SAFETY IN THE CHEMISTRY LABORATORY

CHE134 Summer II 2018

Stony Brook University
pH Titration of Your Aspirin Synthesis Product

Here in addition to salicylic acid (SA)
and acetylsalicylic acid (ASA)

we will be using Sodium Hydroxide (NaOH)
a STRONG BASE

as well as Phenolphthalein in an ethanol solution
Globally Harmonized System of (GHS) Classification and Labelling of Chemicals

Two sets of pictograms are included within the GHS:

1) For the labelling of containers and for workplace hazard warnings,

2) For use during the transport of dangerous goods.

They are used as appropriate, but the two types are not used together.
Hazard Warnings are also of TWO types

**Physical** and **Health**

Sometimes the two are combined
PHYSICAL

Explosive

Flammable

Oxidizer
HEALTH

Toxic

Harmful

Corrosive

Respiratory
Sodium Hydroxide NaOH (aqueous solution) – source of base

Hazards:

Eyes: irritation
    possible severe corneal damage

Skin: irritation or burning sensation

First Aid

Eyes: Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. USE EYEWASH FOUNTAIN

Skin: immediately flush skin with large quantities of soap and water for at least 15 minutes.
Phenolthalein (odorless, vaporless solid) – 1 % solution in Ethanol as Indicator used in exercise

Hazards : As solid
Eyes : irritation and possible burns  
Skin : irritation  
Inhalation: may cause respiratory tract irritation  
Flammable: As solution in Ethanol

First Aid

Eyes : Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. USE EYEWASH FOUNTAIN

Skin : immediately flush skin with large quantities of soap and water
Phenolphthalein 1 % solution in Ethanol

Keep away from heat, sparks, open flames, hot surfaces.
Weighing out prescribed amounts accurately is **CRITICAL** to precision and a **GOOD GRADE**

**ERROR** in results comes more from inaccurate weighing (mass) than from titrations
Weighing by Difference is ESSENTIAL

Example

1) Weigh the Vial and its contents

You need to weigh out ≈ 150 mg of a sample

2) Record mass in your notebook
Remove Vial from Balance and Tap out Sample into container
4) **Reweigh Vial**

5) The difference is the mass of sample weighed out

14.7936 - 14.6402 = 0.1534 g = 153.4 mg