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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:

$M \text{ (moles/liter)} = g / MW \text{ (g/mol)} \times V \text{ (liter)}$

$0.3M = g / 214.03 \text{ g/moles} \times 1.0L$

$g = M \times V \times MW$

$g = 0.3 \text{ moles/liter} \times 214.03 \text{ g/moles} \times 1.0 \text{ liter}$

$g = \mathbf{64.209 \text{ grams for 1.0 liter}}$

For 3L = $3 \times 64.209 = 192.627 \text{ grams}$

Materials

- Sodium Cacodylate trihydrate salt [TED PELLA, INC. (Catalog no. 18851)]
- Double distilled H₂O (ddH₂O)
- Appropriately sized container
- Concentrated hydrochloric acid

Troubleshooting

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 DDH₂O.
- 5 Do a final pH check and keep stock solution refrigerated at 4C.