Fermilab
ES&H Section

INDUSTRIAL HYGIENE EQUIPMENT CALIBRATION

DRAGER MULTIGAS DETECTOR

10/ 92

OBJECTIVE

T o assure the calibration of the Drager Multigas Detector

EQUIPMENT

- detector tube
- 100 ml burette
- Tygon tubing
- Ring stand and clips
- Soap solution (any liquid soap, diluted just enough to produce bubbles)
- Note paper to record calibration data (With date and your name)
- Calibration sticker

PROCEDURE

1. Perform a leak check on the pump. To do this, seal the pump with an unopened Drager tube and completely compress the bellows. The pump is sufficiently air-tight if the bellows has not expanded completely after 10 minutes (the limit chain is not taut). Consult the ES&H Section of the unit cannot pass the leak test. Record results of leak test.

2. Wet the 100 ml burette with the soap solution and place the burette in an inverted position on the ring stand.

3. Insert an opened detector tube into the Drager pump (note direction of flow). Attach the detector tube to the bottom of the burette with the tygon tubing.

4. Depress the bellows and immerse and release the end of the burette in the soap solution to create a bubble. Make sure that the bubble reaches the top of the inverted burette. If it does not repeat this step until it does.

5. Slightly depress and release the bellows to create a bubble. Adjust the bubble so it rests at the 0 ml mark. This may take some work.

6. Depress and release the bellows. The pump should pull 100ml (+/- 5ml). Record the volume. Allow approximately 4 minutes for the pump to draw the full amount of air. Repeat this procedure three times. Calculate and record the average. Place a calibration sticker on the pump or pump case. If the volume was not in the desired range, the pump must inspected for damage. Consult the ES&H Section.