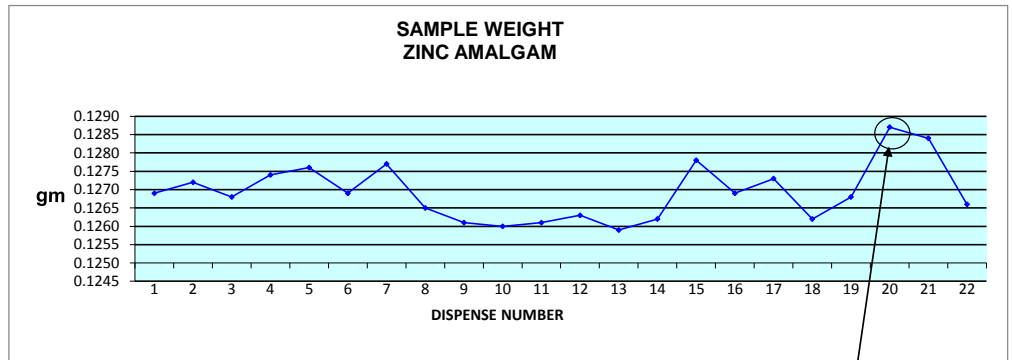


Customer	customer	Contact:		Date	01-Mar-10	Test 1	Weight vial/1cc powder
				Date	01-Mar-10	Test 2	5.9163
Material	Zinc amalgam (Manufacturer unk)	Material condition			Bulk Density (gm/cc)		5.9211
		Patriculate size	Fines*	From Table	Measured	Tap Density	
Desired Sample size	0.127 gm	10 - 200 micron	10 micron <10%	NA	3.8973	3.9021	
Desired accuracy	Std +/-% 1.5	Upper limit .1289	Lower limit .1251	*Fines <10 micron	rh	59%	
Pipette Size	0.125 dia.	Filter cup mesh	10 micron				

	Sample weight	Control unit settings
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Micrometer setting	gm	Vacuum (in hg)	Air (psi)
0.18	Set 0.1269	14	8
	0.1272		
	0.1268		
	0.1274		
	0.1276		
	0.1269		
	0.1277		
	0.1265		
	0.1261		
	0.1260		
	0.1261		
	0.1263		
	0.1259		
	0.1262		
	0.1278		
	0.1269		
	0.1273		
	0.1262		
	0.1268		
	0.1287		
	0.1284		
	0.1266		
	0.1269	Av	
	0.1269	Mean	
	0.0008	Std Dev	
	0.1287	High	Range
	0.1260	Low	
	2.0979	%	

TEST #1



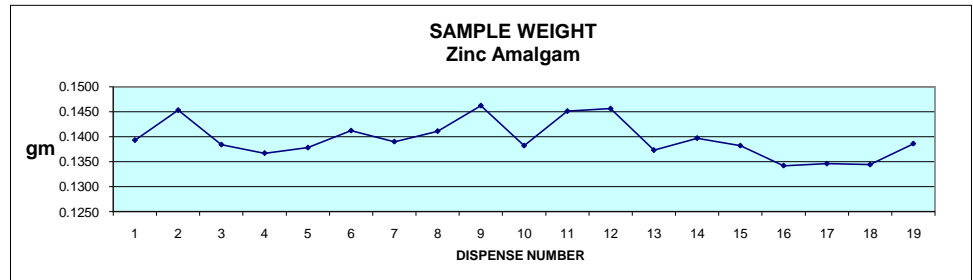
Cycle time	Aspirate	Level	Dispense	total
(sec)	1 - 2	1	1	3 - 4

Increased tap density
Bottomed Pipette in supply cup.

TEST #2

Effect on sample size and repeatability by eliminating tip leveling step to reduce cycle time

Micrometer setting	MG
0.18	Set 0.1380
	(same as test #1)
	0.1393
	0.1453
	0.1384
	0.1367
	0.1378
	0.1412
	0.1390
	0.1411
	0.1462
	0.1382
	0.1451
	0.1456
	0.1373
	0.1397
	0.1382
	0.1342
	0.1346
	0.1344
	0.1386



Cycle time	Aspirate	Level	Dispense	total
(sec)	1	0	1	2

0.1394	Av	
0.1385	Mean	
0.0037	Std Dev	
0.1462	High	Range
0.1373	Low	
6.0876	%	

Notes/observations

Zinc amalgam

- 1a. Zinc powder is easily aspirated and dispensed. No issues dispensing into the customers simulated vials. Used a well plate with .41 dia. opening for dispense test..
- 1b. Set up and calibration are straight forward.
- 1c. Requires relatively low air pressure to eject sample from the pipette, however, increasing the air pressure to 8 psi lowers the dispense time.
- 1d. Careful leveling of the powder using the leveling plate improves repeatability. See Test #2.

2.0 Standard 0.125 dia capsule tip used for testing.

2.a The 10 - 200 micron particle size can be a significant factor dispense sample accuracy if the particles are not distributed uniformly due to entrained air. Sample repeatability can be improved by controlling particle uniformity.

3.0 **Aerosol:** No aerosol or loose zinc particle artifacts were observed during or after dispense into the wells.

4.0 Under normal laboratory conditions, only periodic cleaning, based on usage, would be required as the powder has a small, <1% of fines under 10 micron. Tip/filter cleaning and changeover is <5

Summary: Easy material to pipette, even at the smaller dispense weights.