

## Oxides/Hydroxides Lab

### Introduction

For this lab you will be given 15 unknown specimens to identify. You can assume that they all are from the Oxides/Hydroxides group of minerals. Use the physical properties of the minerals to identify the specimens. Attached is a data sheet to use in the process of identifying the minerals. Some of the physical properties will not apply in all cases so you may enter "N/A" in those situations. Turn in the below sheet for grading but keep the data sheets in your notebook for use in future open book tests.

Specimen #	Mineral Name
1.	_____
2.	_____
3.	_____
4.	_____
5.	_____
6.	_____
7.	_____
8.	_____
9.	_____
10.	_____
11.	_____
12.	_____
13.	_____
14.	_____
15.	_____

# Mineral Specimen Data Sheet

Lab: \_\_\_\_\_

Specimen No.: \_\_\_\_\_

1. Hardness: \_\_\_\_\_

2. Color: \_\_\_\_\_

3. Streak: \_\_\_\_\_

4. Luster: \_\_\_\_\_

5. Crystal Habit: \_\_\_\_\_

6. Tenacity: \_\_\_\_\_

7. Specific Gravity: \_\_\_\_\_

8. Cleavage/Fracture: \_\_\_\_\_

9. Miscellaneous (Magnetic, Double refraction, etc.) \_\_\_\_\_

10. Notes:

Mineral	Formula	System	Specimen Quality☺
<u>Oxides</u>			
Anatase	TiO <sub>2</sub>	Tetragonal	f, f,g
Bauxite	Al <sub>2</sub> O <sub>3</sub>	aggregate	f,g(x6)
Cassiterite	SnO <sub>2</sub>	Tetragonal	f(x3),g,g
Chromite	FeCr <sub>2</sub> O <sub>4</sub>	Isometric	g(x6)
Chrysoberyl	BeAl <sub>2</sub> O <sub>4</sub>	Orthorhombic	g
*Columbite	(Fe,Mn)Nb <sub>2</sub> O <sub>6</sub>	Orthorhombic	g
Corundum	Al <sub>2</sub> O <sub>3</sub>	Hexagonal	g, g, g
Cuprite	Cu <sub>2</sub> O	Isometric	p,f,f,g,g
Franklinite	(Zn,Mn <sup>2+</sup> ,Fe <sup>2+</sup> )(Fe <sup>3+</sup> ,Mn <sup>3+</sup> ) <sub>2</sub> O <sub>4</sub>	Isometric	g(x3)
*Hematite (v. BIF)	Fe <sub>2</sub> O <sub>3</sub>	Hexagonal	g
Hematite (v. earthy)	Fe <sub>2</sub> O <sub>3</sub>	Hexagonal	g, g
Hematite (v. Specular)	Fe <sub>2</sub> O <sub>3</sub>	Hexagonal	g, g, g
Ilmenite	FeTiO <sub>3</sub>	Hexagonal	g(x5)
Magnetite	Fe <sub>3</sub> O <sub>4</sub>	Isometric	f, g,g
*Manganese nodules	MnO <sub>2</sub> , Fe <sub>2</sub> O <sub>3</sub>	aggregate	g,g
Psilomelane	(Ba,H <sub>2</sub> O) <sub>2</sub> Mn <sub>5</sub> O <sub>10</sub>	Monoclinic	g, g
Pyrochlore	(Na,Ca) <sub>2</sub> Nb <sub>2</sub> O <sub>6</sub> (OH,O)	Isometric	f
*Pyrolusite (v. dendrite)	MnO <sub>2</sub>	Tetragonal	g
Pyrolusite	MnO <sub>2</sub>	Tetragonal	f(x3),g(x3)
Rutile	TiO <sub>2</sub>	Tetragonal	f, g, g
Spinel	MgAl <sub>2</sub> O <sub>4</sub>	Monoclinic	g
Stibiconite	Sb <sub>3</sub> O <sub>6</sub> (OH)	Isometric	f,f, g,g
*Uraninite	UO <sub>2</sub>	Isometric	restricted
Zincite	(Zn, Mn)O	Hexagonal	g, g, g