0.3M Sodium Cacodylate Buffer pH 7.4 Stock Solution Recipe

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Protocol status: Working
We use this protocol and it's working

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ABSTRACT

Standard preparation protocol for stock 0.3M sodium cacodylate buffer.

GUIDELINES

Cacodylate acid, sodium salt, trihydrate (MW = 214.03)
Vendor: Ted Pella
Product number: 18851

Calculation:

M (moles/liter) = g/ MW (g/mol) X V (liter)

0.3M = g/214.03 g/moles X 1.0L

g = M x V x MW

g = 0.3 moles/liter X 214.03 g/moles X 1.0 liter

g = **64.209 grams for 1.0 liter**

For 3L = 3 x 64.209 = 192.627 grams

MATERIALS

- Sodium Cacodylate trihydrate salt [TED PELLA, INC. (Catalog no. 18851)]
- Double distlled H_2O (ddH_2O)
- Appropriately sized container
- Concentrated hydrochloric acid

SAFETY WARNINGS

Always wear appropriate PPE. Cacodylate is always toxic.

1 Add 900 ml of DDH2O to 64.209 grams of sodium cacodylate in a large 1.0L or greater container, such as a capped glass bottle. Shake and wait until powder is fully dissolved.

2 Maximum HCL concentration is 12.18mole/liter (36-38%). Start with 1.3mL of 12.18 M HCL per 900 ml of sodium cacodylate dissolved solution. Make sure solution is mixed thoroughly.

3 Check pH. Keep adding 50-100µl of HCL, mix, and check pH again until pH 7.4 has been reached. (Approximately 1.4 ml of conc. HCL total).

4 Top off to 1000ml with DDH_2O.

5 Do a final pH check and keep stock solution refrigerated at 4C.