

Name _____ Date _____

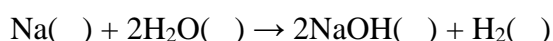
Worksheet 1.1: Elements, compounds, mixtures and kinetic molecular theory

1 Classify each of the following substances as an element, a compound or a mixture:

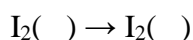
	Element	Compound	Mixture
Coffee			
Tungsten			
Steam			
Crude oil			
Sulfur trioxide			
Bromine			
Air			
Zinc chloride			
Pure ethanol			
Phosphoric acid			

2 Insert the missing state symbols for each of the following processes:

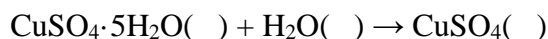
a sodium metal reacting with water to produce a solution of sodium hydroxide and hydrogen gas



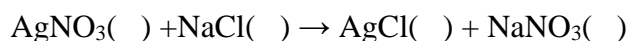
b sublimation of iodine at room temperature



c the dissolving of copper(II) sulfate crystals in water to form a blue solution



d forming silver chloride precipitates by mixing a solution of silver nitrate and a solution of sodium chloride; the other product, sodium nitrate, is soluble in water



- 3 Describe the process of preparing a pot of filtered coffee. Your answers should include the following keywords: soluble, insoluble, filter paper, residue, filtrate, solvation, solute, solvent, solution, dissolve.



- 4 Explain, using kinetic molecular theory, the physical process that is happening in this picture. Your answers should comment on the change in the energy, the arrangement and the movement of the particles.



dry ice

CHEMISTRY FOR THE IB DIPLOMA: WORKSHEET 1.1

- After refluxing, the following procedure is carried out to purify the ester:

is produced.

removing the stopper of the funnel. Remove the lower aqueous layer carefully.

Step 3: Add anhydrous calcium chloride to the remaining liquid in the funnel.

Step 4: The mixture is filtered.

Step 5: Distil the liquid by fractional distillation and the distillate with the boiling point of 79–81°C is collected.

Explain steps 1–5 and how they help to purify the ester.

[illegible]