

Elements1.3 - Classification of Matter

8/30/17

- cannot be broken down into other elements
- 118 known elements
- own symbol
- own properties
- around 132 million compounds + more everyday

"a specific instance  
↑ of matter"

| substance            | pure or mixture? | compound or element? | homo or heterogeneous? |
|----------------------|------------------|----------------------|------------------------|
| copper               | pure             | element              | homo                   |
| apple juice          | mixture          | mixture of compd     | homo                   |
| octane - $C_8H_{18}$ | pure             | compound             | homo                   |
| chicken soup         | mixture          | mixture of compd     | hetero                 |

Solids

- ① Crystalline solids - atoms or molecules are in a regular pattern  
fixed positions, don't move (vibrate in place)  
eg - diamond
- ② Amorphous solids - no regular pattern; random arrangement of atoms & molecules  
eg - charcoal

Liquids - atoms/molecules are packed together tightly (pack about as closely as in solids)  
free to move about  
fixed volume, assume shape of the container

Gases - lot of space b/w atoms/molecules → allows compression  
random movement - high velocity  
assume shape AND volume of the container