Table 3-1. Filling and Capping Requirements for Tubes and Bottles

Tube or Bottle	Filling Level Requirements		
	Swinging Bucket Rotors	Fixed Angle Rotors	Vertical and Near Vertical Tube Rotors
Polyallomer			
thinwall tubes	within 2–3 mm of top	full with cap	—
thickwall tubes	at least 1/2 full	1/2 full to max capless level or full with cap (Table 3-3)	—
OptiSeal tubes	full and plugged	full and plugged	full and plugged
Quick-Seal tubes	full and heat sealed	full and heat sealed	full and heat sealed
*k*onical Quick-Seal tubes	full and heat sealed	—	—
*k*onical open-top tubes	within 2–3 mm of top	—	—
bottles	—	min to max with screw-on cap or cap assembly (Table 3-3)	—
Ultra-Clear			
open-top tubes	within 2–3 mm of top	full with cap	—
Quick-Seal tubes	—	full and heat sealed	full and heat sealed
Polycarbonate			
thickwall tubes	at least 1/2 full	1/2 full to max capless level or full with cap or cap assembly (Table 3-3)	—
thickwall bottles	—	min to max with screw-on cap or cap assembly (Table 3-3)	—
Stainless Steel			
tubes	any level	any level with cap or cap assembly (Table 3-3)	—
Cellulose Propionate			
tubes	full	1/2 to max capless level; no cap	—
Polypropylene			
tubes and bottles	at least 1/2 full	1/2 to max capless level or full with cap or cap assembly	—
Polyethylene			
tubes	at least 1/2 full	1/2 to max capless level or full with cap	—
Corex/Pyrex			
tubes and bottles	at least 1/2 full	1/2 to max capless	—