oz_Margaret_Hamilton_1939_No_1.jpg