

Component Selections for Optimal Dispensing of Epoxies

WHAT

Proper Dispensing Tips

WHY

Selecting the correct syringe (barrel), tip, piston & adapter is crucial for optimal dispensing.



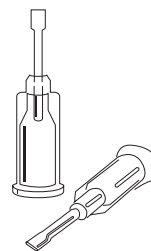
TIP SELECTION (Other than straight-walled needle type)



Tapered tips

Available as small as 27 gauge (200um)

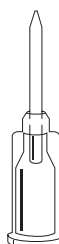
Highly recommended for filled systems as pressures are significantly reduced



Oval tips

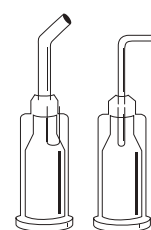
Often used for dispensing ribbons.

Can create uneven flow resulting in air bubbles or voids.



Chamfered tips

Wall thickness of the tip is reduced at the end. Reduces cling of the fluid to the end of the tip for enhanced microdot applications.



Angled tips

Often used to dispense into difficult to reach areas.

Not recommended unless absolutely necessary as longer lengths and bend may reduce flow and require higher pressures which can be problematic for filled systems.

TIP DIAMETER:

Rule of thumb: Dispensed dot size = 2.5 X inner diameter of the tip.

COLOR CODING FOR TIPS SIZES

Color		Gauge	Inner Diameter		Outer Diameter	
			mm	inch	mm	inch
	Olive	14	1.54	.060	1.83	.072
	Amber	15	1.36	.053	1.65	.065
	Grey	16	1.19	.047	n/a	n/a
	Green	18	0.84	.033	1.27	.050
	Pink	20	0.61	.024	0.91	.036
	Purple	21	0.51	.020	0.82	.032
	Blue	22	0.41	.016	0.72	.028
	Orange	23	0.33	.013	0.65	.025
	Red	25	0.25	.010	0.52	.020
	Clear	27	0.20	.008	0.42	.016
	Lavender	30	0.15	.006	0.31	.012
	Yellow	32	0.10	.004	0.24	.009

OTHER CONSIDERATIONS

Pistons:

(Colors may vary with individual manufactures.)



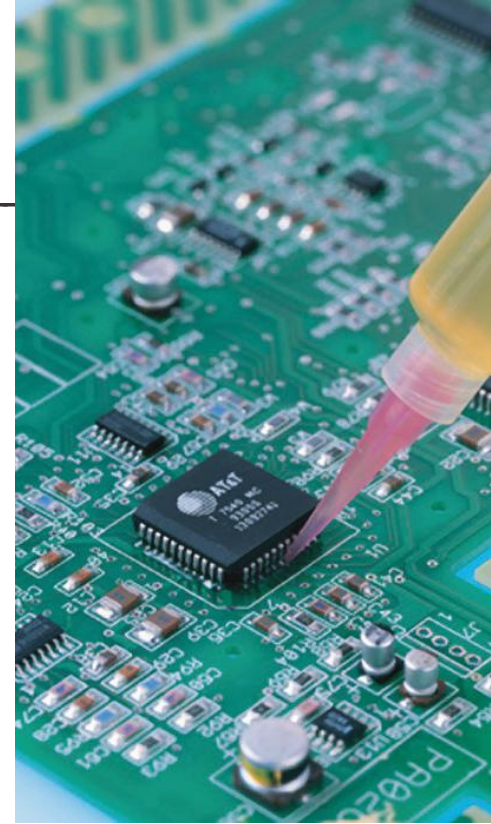
Self wiping (White): good for seeing level of adhesive left in the syringe, but may jam and cause inconsistent pressures



Free floating (Orange): best for consistent pressures. However, may not be possible to see level of remaining fluid in syringe as walls may be coated with residue



Partial wiping (Tan): Good initial piston choice. Useful for many systems.



Fill Level:

Recommended syringe fill level is no more than **two-thirds** full in order to obtain most consistent pressure over the course of the dispense.



Dispenser Adapter: For the most uniform dispensing, all pistons and adapter should be matched to your barrel of choice. Failure to do this will result in improper dispensing.



Dispensing Pressure:

- Use lowest stable pressures possible.
- High pressures (>20psi) can cause packing, agglomerations and excess shear especially in filled systems.

