

# ION EXPERIMENT

For each of the following substances, predict whether it will conduct electricity or not conduct electricity. Write a Y on the space before the substance if you think it will. Write a N if you think it will not. Use the space after each substance to write the actual results of the experiment.

\_\_\_ DISTILLED WATER \_\_\_\_\_

\_\_\_ TABLE SALT \_\_\_\_\_

\_\_\_ DRAIN CLEANER \_\_\_\_\_

\_\_\_ AMMONIA \_\_\_\_\_

\_\_\_ BATTERY ACID \_\_\_\_\_

\_\_\_ CITRIC ACID \_\_\_\_\_

\_\_\_ BAKING SODA \_\_\_\_\_

\_\_\_ VINEGAR \_\_\_\_\_

\_\_\_ TAP WATER \_\_\_\_\_

\_\_\_ SUGAR \_\_\_\_\_

**ELECTROLYTE** - solution that contains \_\_\_\_\_. They are / are not able to conduct electricity

## TYPES OF ELECTROLYTES

1. **STRONG ELECTROLYTES** - contain \_\_\_\_\_ ions. These are \_\_\_\_\_ conductors of electricity.

Examples:

2. **WEAK ELECTROLYTES** - contain only a \_\_\_\_\_ amount of ions. These are \_\_\_\_\_ conductors of electricity.

Examples:

**NON-ELECTROLYTES** - contain \_\_\_\_\_ ions. These do / do not conduct electricity.

Examples:

## ION VALENCE NUMBERS

+1

hydrogen H +1  
sodium Na +1  
potassium K +1  
copper (I) Cu +1  
silver Ag +1  
gold Au +1  
lithium Li +1  
ammonium  $\text{NH}_4^+$  +1

+2

magnesium Mg +2  
barium Ba +2  
calcium Ca +2  
copper (II) Cu +2  
lead Pb +2  
iron (II) Fe +2  
zinc Zn +2  
nickel Ni +2

+3

aluminum Al +3  
iron (III) Fe +3  
cobalt Co +3

+4

tin Sn +4

-1

chloride Cl -1  
fluoride F -1  
bromide Br -1  
iodide I -1  
acetate  $\text{C}_2\text{H}_3\text{O}_2^-$  -1  
bicarbonate  $\text{HCO}_3^-$  -1  
chlorate  $\text{ClO}_3^-$  -1  
hydroxide OH -1  
nitrate  $\text{NO}_3^-$  -1

-2

oxide O -2  
sulfide S -2  
carbide C -2  
carbonate  $\text{CO}_3^{2-}$  -2  
sulfite  $\text{SO}_3^{2-}$  -2  
sulfate  $\text{SO}_4^{2-}$  -2  
tetraborate  $\text{B}_4\text{O}_7^{2-}$  -2  
tartrate  $\text{C}_4\text{H}_4\text{O}_6^{2-}$  -2

-3

nitride N -3  
phosphide P -3  
phosphate  $\text{PO}_4^{3-}$  -3  
borate  $\text{BO}_3^{3-}$  -3

**POSITIVE ION** - made from \_\_\_\_\_, have a \_\_\_\_\_ charge

**NEGATIVE ION** - made from \_\_\_\_\_, have a \_\_\_\_\_ charge

**RADICAL ION** - small \_\_\_\_\_ with either a \_\_\_\_\_ or \_\_\_\_\_ charge