AIM | What are compounds 12 | and molecules?

A deck of playing cards has 52 cards. How many different ways can you put them together? Does the number 8 followed by 67 zeros surprise you? This is what it looks like:

What if you combined the chemical elements? There are only 106 elements, but we all know that there are more than 106 substances. In fact, there are millions and millions of substances.

Most of the substances we know are made up of two or more elements: water, salt, carbon dioxide, baking soda. These substances are possible because atoms of different elements can link up.

A compound is a substance made of linked-up atoms. The elements in the compound lose their own properties. The compound takes on new properties. Compounds do not even have to be in the same state as the elements of which they are made. For example, hydrogen and oxygen are both gases. They can link up to make water—a liquid. A compound must have at least one metal element and one nonmetal.

A molecule [MOL uh kyool] is the smallest part of a compound that still has the properties of that compound. A molecule must have at least two atoms. Some molecules have thousands of atoms.

Most compounds are found in nature. Some compounds are made by scientists.

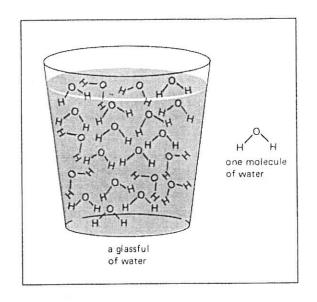
ABOUT MOLECULES

In the picture to the right, each of the groups labeled $\nearrow O$ stands for one molecule of water.

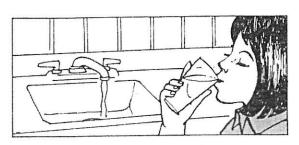
Each molecule is the same. Each molecule has all the properties of water.

The smallest part of a compound is just one molecule of that compound.

The molecules of any one compound are exactly alike.



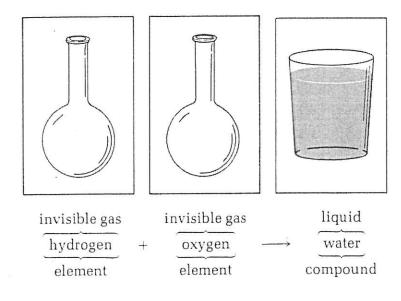
Three Different Molecules: Water, Salt, and Carbon Dioxide

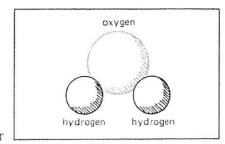


1. Water

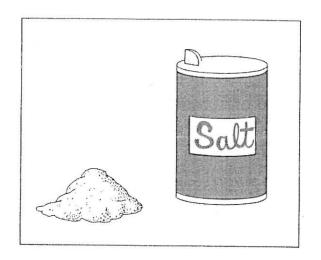
Water is a liquid compound. It is made of the elements hydrogen and oxygen.

Hydrogen and oxygen are invisible gases. They can link up to make water.





A. one molecule of water



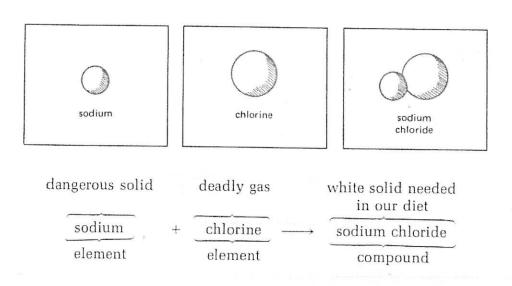
2. Salt

Table salt is a compound. It is made up of the elements sodium and chlorine.

Sodium is a dangerous metal. Chlorine is a poisonous gas.

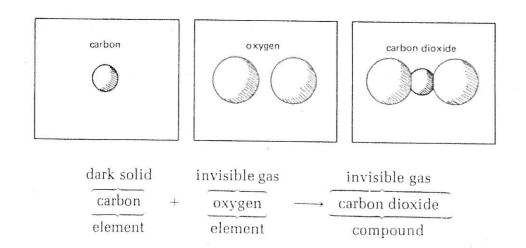
They can link up to form a compound that our bodies need.

The compound is sodium chloride. We call it salt.



3. Carbon Dioxide

Carbon dioxide is a gas compound. It is made of the elements carbon and oxygen.



SENTENCES

5. ____ compound

COMPLETING Complete the sentences with the choices below.

		7.5			
	• one million • compounds • nonmetal	rmillions 106 lose	•metal elements • two	molecule linked-up molecules	
1.	There are known elements.				
2.	The number of different known substances is more than				
3.	Elements combine	e to form	· · · · · · · · · · · · · · · · · · ·		
4.	Elements of a con	ipound	their properties.		
5.	A compound has	at least	elements.		
6.	A compound m	ust have at leas	t one	atom and one	
	Anna (17) 17 Anna (17) 17 17 17 17 17 17 17	atom.			
7.	The smallest part	of a compound is o	called a		
8.	In a small amount of a compound there may be of mol				
9.		nade of			
10.	All matter is mad	e up of	or	Manager Constitution 1	
· Name designation	MATCHING	Match the two list each number.	s. Write the correct letter	on the line next to	
1.	atom		a) has one kind of atom		
2.	molec	cule	b) short way of writing an element		
§3.	symb	ol	c) smallest part of an element		
4.	eleme	ent	d) two or more elements linked together		
5.	comp	ound	è) smallest part of a compound		

THROW In each of the following sets of terms, one of the terms does not ONE OUT belong. Circle that term.

1.	oxygen carbon element compound					
2.	carbon dioxide water element compound					
3.	chlorine sodium compound element					
4.	Na Hg compound symbol					
5.	symbol rust compound Epsom salts					
	TRUE OR Write T on the line next to the number if the sentence is true. FALSE Write F if the sentence is false.					
1.	All matter is made of atoms.					
2.	An element is matter.					
3.	A compound is matter.					
4.	All matter is made of elements or compounds.					
5.	Elements and compounds are made of atoms.					
6.	Compounds link up to make elements.					
7.	A compound can have one element.					
8.	The smallest part of a compound is one atom of that compound.					
9.	A compound must have at least one metal atom and one nonmetal atom.					
10.	There are more elements than compounds.					
	REACHING Why should you always follow instructions carefully who OUT mixing chemicals?					
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