

POM Lesson 23

Reactions Involving Metals

Name _____

Date _____

Class _____ Table _____

Getting Started (page 209)

1. How can metals differ from each other?

2&3. Complete Table 23-GS

Table 23-GS Metals Reactions With Oxygen in the Air

Metal	How It Reacts With Oxygen in the Air
copper	
iron	
magnesium	
sodium	
aluminum	
zinc	

Inquiry 23.1 Comparing the Reactions of Different Metals With Acid (page 210)

8-11. Complete Table 23-1.

Table 23-1 Observations of Metals Reacting With Hydrochloric Acid

Metal	Observations and Temperature Measurements
iron	
zinc	
copper	
magnesium	

12. Use your results to answer the following questions.

A. Did any chemical reactions take place? With which metals?

B. What evidence was there that chemical reactions were occurring?

C. Did any metals react with the acids? If so, which?

D. Of those that did react did they all react the same way? Explain.

E. Did the products of the reactions look the same?

F. Were there any temperature changes? If so, did the temperature increase or decrease?

G. Were the temperature changes the same for all of the metals? Explain.

14. Complete Table 23-2 using Table 23-1, your answers to the previous questions, and your observations of the demonstration.

Table 23-2 Order of Reactivity

Metal
Most reactive
1.
2.
3.
Least reactive
4.

15. Is there any similarity between Table 23-2 and the information you collected in “Getting Started”? If so, what similarity?

Inquiry 23.2 Investigating Corrosion (page 211)

1. Define corrode.

2.A. Do metal objects that are placed outdoors corrode?

B. What causes corrosion?

C. Do all metals corrode? Give an example.

Figure 23.2 Test Tube Setups for Inquiry 23.2

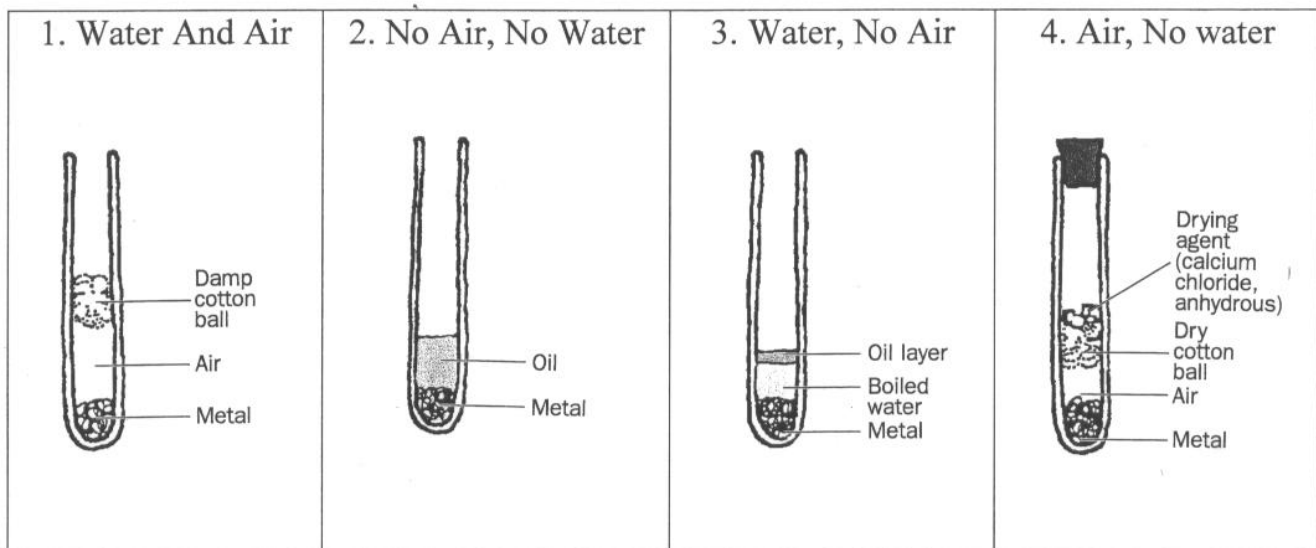


Table 23.3Fe Results For Inquiry 23.2 With Iron

Tube And Conditions	Appearance at Start	Appearance After _____ Days	Comments And Conclusions
1. Water And Air			
2. No Water, No Air			
3. Water, No Air			
4. Air, No Water			

Table 23.3Mg Results For Inquiry 23.2 With Magnesium

Tube And Conditions	Appearance at Start	Appearance After _____ Days	Comments And Conclusions
1. Water And Air			
2. No Water, No Air			
3. Water, No Air			
4. Air, No Water			

Table 23.3Zn Results For Inquiry 23.2 With Zinc

Tube And Conditions	Appearance at Start	Appearance After _____ Days	Comments And Conclusions
1. Water And Air			
2. No Water, No Air			
3. Water, No Air			
4. Air, No Water			

Table 23.3Cu Results For Inquiry 23.2 With Copper

Tube And Conditions	Appearance at Start	Appearance After _____ Days	Comments And Conclusions
1. Water And Air			
2. No Water, No Air			
3. Water, No Air			
4. Air, No Water			

12. Use your class results to answer the following questions.

A. Did all the metals corrode?

B. Did all the metals corrode to the same extent?

C. How fast do the metals corrode in air and water compared to reacting with acid?

