



WINE QUALITY SOLUTIONS

MEASUREMENT OF TOTAL PACKAGE OXYGEN (TPO) AT BOTTLING WITH THE PIERCING SYSTEM

1. REQUIRED MATERIALS

- Piercing System
- NomaSense O₂ P300 or P6000
- Dipping probe with PSf3 sensor
- Temperature sensor
- Optical fiber



2. BOTTLING LINE

- Collect the bottle(s) immediately after corking/capping.

3. MEASUREMENT OF OXYGEN CONTENT IN THE HEADSPACE (HSO)

- Attach the optical fiber and the temperature probe to the NomaSense unit outlet. Handle the fiber and the outlet connections with care.
- Enter the calibration data supplied with the syringe of the piercing device into the NomaSense unit, or scan the corresponding QR code.
- Check settings by reading while syringe is full of atmospheric air (using % oxygen or hPa unit). Correct reading is 20.9 % +/- 1 % or 210 +/- 10 hPa.
- Make sure the needle of the piercing device is unscrewed and fix the piercing device on top of the bottle
- Fix the clamp on the piston to maintain it at the bottom of the syringe.
- Screw the needle through the closure until the hole of the needle is in the headspace of the bottle
- Remove the clamp and sample accurately 2 mL with the syringe. Push the piston back into the syringe and sample again accurately 2 mL.
- Maintain the piston in order to keep the sampled volume constant (the bottle overpressure or depression can make the piston move) and measure the oxygen content in the syringe in hPa and record the value, the temperature and the sampled volume (2mL).
- Measure the size of the headspace (distance between wine and closure) in mm.





4. MEASUREMENT OF DISSOLVED OXYGEN (DO)

- a. Attach the dipping probe to the NomaSense unit outlet. Handle the probe and the outlet connection area with care.
- b. Enter the calibration data supplied with the probe into the NomaSense unit, or scan the corresponding QR code.
- c. Check settings by reading while probe is in atmospheric air (using % oxygen or hPa unit). Correct reading is 20.9 % +/- 1 % or 210 +/- 10 hPa.
- d. Open the bottle and immerse the dipping probe and the temperature probe into the wine
- e. Stir the dipping probe in the wine to get faster stabilization (this can take several seconds)
- f. Once the reading on the display is stable, read the oxygen content of the sample.

5. REMOVE THE DIPPING PROBE AND CLEAN IT IN WATER. PUT THE PROTECTIVE CAP BACK ONTO THE SENSOR TIP. CALCULATE THE TOTAL PACKAGE OXYGEN IN THE BOTTLE (TPO = HSO + DO)

- Use the provided Excel spread sheet to enter your data

Bottle volume (L)	Measurement in the syringe (hPa)	Sampled volume (mL)	Temperature (°C)	HS size (mm)	HSO (mg/L)	DO (mg/L)	TPO (mg/L)
0,75	75	2	15,4	19	1,15	0,37	1,52

FOR MORE INFORMATION: winequalitysolutions@vinventions.com