LABORATORY OF FOREST PRODUCTS CHEMISTRY
FACULTY OF FORESTRY UNMUL

PROTOCOL 001

STANDARD OPERATING PROCEDURE		
	Type: 10 x dilution	**Date:**
Title: How to Make Phosphate Buffered Saline (PBS) pH 7.4		**Created by: Irawan W. Kusuma**
		File:

1. 1. OBJECTIVE
To provide instructions for making Phosphate Buffered Saline Solution pH 7.4 at 10x dilution.

2. PRINCIPLES
Phosphate Buffered Saline (PBS) is an isotonic solution necessary for chemical and biological experiments.

3. REQUIRED EQUIPMENT
Lab coat, safety glasses, clean cloth/tissue.

3. MATERIALS AND TOOLS

Materials/reagents	**Tool**
Sodium chloride (NaCl)	Reagent bottle
Potassium chloride (KCl)	Magnetic stirrer bar
	500 ml beaker
	500 ml measuring cup

4. PROCEDURE
4.1. EQUIPMENT SETUP
4.1.1 Connect the cable from the shaking temperature bath to the power source;
4.1.2 Fill the shaking temperature bath with clean water up to the fill mark;
4.1.3 Place a spring wire mesh to hold the samples;

4.2. USE OF SHAKING TEMPERATURE BATH
4.2.1 Open the shaking temperature bath instrument cover panel;
4.2.2 Set the bath temperature according to the experimental procedure by adjusting the thermostat button/knob;
4.2.3 Once the desired temperature is reached, place the sample tubes on the wire mesh, ensuring sufficient distance between samples to avoid collisions during shaking;
4.2.4 Adjust the shaking speed by turning the speed control knob to the desired rpm;
4.2.5 Close the shaking temperature bath instrument again using the cover panel;
4.2.6 Periodically check the water level to prevent drying out, especially when using high temperatures;
4.2.7 Add water at an appropriate temperature if the water volume is significantly below the fill line;
4.2.8 Use shaking temperature bath with time according to the experimental procedure;
4.2.9 When the experiment is complete, stop stirring by turning the knob until the rpm is zero;
4.2.10 Open the instrument cover panel and remove the sample from the shaking temperature bath.

4.3. ENDING THE USE OF THE SHAKING WATERBATH
4.3.1 When not in use, turn off the shaking waterbath and unplug the instrument from the power source;
4.3.2 Clean the work area and parts of the shaking waterbath with a damp cloth.

4.4. NOTE
4.4.1 The volume of samples in the tubes being shaken should not exceed the limit to prevent spillage;
4.4.2 When using high temperatures during shaking, always check the water level in the heating bath to avoid drying;
4.4.3 The work area and the shaking water bath must always be kept clean before and after use;
4.4.4 The water in the heating bath must always be clean and changed periodically;
4.4.5 Read the user manual for more detailed information.

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