

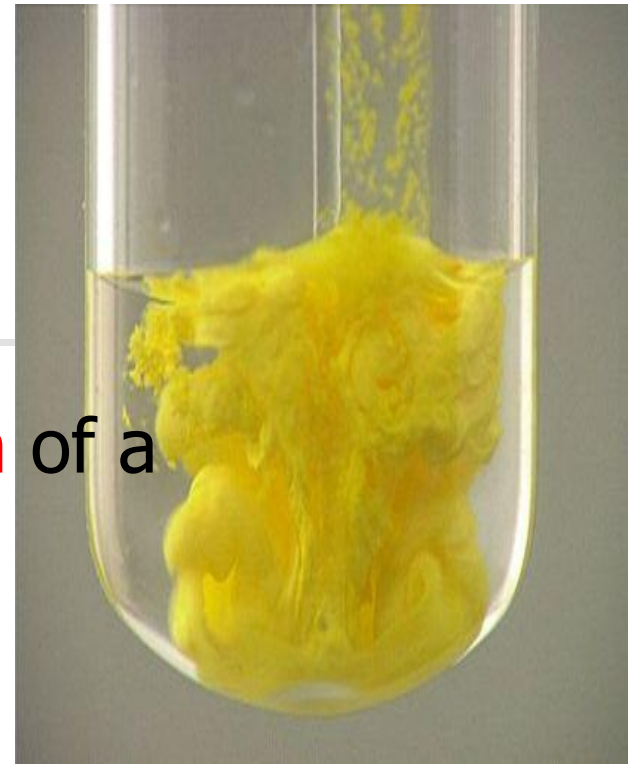


Chemicals and Their Properties

Chapter 5 Chemistry Introduction

Physical Properties

- A **characteristic** or **description** of a substance
- Examples:
 - State of matter: solid, liquid, or gas
 - Malleability: ability to be bent or molded
 - Solubility: sugar in milk vs. sand in water
 - Viscosity: oil/water/molasses/honey
 - Observations based on the five senses: colour, odour, crystal shape, density



What are some physical properties of this?



Colour?

Hardness?

Texture?

Lustre?

Malleability?

Conductivity?

Ductility?

Chemical Properties

Chemical Properties

Observed and measured as sample changes chemical identity



Acidity



Reactivity



Flammability



Toxicity

- Describes **what happens** to a substance as it changes into a **new** substance
- Examples:
 - Reaction of an acid and a base: vinegar & b.s.
 - Flammability: gasoline burns easily
 - Bleaching ability: H_2O_2 breaks down hair pigment
 - Corrosion/oxidation: rust on vehicles (steel)

What are some chemical properties of this?



- Ability to burn
- Ability to decompose
- Ability to react other chemicals

Physical Changes

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Chemical Changes

- Result in a **new substance**
- Generally difficult to reverse
- **Clues** that a chemical change have occurred are:
 - Change of colour
 - Heat or light produced/absorbed
 - Gas is produced (bubbles)
 - Precipitate forms (solid in a liquid)
 - Change/production of an odour

Homework

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“Well, here we go again. ... Did anyone here *not* eat his or her homework on the way to school?”