



How to Measure SO₂ with the Mini Titrator

1 Prepare and Calibrate

- Remove the protective storage cap from the HI3148B ORP electrode and loosen the fill hole screw cap located at the top of the probe.
- Confirm that there is an adequate amount of HI7082 fill solution in the probe. The fill solution should be ½" from the fill cap.
- Place HI7021 ORP test solution in a beaker. While the titrator is in mV mode, the ORP electrode should measure 240 mV +/- 20 mV
- Place the appropriate titrant in the titrant bottle holder. For sulfur dioxide readings between 1 and 40 ppm use the HI84500-50 low range titrant. For readings between 30 and 400 ppm use the HI84500-51 high range titrant.
- Use the titrator prime cycle to prime the burette and tubing with titrant.
- Precisely add HI84500-55 pump calibration solution to a clean 100 mL beaker. Use 1 mL for low range and 10 mL for high range.
- Measure 5 mL of the HI84500-60 acid reagent with the supplied 20 mL beaker. Pour the 5 mL of reagent into the 100 mL beaker.
- Add deionized (DI) water up to the 50 mL mark found on the 100mL beaker.
- Add 1 packet of the HI84500-62 stabilizer (KI) to the 100 mL beaker.
- Press the "CAL" key and collect the small amount of titrant that is dosed to ensure the tip is primed into a waste beaker then press start.
- Place the 100 mL beaker with reagents into the titrator receptacle and add the magnetic stirring bar. Cover the beaker with the electrode holder.
- Rinse the ORP electrode with DI water and place it in the holder. The junction of the electrode should be covered with the sample. Insert the dosing tip tubing through the holder until the dosing tip is 0.1" below the sample surface.
- Press continue and the meter will perform and store the calibration information.

2 Measure

- Select the calibrated measurement range.
- Precisely add 50 mL of wine sample to a clean 100 mL beaker using a calibrated pipette.
- Total SO₂ only:** Add 5 mL of HI84500-61 alkaline reagent to the wine sample. Swirl and cover. Wait 10 minutes.
- Measure 5 mL of the HI84500-60 acid reagent with the supplied 20 mL beaker. Pour the reagent into the 100 mL beaker containing the sample.
- Add 1 packet of the HI84500-62 stabilizer (KI) to the 100 mL beaker.
- Press "titration" and place the holder with dosing tip and electrode over a waste beaker. Press "start." A small amount of titrant is dosed to make sure no air bubbles are in the tip.
- Place the sample beaker into the titrator and add the stir bar. Rinse the ORP electrode with DI water and place the electrode holder with electrode and dosing tip over the beaker.
- Press "continue." The titrator will automatically dose titrant to the equivalence point and the result will be displayed at the end of the titration.

3 Clean and Store

- Remove the tubing from the titrant bottle and place in DI water. Place the electrode holder with dosing tip over a waste beaker. Use the prime cycle to rinse the titrant from the tubing and dosing tip.
- Prime the tubing in air to purge the tubing and valve for dry storage.
- Remove the ORP electrode from the holder and rinse with DI water.
- Make sure the probe is clean. If any stains are present, place it in HI70636 wine stain cleaning solution for 15 minutes.
- Check for any discoloration of the fill solution within the probe. If the solution is discolored from wine/must then empty and replace with fresh HI7082 fill solution.
- Fill the electrode storage cap to 1/4 of the way with HI70300 electrode storage solution. Place the electrode storage cap on the ORP electrode.
- Make sure the refill cap is tightened.

HI84500 Mini Titrator as featured in the "Measuring SO₂ in Wine" ebook