

DO'S & DON'TS IN ULTRAS

Source: Seton Scientific

DO'S

- For swinging bucket rotors always fill thin wall tubes to within 2-3mm (1/8") of the top—always! There are no exceptions! If you do not, the tubes will collapse.
- In swinging bucket rotors, load the buckets very carefully, walk to the ultracentrifuge with a loaded rotor very carefully or liquid will spill from the top of the tube inside the bucket. You may not be aware this has happened. The loss of friction and lower liquid level will cause the tubes to collapse.
- Thin wall tubes in fixed-angle rotors must always be used with a cap. There are no exceptions! Tubes must be completely full when using caps.
- Read your rotor manual from the rotor manufacturer.

DON'TS

- Don't use thin wall tubes in fixed-angle rotors without use of the appropriate cap.
- Don't use solvents in even trace amounts with Polyclear or polycarbonate tubes.
- Don't use ultra bottles with fill levels less than half-full.
- Don't use temperatures over 20°C without specific experience that a particular tube material will survive.
- Don't expect ultra bottles to last more than a few runs. The stresses are extremely high and the bottles will eventually fail.
- Don't forget everything you learned in physics. The ultracentrifuge imparts phenomenal stresses to plastic tubes. Sure, the 'fuge looks like washing machine but a 2 gram tube will weigh 2000 lbs at speed and the liquid pressure at the bottom of the tube can be 30,000 psi (>2000bar).