Hands on basic instructions

Markus Lankers, PhD November 2023 markus.lankers@mibi-c.com







Goal of the Experiments

- Identify important parameters
- •Recognize behavior of different particles
- •It's hard to be an inspector even for half a day







Test Set





- Test set contains 28 vials
- Blanks and rejects
- Every Inspector has to inspect all 28 vials in each experiment
- Patiently wait until the class is ready to move on to the next experiment



Documentation



PARTICLE INSPECTION DATA SHEET #1: Normal Inspection				
Inspector:		Test Set ID:		
Inspection Station:	Illumination Inten	sity:lux		
FULL Illumination Intensity	WITH Agitation	5 Sec/Background		

Vial Number	☑		
Alat Mnuper	mber Reject Accept	Accept	
	-		
		_	
		_	
		_	

- Write down your name on the data sheet
- Write down 3 digit number of the vial and your observation
- Write down Test set number
- Each inspector has to write down the inspection results for the entire set of 28 vials
- Write clearly







Setup of the instrument











Switch on both lamps

Measure light intensity. Mark a position at ~ 3000 Lux

Mark a position at ~ 3000 Lux

















Tools

- Remove cover from sensor
- Select measurement range
 - Just listen to the metronome while inspecting to get the right timing







Inspection Technique



- Pick up vial holding at approximately a 30-degree angle and bring to the black and then the white background to inspect for any heavy particles on the lower portion of the vial bottom.
- Gently swirl to inspect for any fine sediment on the bottom of the vial in both backgrounds.
- Fully invert to fully 'wash' the stopper area, return upright, and swirl the vial in front of the black background looking for particulate matter.
- Fully invert, return upright, and swirl in front of the white background looking for particulate matter.
- Record results on data sheet.



Training



- Two vials of each set (marked with a dot) contain easy to observe particles
- Make yourself familiar with swirling and inverting for a couple of minutes with these vials to practice the particle detection
- Try swirling and inverting











Inspect at marked position



Inspection time 5s black, 5 s white background



Swirl or invert



Record result







Inspect at marked position



Inspection time 10s black, 10s white background



Swirl or invert



Record result













Switch off one lamp

Measure light intensity

Mark a position at ~ 1500 Lux







Inspect at marked position



Inspection time 5s black, 5 s white background



Swirl or invert



Record result







Inspect at marked position



Inspection time 5s black, 5 s white background



No Swirling or inverting



Record result

