BUFFER PREPARATION

CHEM 251 SDSU

BUFFER PREPARATION

- It is often required to prepare buffers with specific pH values in chemistry.
- In the lab this is done easily by adding a strong acid or base to the desired weak acid or base that is to be the buffer.
- The amount of acid or base that needs to be added to a desired buffer to obtain the target pH can also be calculated using the Henderson-Hasselbach equation.

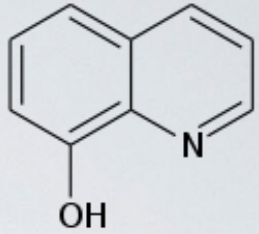
PROBLEM

What volume of either KOH (20 mM) or HNO_3 (18 mM) must be added to a 500 mL solution of 45 mM 8-hydroxyquinoline in order to obtain a buffer with a pH of 9.00?

$$\mathbf{H_2A^+ \rightleftharpoons HA \rightleftharpoons A^-}$$

pKa_1=4.94, pKa_2=9.82

8-hydroxyquinoline



Fully protonated