

DMT Testing Instructions

General Testing Guidelines

1. All operators are expected to complete their testing within reasonable proximity to the assigned time for testing
2. The operator will check off on the master **testing assignment list** when the test has been satisfactorily completed
3. An operator will not begin testing if the previously assigned operator has not completed their testing assignment
4. All reports generated will be three hole punched and inserted into the binder assigned to each instrument
 - a. Each type of test will be separated into sections (i.e. **Linearity Testing**)
5. If an instrument generates an error during a testing sequence, the following documentation must be provided
 - a. Put the original error report in the appropriate section of the binder pertaining to the test that was being attempted (ex. If a pump error occurred during a **Linearity Test**, the original report would be filed in the **Linearity Test** section)
 - b. Reprint a second copy of the error report and file it in the binder in the **Error Reports** section
 - i. The **Error Reports** section is only for instrument generated failures (ex. Pump Error)
 - ii. If the error is due to a concentration out of range or similar problem, **do not** file a second report under the **Error Reports** tab, however a note **does** need to be written in the notebook
 - c. Make a note in the notebook detailing the error
 - d. **All handwritten notes must include date and initials**
6. If solutions seem to be running low / out of specifications, the DMT Lead will be notified and new solution will be used
7. All simulators will be labeled with the lot number of the solution which they contain and the date on which it was added

Accuracy & Precision / Linearity Testing

1. A diagnostic test will be performed prior to running concentrations
2. All 4 concentrations (.02, .08, .16 and .40) will be run on the same day
3. A purge sufficient to clear the simulator tubes of condensation will be performed each time a new simulator is attached
4. The DMT settings will be adjusted to reflect the corresponding simulator concentration each time a new concentration is used
5. Attach the simulator to the tower on the side of the DMT and connect the temperature cable
6. An Accuracy and Precision test (n=10) will be used for each concentration
7. The following user information will be entered
 - a. The Supervisor name entered will be the operators initials
 - b. The correct solution lot
 - c. The correct solution concentration

Interference Testing

1. The interference solution will be tested using the “Mouth Alcohol Test” sequence under the protocols menu (n=6)
2. The following information will be entered
 - a. The nominal solution concentration will be entered into the subject name box (ex. 0.04 MeOH in H₂O or 0.01IPA in 0.08 EtOH)
 - b. Operator initials into the operator name boxes
 - c. In the comments box, the lot number of the solution and the actual concentrations will be entered (ex. 07-12-04A .02 IPA in 0.0443EtOH)
3. The interference solution will be blown through the simulator into the breath tube
4. Detach the simulator from the breath tube between sample to allow for purging

Breath Volume Accuracy Testing

1. Run the Mouth Alcohol Test sequence (n=6)
2. The following information will be entered
 - a. The assigned volume to be tested will be entered into the subject name field (ex. 1.6 Liters)
 - b. Operator initials into the operator name boxes
 - c. **Breath volume accuracy test** will be typed into the comments field
3. Set the syringe to the 1.1L. The bottom of the plunger should be even with the line delineating the appropriate volume.
4. When directed by the DMT, attach the syringe tube to the DMT breath tube and slowly and steadily press the plunger on the syringe to force the air into the DMT.
5. Once all of the air has been forced into the DMT, disconnect the syringe from the breath tube. Reset the syringe to 1.2L and repeat. *for all volumes up to 2.0 at .1L intervals*
6. For volumes less than 1.5L, the DMT should not accept a sample. Continue on to the next volume while still on the same breath sequence. The DMT allow 2 minutes to deliver a complete sample per breath sequence. Detach the syringe tube from the breath tube between breath sequences to allow for purging
7. Repeat until all volumes have been completed. This may take more than one Mouth Alcohol Test sequence (n=6) to get all the breaths. If you use a second sequence, type **Breath vol accuracy test contd** into the comments field

Simulated Mouth Alcohol Testing

1. Run the 0.40 simulator solution on the simulator pump for ~~3~~¹⁰ minutes to prime the tygon tubing.
2. Attach the 0.40 EtOH condensation-filled tygon tubing to the out-port on the 0.08 simulator
3. Insert a mouth piece between the 0.40 EtOH tygon and the breath tube.
4. Using the Mouth Alcohol Tester sequence, blow the simulated mouth alcohol with a body burden through the DMT (n=6)
5. Detach the simulator from the breath tube between samples to allow for purging

6. The following information will be entered

- a. The .08EtOH lot number will be entered in to the first subject name field and “test” will be entered into the last name box
- b. Operator initials into the operator name boxes
- c. In the comments field, the following should be written: **mouth alc: .40 tygon
0.08xx (actual concentration) sim**

Accuracy Precision & Linearity	DMT1	DMT2	DMT3	DMT4	DMT5
0.020	ALB 4/5/07	ALB	ALB	ALB	ALB
0.080	ALB 4/5/07				
0.160	ALB 4/5/07				
0.400	ALB 4/5/07				
0.020	ALB 4/5/07	ALB	ALB	ALB	ALB
0.080	ALB 4/5/07				
0.160	ALB 4/5/07				
0.400	ALB 4/5/07				
0.020	ALB 4/12/07	ALB	ALB	ALB	ALB
0.080	ALB 4/12/07				
0.160	ALB 4/12/07				
0.400	ALB 4/12/07				
0.020	DMR 4/13/07	RJD	RJD	RJD	RJD
0.080	DMR 4/13/07				
0.160	DMR 4/13/07				
0.400	DMR 4/13/07				
0.020	ALB 4/16/07 breath tube	DMR	DMR	DMR	DMR
0.080	ALB 4/16/07 breath tube				
0.160	ALB 4/16/07 breath tube				
0.400	ALB 4/16/07 breath tube				
0.020	RJD 4/16/07	DMR	DMR	DMR	DMR
0.080	RJD 4/16/07				
0.160	RJD 4/16/07				
0.400	RJD 4/16/07				
0.020	SH 4/18/07	SH	SH	SH	SH
0.080	SH 4/18/07				
0.160	SH 4/18/07				
0.400	SH 4/18/07				
0.020	ALB	SH	SH	SH	SH
0.080					
0.160					
0.400					
0.020	SH	SH	SH	SH	SH
0.080					
0.160					
0.400					
0.020	DMR	HXB	HXB	HXB	HXB
0.080					
0.160					
0.400					

Interference	DMT1	DMT2	DMT3	DMT4	DMT5
0.01 Acetone in water	9/20/07 ALB	ALB	RJD	DMR	SH
0.01 Acetone in water	9/24/07 ALB	SH	ALB	ALB	DMR
0.02 Acetone in water	ALB	SH	HXB	ALB	RJD
0.02 Acetone in water	RJD	DMR	SH	SH	ALB
.01 Acetone in .08 EtOH	DMR	ALB	DMR	SH	HXB
.01 Acetone in .08 EtOH	SH	ALB	RJD	DMR	SH
.01 Acetone in .04 EtOH	9/25/07 ALB	HXB	ALB	ALB	DMR
.01 Acetone in .04 EtOH	SH	SH	SH	ALB	RJD
.02 Acetone in .08 EtOH	ALB	DMR	SH	HXB	ALB
.02 Acetone in .08 EtOH	ALB	RJD	DMR	SH	SH
.02 Acetone in .04 EtOH	9/24/07 ALB	ALB	ALB	DMR	SH
.02 Acetone in .04 EtOH	9/24/07 ALB	SH	ALB	RJD	DMR
.04 MeOH in water	DMR	SH	HXB	ALB	ALB
.04 MeOH in water	SH	DMR	SH	SH	ALB
.04 MeOH in .08 EtOH	HXB	ALB	DMR	SH	HXB
.04 MeOH in .08 EtOH	ALB	ALB	RJD	DMR	SH
.04 IPA in water	RJD	HXB	ALB	ALB	DMR
.04 IPA in water	DMR	SH	SH	ALB	RJD
.04 IPA in .08 EtOH	SH	DMR	SH	HXB	ALB
.04 IPA in .08 EtOH	HXB	RJD	DMR	SH	SH
MTBE	ALB	ALB	ALB	DMR	SH
MTBE	ALB	HXB	ALB	RJD	DMR
Toluene	DMR	SH	SH	ALB	ALB
Toluene	SH	DMR	SH	SH	ALB

Mouth Alcohol	DMT1	DMT2	DMT3	DMT4	DMT5
ALB	9/27/06 ALB				
RJD					
DMR					
SH					
HXB					

Temperature Monitoring	DMT1	DMT2	DMT3	DMT4	DMT5
Sample Chamber					
Breath Tube					

Breath Volume	DMT1	DMT2	DMT3	DMT4	DMT5
1.3L	ALB	RJD	DMR	SH	HXB
1.3L	ALB	DMR	SH	SH	ALB
1.4L	DMR	SH	HXB	ALB	RJD
1.4L	SH	SH	ALB	ALB	DMR
1.5L	HXB	ALB	RJD	DMR	SH
1.5L	ALB	ALB	DMR	SH	SH
1.6L	RJD	DMR	SH	HXB	ALB
1.6L	DMR	SH	SH	ALB	ALB
1.7L	SH	HXB	ALB	RJD	DMR
1.7L	SH	ALB	ALB	DMR	SH
1.8L	ALB	RJD	DMR	SH	SH
1.8L	ALB	DMR	SH	HXB	ALB
1.9L	DMR	SH	SH	ALB	RJD
1.9L	SH	HXB	ALB	ALB	DMR
2.0L	SH	ALB	RJD	DMR	SH
2.0L	ALB	ALB	DMR	SH	HXB

Calibration Stability	DMT1	DMT2	DMT3	DMT4	DMT5
Total Power Failure					
Total Power Failure					
Total Power Failure					
Brown Out					
Brown Out					
Brown Out					
Power Spike					
Power Spike					
Power Spike					

RFI Test	DMT1	DMT2	DMT3	DMT4	DMT5
Test 1					
Test 2					
Test 3					
Test 4					
Test 5					

LOD	DMT1	DMT2	DMT3	DMT4	DMT5
low detection					
low detection					
low detection					
low quantification					
low quantification					
low quantification					
high quantification					
high quantification					
high quantification					