

OHAUS [Guardian Series Hotplate Stirrers](#), [EX224 Precision Balances](#), and [ST3100 pH Meters](#) aim to optimize lab processes.

Tris buffer solutions are also commonly used in a range of chemical analyses and procedures including DNA extraction. It is important to know that pH in tris buffer solution does change with the temperature of the solution. OHAUS laboratory protocols help outline the necessary steps and show where OHAUS laboratory equipment can be utilized.

Standard Preparation

1. Determine what concentration (molarity) and volume of Tris buffer that your application calls for. Calculate the number of moles of Tris that are required by multiplying the molar concentration of buffer by the volume of the buffer that is being made. (moles of Tris = mol/L x L)
2. Next, determine how many grams of solid Tris this is by multiplying the number of moles by the molecular weight of Tris (121.14 g/mol). Grams of Tris = (moles) x (121.14 g/mol)
3. Weigh the calculated amount of Tris solid using an [OHAUS EX224 Precision Balance](#).
4. Add the Tris into distilled deionized water at a ratio of 1/3 of your desired final volume.
5. Place the solution container on the [OHAUS Guardian 7000 Hotplate Stirrer](#) and enable the SmartRate™ slow speed setting to ensure that there is no splashing during the following steps. Once enabled, a “turtle” icon will appear on the screen. Start the stirring function.
6. While stirring, use a dropper to slowly mix in 1M HCl while periodically utilizing the [OHAUS ST3100 pH Meter](#) to measure the solution’s pH until it reaches the desired value. This will vary based on your application. If splashing of HCL solution occurs, remove gloves, wash hands, and change the In-Use Cover of the hotplate stirrer.
7. Dilute the buffer with distilled deionized water to reach the final volume of solution. Spot check the pH after addition to ensure consistency.
8. Label and store the Tris buffer solution in a sealed container and keep at room temperature until use.

OHAUS Products Used Within This Procedure



[OHAUS EX224
Precision Balances](#)



[OHAUS Guardian 7000
Hotplate Stirrer](#)



[OHAUS ST3100 pH Meter](#)