

Comparing Physical and Chemical Properties:

Physical Properties

color
Shape

volume

mass

Chemical Properties

Ability to Rust

flammability

combustibility
Reactivity to light

pH

Which of these Physical Properties can be used to Identify a substance?

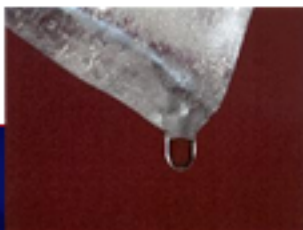
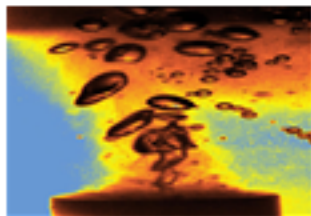
Can use to Identify:

Malleability
Hardness
density
Boiling Pt.
Melting Pt.
ductility

Cannot use to Identify:

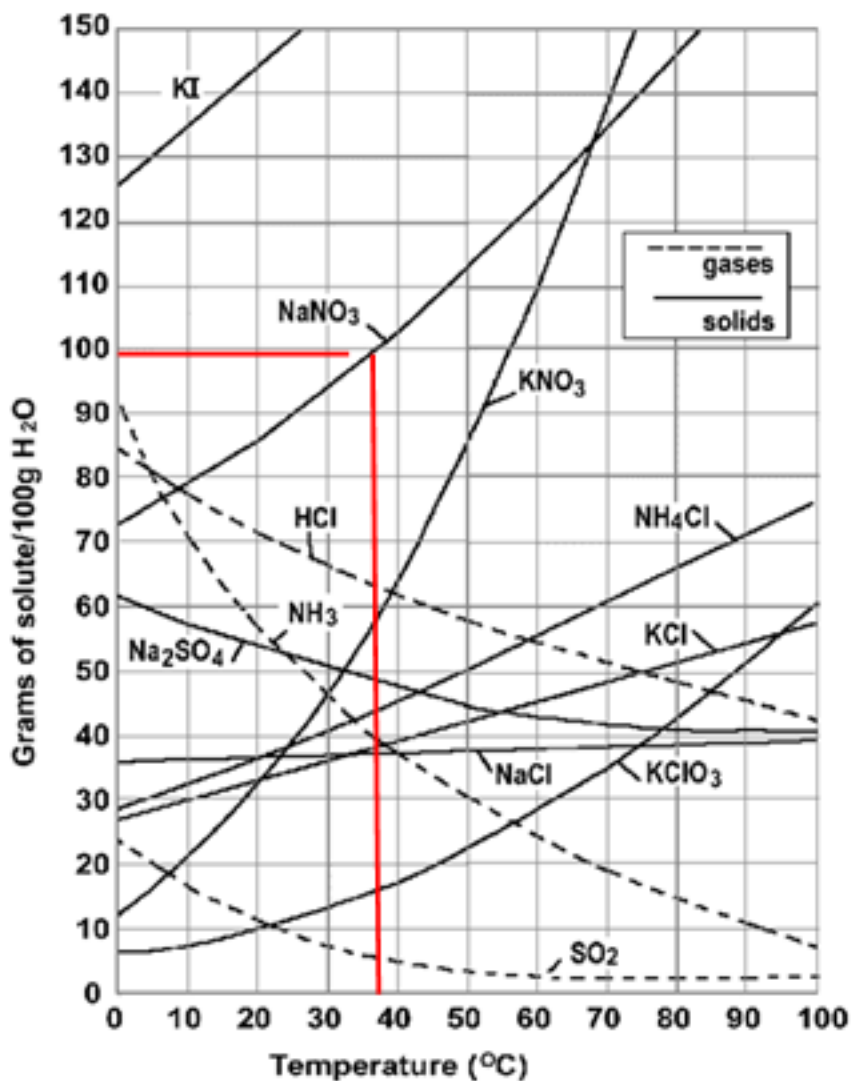
color
Shape
weight
mass
volume

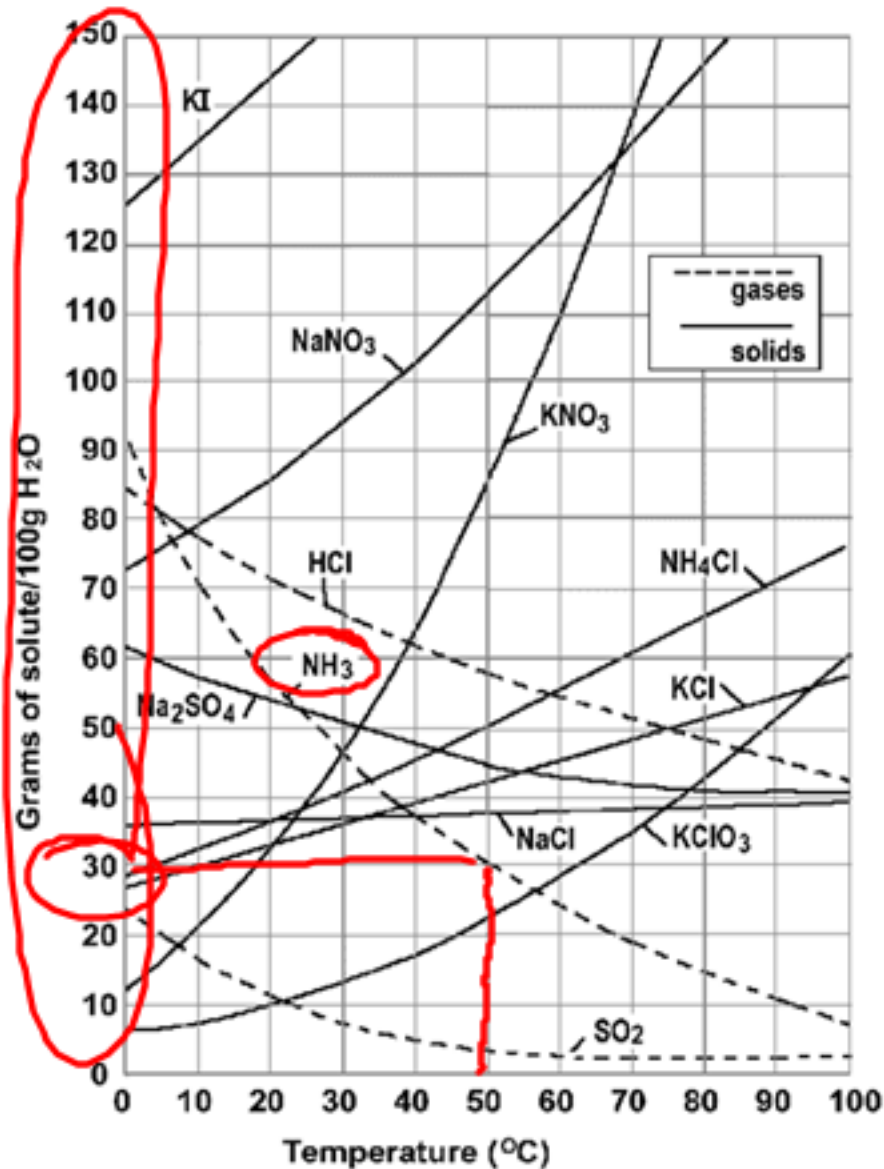
Physical Change vs. Chemical Change



At what temperature will 100 g of NaNO_3 dissolve in 100 g of water?

38°C
or
39°C





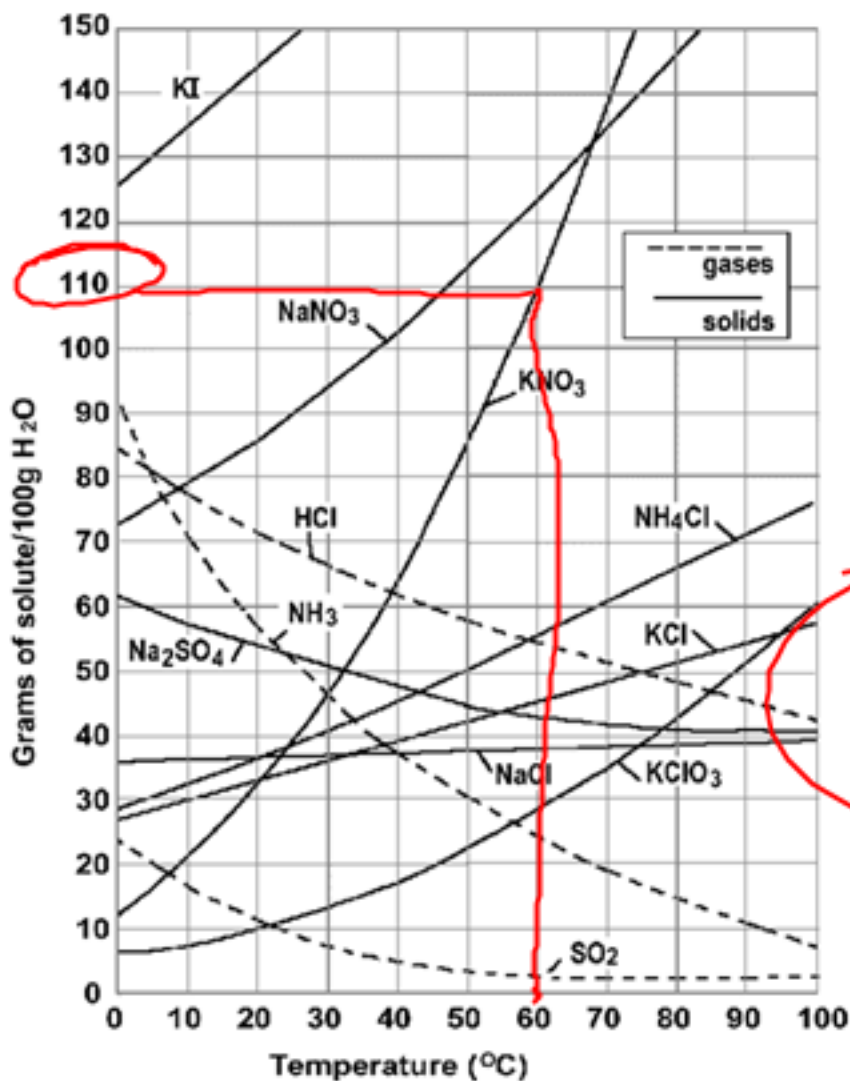
How much NH₃ would dissolve in 100 g of water at 50 degrees Celsius?

30g

How much KNO_3 will dissolve in 250 g of water at 60°C ?

110
 $\times 2.5$

275g

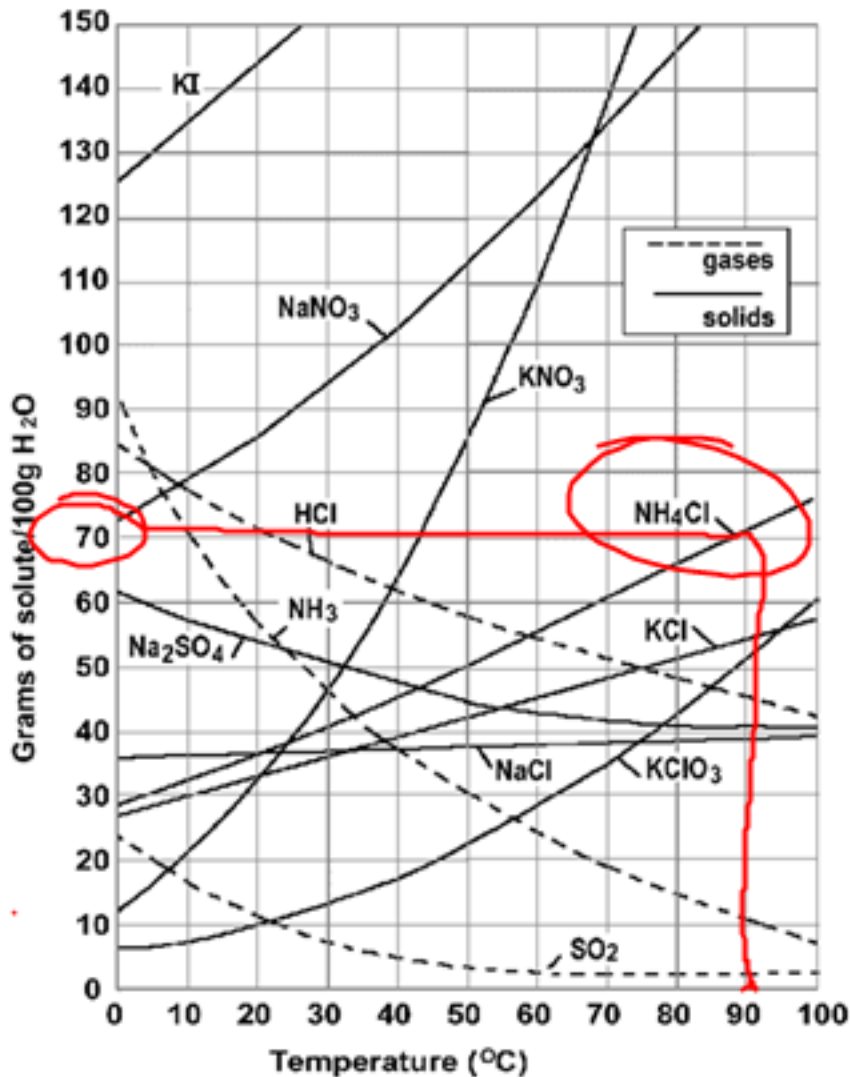


How would you classify a solution of 60 g of NH_4Cl in 100 g of water at 90 degrees Celsius?

Unsaturated

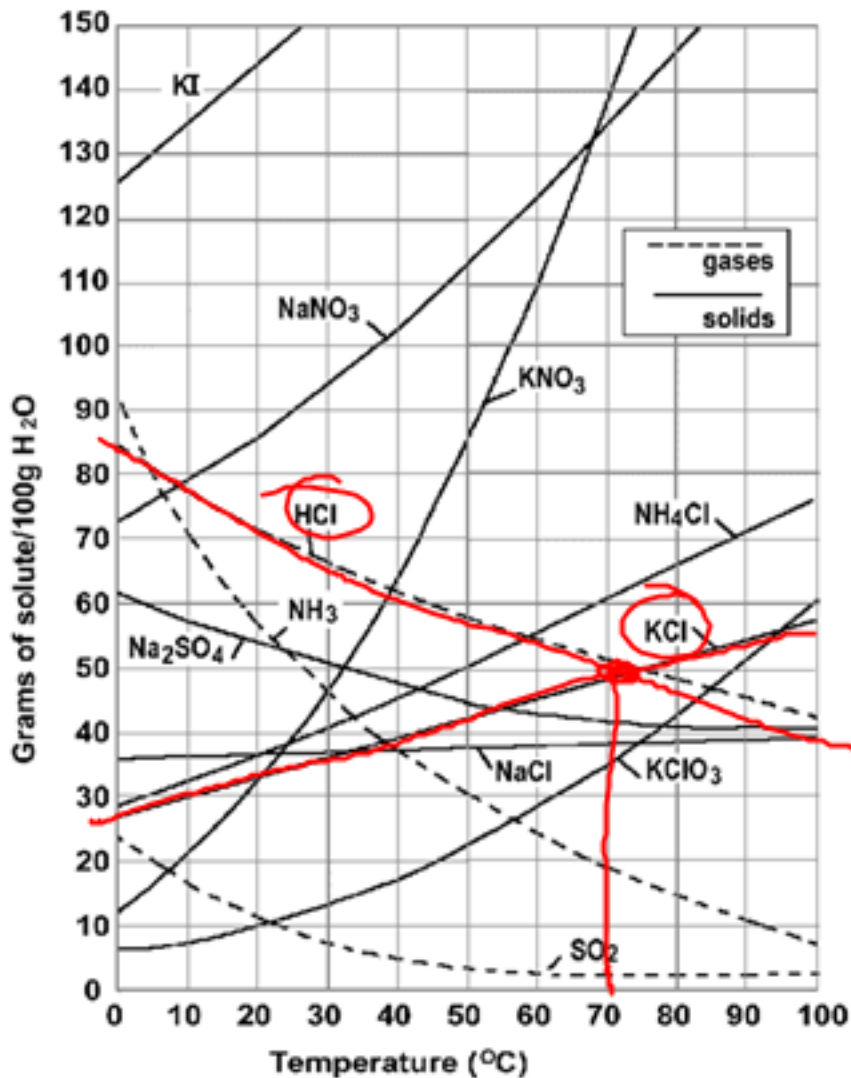
Saturated

Supersaturated

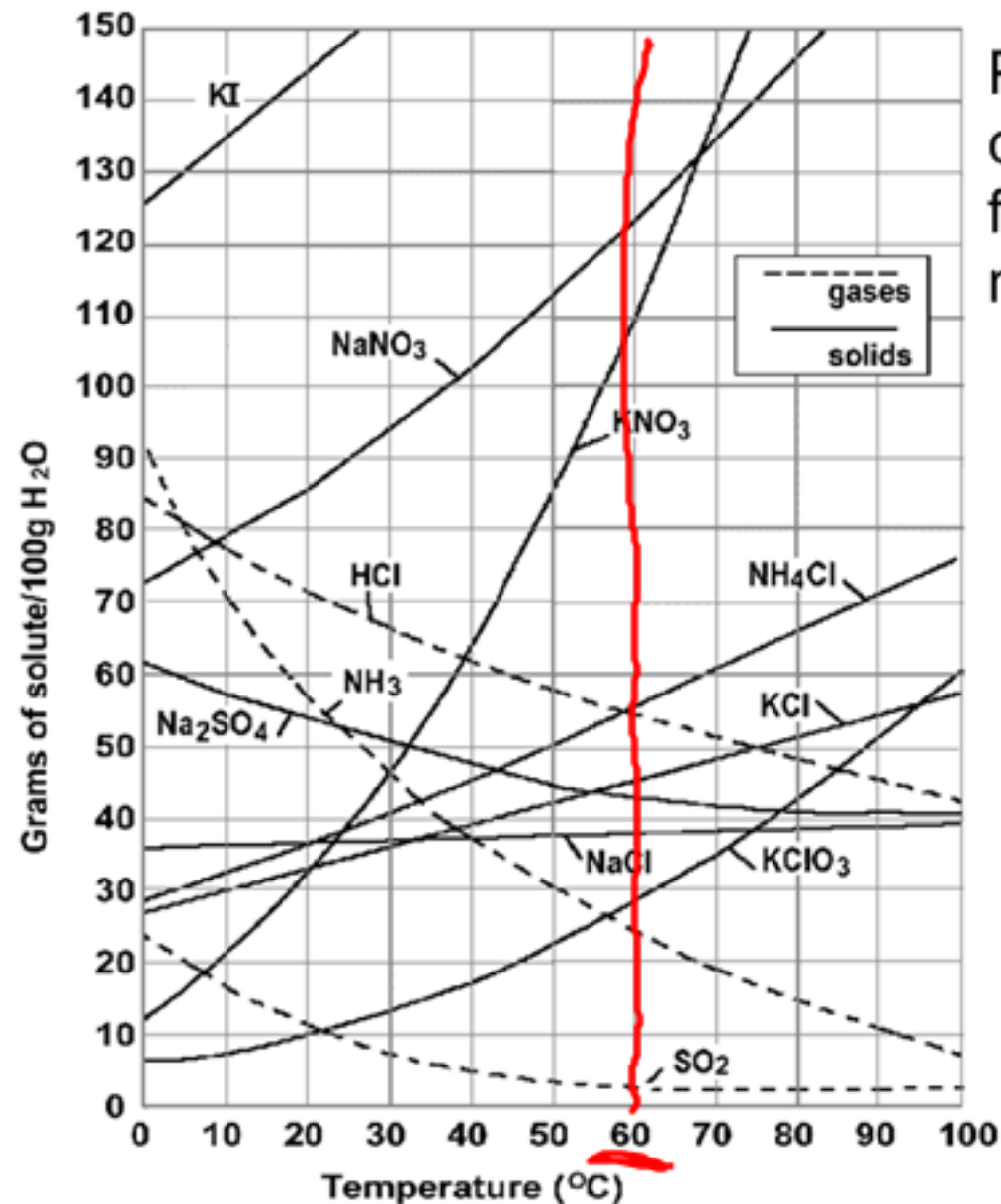


At what temperature will the same amount of KCl and HCl dissolve in 100 g of water?

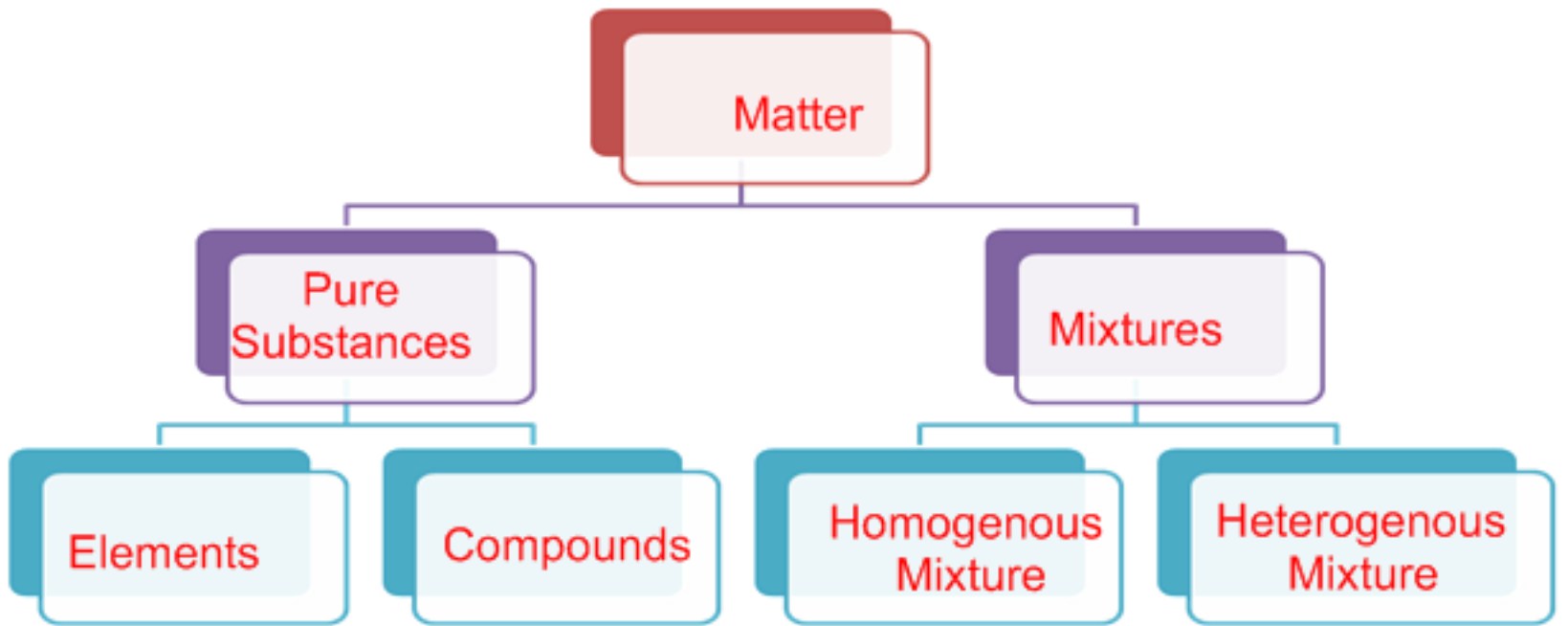
≈ 70°C



Place the following compounds in order from least soluble to most soluble at 60 °C?



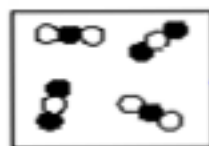
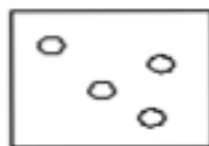
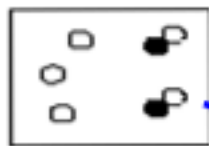
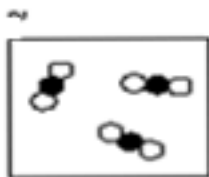
Least
 SO_2
 NaCl
 KCl
 HCl
 NH_4Cl
 KNO_3
 NaNO_3
 Most



Bernoulli's Principle states that as the velocity of a fluid increases, the pressure exerted by that fluid decreases.

Pascal's Law states that the pressure exerted on a fluid is transmitted evenly throughout the fluid.

Archimede's Principle states that the buoyant force exerted on an object is equal to the weight of the fluid displaced by the object.



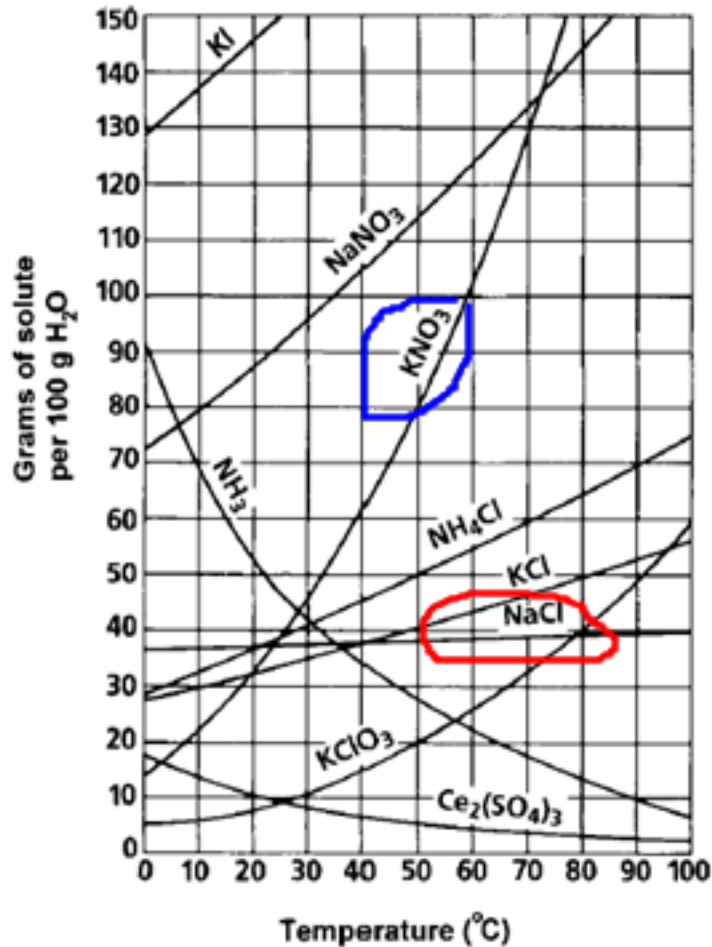
Mixture of 2 compounds

Mixture of 2 elements

Pure compound

Mixture of a compound
and an element

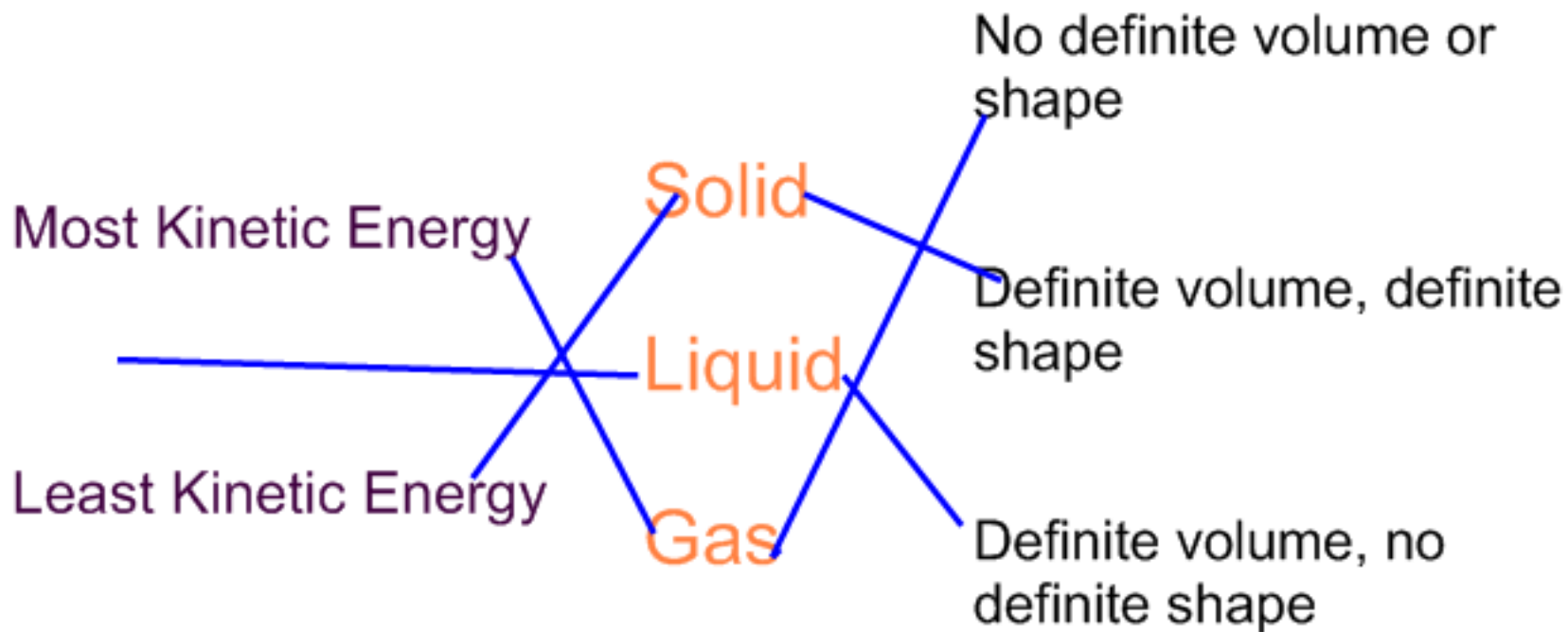
Pure element



1. Circle with a red pen, the substance whose solubility is least affected by temperature.

2. Circle with a blue pen, the substance whose solubility seems most affected by temperature.

Match the 3 states of matter with their descriptions:



Boyle's Law describes the relationship between the pressure and volume of a gas. They have a(n) inverse relationship, which means as one goes up, the other goes down.

Charles' Law describes the relationship between the temperature and volume of a gas. They have a(n) direct relationship, which means as one goes up, the other goes up..



Drag the pictures below to the appropriate column:

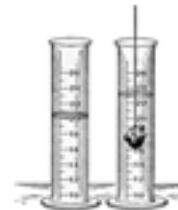
Pascal's Law



Bernoulli's Principle



Archimede's Principle



Label the following as either a physical property(PP), a chemical property(CP), a physical change(PC) or a chemical change(CC):

- PC Boiling of Water
- CP Flammability of a substance
- CC Formation of water when H and O combine
- PC Sharpening a pencil
- PC Drawing copper into a wire
- CC Corrosion of a bicycle frame
- PP Size of an object
- PP Freezing point
- PC Inflating a tire
- PP Fragrance of a flower

Label the following as either Heterogeneous(HET) or Homogeneous(HOMO):

homo tap water

het milk

het smoke

het vegetable soup

het chocolate chip ice cream