

1 Prepare Reagents

1. Remove Malonaldehyde Reagents A, B, Calibrators, Control and Preparation Reagent from the refrigerator and allow them to reach room temperature (18–25°C). This should take approximately 2 hours.
2. Power **ON** the SafTest™ analyzer by pressing the [I] marked portion of the power switch, which is located on the rear panel of the SafTest™ analyzer. Allow 5 minutes to warm up.
3. Preheat the heat block (12.75 mm) to 37–44°C. Use temperature setting **LOW** and dial #4. This is an approximate setting, check with thermometer to verify. Adjust dial (0–10) to correct for the appropriate temperature.

2 Set up the Calibration Curve

NOTE: When you receive a new kit you must first run a calibration curve

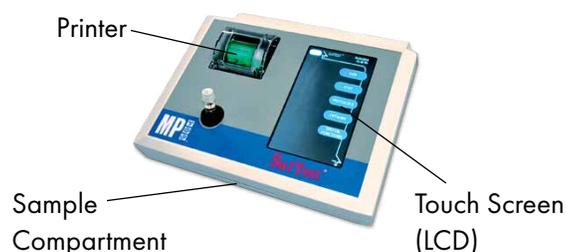
1. Label 5 new 12 mm glass test tubes to correspond to the Calibrator 1, 2, 3, 4 and 5; and one new 12 mm tube for the Control.
2. Mix amber bottles containing the Calibrators and Control to ensure you have a homogenous solution.
3. Use a positive displacement pipette to transfer 400 µL of the Calibrators into the corresponding labeled test tube.
4. Use a positive displacement pipette to transfer 400 µL of the Control into the corresponding labeled test tube.

NOTE: Use a new tip for each Calibrator and Control. The same tip can be used if running a duplicate. Must remove all air bubbles from tip before drawing final sample

3 Add Reagents & Vortex

1. Before dispensing reagents, gently swirl the contents of each reagent bottle.
2. To eliminate air bubbles and oxidized reagent, dispense 4–5 aliquots of each reagent into a waste container immediately before use.
3. Dispense 1 aliquot of Malonaldehyde Reagent A into every calibrator and control test tube.
4. Dispense 1 aliquot of Malonaldehyde Reagent B into every calibrator and control test tube.
5. Once you have aliquoted Malonaldehyde Reagent B into the last test tube start the timer for 20 minutes.
6. Cap the test tubes and vortex them at the fastest dial setting for 30 seconds.
7. Place the test tubes in the heat block at 37–44°C for the remaining time.

NOTE: Once time has ended, **IMMEDIATELY** begin reading your samples. If samples are not read immediately, the tubes must be discarded and test should be rerun



4 SafTest™ Analyzer Set Up with Calibration [RUN]

1. Press [RUN] icon on the touch screen.
2. Press [ALDMSA / Malonald] icon; when highlighted yellow, press [NEXT] icon.



3. At the “Blank Tube” prompt, insert a test tube filled half way with distilled water in the sample compartment. Do not remove tube until prompted or after beep.
4. At the “Cal #_ of 5” prompts, insert Calibrators 1–5 in the sample compartment.
5. Under the Equ. Tab, verify that the equation of the line meets the following initial guidelines and press [NEXT]

NOTE: Please refer to Control Package Insert

6. If any of these guidelines are not met, recalibrate the instrument.

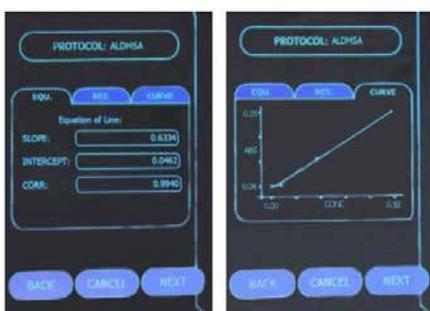


Figure 1.
ALDMSA / Malonald
calibration screen shots

7. At the “DO YOU WANT TO STORE THE CALIBRATORS” prompt, select YES (Figure 2).



Figure 2.
ALDMSA / Malonald store
calibrators screen shot

8. Select the number of replicates to be analyzed (1–5). Use the “+” or “-” arrows to select a number (normally duplicates, i.e. 2 samples should be analyzed to ensure results are accurate and consistent).
9. Press the [NEXT] icon.
10. At the “Smpl #_ Rep #_ Insert Tube” prompt, insert the duplicate Control tubes into the sample compartment.
11. SafTest™ analyzer will continue asking for samples until the user quits the program by pressing [STOP] and then [DONE].

NOTE: The SafTest Analyzer arbitrarily numbers each sample 1–99. Be sure to re-label the sample you are running

12. Verify that the Control falls within the Malonaldehyde Control range, which can be found on the Malonaldehyde Control Package Insert. Your test values for the Control should approximate this range. If it does not, rerun the test.

5 Prepare Samples

1. Samples should be prepared according to **Sample Preparation Quick Card**.
2. Label one new 12 mm glass test tube per sample or two new glass test tubes if preparing duplicates.
3. Read each test tube twice when prompted for a duplicate. When analyzing duplicate samples, ensure each test tube is read a total of two times. A sample, when run in duplicate, should have four total readings (two each for each test tube).
4. Use a positive displacement pipette to transfer 400 μL of each prepared sample into the corresponding labeled test tube.
5. Dispense 1 aliquot of Malonaldehyde Reagent A into every sample test tube.
6. Dispense 1 aliquot of Malonaldehyde Reagent B into every sample test tube.
7. Once you have aliquoted Malonaldehyde Reagent B into the last test tube start the timer for 20 minutes.
8. Cap the test tubes and vortex them at the fastest dial setting for 30 seconds.
9. Place the test tubes in the heat block at 37–44°C for the remaining time.

2. Press [**ALDMSA / Malonald**] icon, when highlighted yellow press [**NEXT**] icon.
3. At the “Blank Tube” prompt, insert a test tube of distilled water in the sample compartment.
4. Select the number of replicates to be analyzed. Use the “+” or “-” arrows to select a number (Normally two replicates should be analyzed to ensure that results are consistent).
5. Press [**NEXT**] icon.
6. At the “Smpl #_ Rep #_, Insert Tube” prompt, insert control or sample tubes in the sample compartment.
7. SafTest™ analyzer will continue asking for samples until the user quits the program by pressing [**STOP**] and then [**DONE**].

7 Calculate Your Results

1. The SafTest™ analyzer will use the Calibrators to calculate the malonaldehyde content as milligram of malonaldehyde per kilogram of sample.
2. Adjust instrument results by taking into account the dilution factor. For example:

Dilution Factor	SafTest™ Results	Dilution x Results	Final Results
1:10	4 mg/kg	10 x 4 mg/kg	40 mg/kg

6 Analyze Samples

1. Press [**STAT**] icon (Figure 3).



Figure 3.
Home Screen Shot

8 Storing Equipment

1. At the end of the day, store the Calibrators, Control, and reagent bottles (with dispensers attached) at 2–8°C.
2. To maximize lamp life, turn **OFF** the SafTest™ analyzer when not in use. Power **OFF** the SafTest™ analyzer by pressing the [O] marked portion of the power switch, which is located on the rear panel of the SafTest™ analyzer.

Troubleshooting

If the sample value is greater than the value of the highest calibrator, the instrument will flag the results as “HI.” The sample must be prepared at a higher dilution and retested; see **Additional Dilutions QuickCard**.

If the sample value is less than the value of the lowest calibrator, the instrument will flag the results as “LO”. Values that are flagged “LO” should be reported as “< value of the lowest calibrator.”

Check the instrument printout for flags or error messages before reporting results. The coefficient of variation (%CV) should be less than 10%. Higher variations will be flagged, in which case you should repeat the test.

EXCEPTION: A large %CV is expected with samples that are measured at the low end of the calibration curve. For such measurements, do not repeat the test.

If the slope, intercept, or correlation coefficient guidelines are not met, recalibrate the instrument.

The range for the Control is found on the Malonaldehyde Control Package Insert. Your test value for the Control should approximate this ranges. If it does not, rerun the test.

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