

Maleate Buffer Rap

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For anyone who likes to do EM
buffers at times are a hell of a wham
the chemistry lacks in every way
yet we like to have a good display

So what is this all about malle 8?
Does that stuff accommodate uranyl acetate?
at what pH, what ionic strength?
I better ask the LIST for some reference

With some advice here and a helping hand I am sure I can pretend I understand
So I take some stuff from the lab supply Mix it together and hope I will get by

Wow, man, what happens, it's workin' alright!
The negative stain is clear and bright!
No precipitate, the structures they are fine It works! Now I can advice the next in
line.

Anyway, for malle8 to work alright, you see you need two solutions, mark them A
and B Empty bottle (C) in the middle now that should do And mixing left and right
will be the clue

Solution A has sodium hydrogen maleate
23.2 grams if it's trihydrate
Dissolve in 200 ml 1M Sodium Hydroxide
And make to 1 liter with distilled water alright

Solution B is simple
just point 1 Molar NaO-age
Solution C is the trick,
Now don't get into a rage!

Chorus:
Take 25 mls out of bottle A
transfer to Bottle C without further delay Mix in x mls of B, top up to 100 cc Get
approximate pH from the listing you will see

pH x ml 0.1 M NaOH

5.2	7.2
5.4	10.5
5.6	15.3

5.8 20.8
6.0 26.9

For Tris maleate it is much the same
Two stocks again, it's almost lame
The first holds Tris as well as Maleic acid
24.2 and 23.2 grams, yep that's it!

And before I forget,
make a liter of that
now the other stock again is just NaO-age a plain 0.2 Molar is all that it takes

Chorus...

pH x ml 0.2 M NaOH

5.4 5.4
5.6 7.75
5.8 10.25
6.0 13.0

Apologies, the listings don't rhyme.
Disclaimer: I will not be responsible for anyone getting hurt while trying to rap the numbers!

From: "Data for Biochemical research", by Dawson, Elliot, Elliot and Jones
Clarendon Press, Oxford, 3rd ed.

Recipes for maleate buffer (J.Am.Chem.Soc 51 (1929), 1754) and Tris/maleate
buffer (PSEBM 68 (1948) p354 or Meth Enzym. 1 (1955)

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