

Osmium Tetroxide (OsO₄) Solutions

(Greg A. Perry, Ph.D.)

4% Osmium Tetroxide STOCK Solution

Reagents:

1 gm Osmium Tetroxide (Osmic Acid; OsO₄)
24 ml DPBS

Method:

- 1) Clean the outside of the osmium tube very carefully, leaving no residues. Wash with 70%, 95% and 100% alcohol, and then with DPBS.
- 2) Score the glass tube of osmium, but do not break!
- 3) Place osmium tube in a flask (also carefully cleaned) with a glass stopper.
- 4) Add DPBS to the flask.
- 5) Shake the flask violently to break open the tube of osmium.
- 6) Sonicate the mixture in the flask for several hours until all of the osmium has gone into solution. Add ice to the sonicator if the water is getting too hot.
- 7) Freeze at -20°C or -70°C in 3.75 ml aliquots in clean glass containers.

2 Notes of CAUTION: - Osmium is extremely toxic!! Do not inhale, touch or ingest!!
- Any contamination will form a dark precipitate. Use only pale yellow or clear OsO₄ solutions.

1% Osmium Tetroxide WORKING Solution

Reagents:

3.75 ml Osmium Tetroxide Stock
11.25 ml DPBS

Method:

- 1) In a hood, thaw stock solution.
- 2) Add DPBS and divide into 1.5ml aliquots in clean glass containers.
- 3) Freeze at -20°C for future use.

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