

Sodium borate buffer for gel electrophoresis

1. General considerations:
 - a. This protocol is about preparing 20X stock solution, i.e. use 50ml each time, then dilute to 1L with distilled water.
 - b. The starting materials are sodium hydroxide and boric acid, final concentration of NaOH is 200mM, final pH is 8.0.
 - c. Sodium hydroxide should use solid every time, can't use old solution!
2. 20 X Sodium borate buffer (200mM NaOH, pH ~8.2)
 - a. Add 8g NaOH (MW=40), 47g boric acid (MW=61.83) to 900ml distilled water, make sure all powders dissolve completely.
 - b. Make final volume to 1L by adding water.
 - c. pH should be around 8.2.

Side Notes:

1. Use magnetic stirrer to mix solution
2. Boric acid does not dissolve well with room temperature water, if solution looks cloudy then **slight heat** may be needed to dissolve boric acid.
Adding NaOH first to water may increase temperature enough to dissolve boric acid.
3. pH solution should be 8.0-8.3