

Name \_\_\_\_\_

## Comparing Properties of Elements & Compounds

**Compounds** are combinations of matter. They are two or more elements whose atoms have chemically combined, or **bonded**.



When compounds are formed, the properties of the compound are different from the properties of the elements that make up the compound.

*For example:*

Sodium [Na] is an element. It is a bright, silvery metal. It is soft and reacts very easily. It floats on water. It may catch fire when it touches water.



Photo source: <http://resourcescommittee.house.gov>

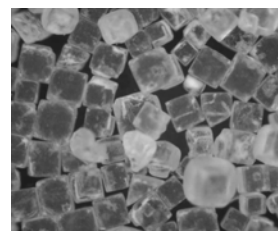
Chlorine [Cl] is an element. It is a greenish-yellow gas. It is an irritant to the lungs and mucus membranes. High concentrations of chlorine gas are fatal. Liquid chlorine can burn the skin.



Photo source: <http://www.theodoregray.com>

When sodium and chlorine combine comically, they form sodium chloride [NaCl], or everyday table salt. Table salt is a white solid made of tiny crystals that are shaped like cubes.

Photo source: <http://www.lpl.arizona.edu>



Baking Soda [ $\text{NaHCO}_3$ ] is another common compound. Another, more scientific name for baking soda is Sodium Bicarbonate. It is made up of four elements: Sodium [Na], Hydrogen [H], Carbon [C], and Oxygen [O].

What to do:

Use the following websites to research some of the physical properties of the elements that make up baking soda. Complete the chart to compare the properties of each element and the compound.

<http://periodic.lanl.gov/elements/11.html>

<http://www.chemicalelements.com/elements/na.html>

<http://www.webelements.com/>

Property	Baking Soda	Sodium	Hydrogen	Carbon	Oxygen
Color	<i>white</i>				
State / phase	<i>solid</i>				
Melting Point	<i>270°C</i>				
Boiling Point	<i>N/A</i>				

How do the properties of the elements compare to each other? How do they compare to the compound?

---



---



---



---