

Learning Guide 3B – Metals
Chem 1010

Introduction

What are some of the common materials that we make things out of?

Where do these materials come from?

What are some of their advantages and disadvantages?

Let's focus in on metals. What are some of their properties?

What are some metals that you can think of?

Notice that metals are either elements or alloys.

elements:

alloys:

Are we likely to make things out of pure elements?

What will happen if metals combine with other elements to form compounds?

mercury + sulfur \rightarrow mercury (II) sulfide

What things would disappear from our society if we had no metals?

Name that metal

Which vial contains which metal?

_____ tin	_____ copper
_____ lead	_____ antimony
_____ iron	_____ aluminum
_____ zinc	_____ chromium
_____ silver	_____ magnesium

Where do metals come from?

Only a few metals are found in the earth as metals rather than as ionic compounds.

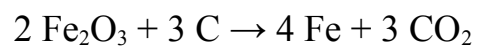
All of the rest are found as ores, which are naturally occurring ionic compounds.

Metals ores are usually oxides, sulfides, or carbonates.

The process of changing the metal ore into metal is called smelting.

What is needed besides to ore to produce the metal?

What is happening in this reaction?



What other method is used if no smelting agent can be found?

What is the biggest drawback of metals?

What is happening in these reactions?

