00_04_10x-PBS-buffer-recipe

MITTWOCH, 4.8.2021

Goal-Setting

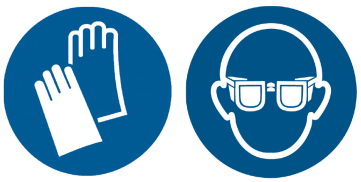
- Preparation of 10x phosphate-buffered saline

Terms / abbreviations

- Na_2HPO_4 x 2 H_2O = Disodium hydrogen phosphate dihydrate
- NaCl = Sodium chloride
- KCl = Potassium chloride
- KH_2PO_4 = Potassium dihydrogen phosphate
- PBS = Phosphate-buffered saline

Risk areas

Hazard symbols



Required materials and / or information

- Chemicals:
  - Di-sodium hydrogen phosphate dihydrate, for analysis, AppliChem
  - MilliQ water, Sartorius arium pro VF
  - Potassium chloride, cell culture grade, AppliChem
  - Potassium dihydrogen phosphate, Carl Roth
  - Sodium chloride, Carl Roth
- Materials:
  - Beaker/ Schottflask
  - Stirring fish

- All chemicals are solid substances

Templates, devices, software

- Analysis balance, Kern ABJ 220-4NM
- pH meter, Knick Digital pH-Meter 646

Preliminary work

- Calculate the needed masses for specific volumina

Operation

- pH meter (ready to use in the chemical room)
  - If it is used for the first time, ask an experienced person around how to use it
  - Regularly calibrate the pH meter according to manufacturer

- User guide:
  - pH meter should measure about 6.5 when the solution is stored (small Falcon Tube)
  - Take it out and unlock it (small switch at the top)
  - Wash it carefully with some MilliQ water
  - Hold into the solution and measure
  - Wash again after use, turn off the switch and put it back into the small Falcon Tube

The following recipe is standardized to 100 mL

1. Weigh the following components into a beaker or schottflask
   - NaCl: 8 g
   - KCl: 0.2 g
   - Na_2HPO_4 x 2 H_2O: 1.8 g
   - KH_2PO_4: 0.245 g
2. Fill up to 100 mL with MilliQ water
3. Mix by stirring/shaking/inverting
4. Optimal pH = 7.4
   a. If pH is too low, adjust with NaOH
   b. If pH is too high, adjust with HCl

Disposal

- Observe all federal, state and local environmental regulations
- Here: Can be discarded in sink with a lot of water

Troubleshooting

- None

Follow-up work

- None