

### Which substances dissolve in water?

When some substances are added to water they disappear. We say they dissolve. If substances dissolve we say they are \_\_\_\_\_  
Some substances are more soluble in water than others. It depends on their molecular structure. If a substance does not dissolve we say it is \_\_\_\_\_

Try and find out how soluble the following substances are:

#### Materials:

oil  
Copper (II) sulfate  
Iron (II) sulfate  
Calcium carbonate  
Sodium chloride  
Potassium bromide  
Potassium iodide  
Sand  
Ethanol  
Calcium Sulphate

#### Safety:

Ethanol is very flammable and poisonous. They should not be placed near fire or inhaled

#### Method:

1. Describe the properties of the substances themselves.
2. For each substance, write the chemical formula and the name.
3. Place about 100mL of water into a beaker.
4. Place about 1 scoop of the substance (about 20 drops for the liquids) into the beaker and use a stirring rod to stir it for at least 2 minutes or until all of the material dissolves.
5. Record observations (did it dissolve or not, how fast, how much, what happens to the water? . . .)
6. Dispose of all materials in the waste beaker.
7. Repeat with the other materials available.

Table to show different substances dissolving in water

Name of substance	Formula	Insoluble or soluble
Copper (II) sulfate		
Iron (II) sulfate		

Calcium carbonate		
Potassium chloride		
Potassium bromide		
Sodium iodide		
Sand		
ethanol		
oil		
Calcium Sulphate		

Questions:

1. List all of the chemicals that dissolved (soluble).
2. List all of the chemicals that did not dissolve (insoluble).
3. Why is water called the universal solvent?