

Dissolved Oxygen in Wine

Dissolved Oxygen (DO) is a term commonly used for the measurement of the amount of free molecular oxygen (O₂) dissolved in a unit volume of a solution usually expressed in milligrams per liter (mg/L), parts per million (ppm), or percent saturation.

Why measure for Dissolved Oxygen in wine? There are several stages where it is important to measure for Dissolved Oxygen:

1. Test for the level of oxygen during racking and tank movements. Whether its reduced or alternatively oxidized, the taste of wine can be dramatically effected by oxygen.
2. Test for oxygen pickup during pad, DE, and crossflow filtrations. DO monitoring insures consistent process control and operation of equipment.
3. Monitor micro O₂ treatment during maturation process. Plotting the dissolved oxygen present during treatment aids in timely and effective micro O₂ implementations.
4. Test the tank for the amount of oxygen after processing and before bottling. The concentration of molecular oxygen should be measured in the wine before bottling and should be less than 0.5 mg/L. If the concentration of oxygen is greater than 0.5 mg/L, it can generally be lowered by sparging with nitrogen gas (see Zoecklein et al., 1995).
5. Test oxygen in bottled wine – During bottling, oxygen must be monitored regularly to insure minimal impact on wine quality during final filtration and filler/corker operations.

HI9143W Dissolved Oxygen meter can measure DO in bottled wine as well as in the storage tanks. This meter has automatic compensation capabilities for effects such as temperature, altitude, humidity and salinity. These conditions can all impact the accuracy of your reading and must be accounted for. This meter also comes with a probe that allows for bottle testing.

HI9142W is an easy to use and accurate dissolved oxygen meter. It comes with a specific DO probe that will allow the user to conduct measurements inside the bottled wine.



The HI 9142W and HI 9143W can be calibrated with no chemical solutions



Ideal for
Spot Checks

SPECIFICATIONS	HI 9143W	HI 9142W
Range	O ₂ : 0.00 to 45.00 mg/L; % Saturation O ₂ : 0.0 to 300.0%; °C: 0.0 to 50.0°C	0.0 to 19.9 mg/L
Resolution	O ₂ : 0.01 mg/L; % Saturation O ₂ : 0.1% F.S.; Temperature: 0.1°C	0.1 mg/L
Accuracy (@20°C/68°F)	O ₂ : ±1.5% F.S.; % Saturation O ₂ : 1.5% F.S.; Temperature: ±0.5°C	±1.5% F.S.
Calibration	Automatic, in air, at 100%	Manual, 1 or 2 points (zero and slope)
Temp. Compensation	Automatic, 0 to 50°C (32°F to 122°F)	Automatic, 0 to 30°C
Altitude Compensation	0 to 1900 m, 100 m (328') resolution	—
Salinity Compensation	0 to 40 g/L, 1 g/L resolution	—
Probe	HI 76408 wine spot check probe with 1 m (3.3') cable (included)	
Battery Type/Life	(4) 1.5V AA/approx. 200 hours of continuous use; auto-off after 4 hours of non-use/12 VDC power adapter	(4) 1.5V AA/approx. 500 hours of continuous use
Environment	0 to 50°C (32 to 122°F); 100% max RH	
Dimensions/Weight	196 x 80 x 60 mm (7.7 x 3.1 x 2.4")/500 g (1.1 lb.)	

ORDERING INFORMATION

HI 9143W is supplied with HI 76408 wine spot check D.O. probe with 1 m (3.3') cable, 2 spare membranes, HI 7041S electrolyte solution (30 mL), batteries, rugged carrying case and instructions

HI 9142W is supplied with HI 76408 wine spot check D.O. probe with 1 m (3.3') cable, 2 spare membranes, HI 7041S electrolyte solution (30 mL), batteries, calibration screwdriver, rugged carrying case and instructions

ACCESSORIES

- HI 76408** Spot check D.O. probe for wine with 1 m (3.3') cable
- HI 7040L** Zero oxygen solution (500 mL)
- HI 7041S** Refilling electrolyte solution (30 mL)
- HI 76407A/P** Replacement membrane (5)