HI 83749

Photometer

for Turbidity and Bentonite Monitoring

Turbidity, Bentonite and HI 83749

The prevention of protein haze or deposit in bottled white wines is a universal concern and often a wine needs to be stabilized before bottling. One commonly used stabilization agent is bentonite. Bentonite is a volcanic clay earth type filling agent (like kaolin). It improves the clarity and stability of wine but also has negative aspects because of the volume of lees formed, reduction of tannin and color. Since there are different types and qualities of bentonite with different capacity of protein removal, it is important to make laboratory trials with the same lot and wetting degree of the bentonite as that will be used in the cellar.

Protein stabilization is normally not a problem in bottled red wines because of the relatively high concentration of phenols that bind with and precipitate the instable proteins before bottling. Often bentonite is added to red wines at a level of about 12 g/hL (1lb/1000 gal), reducing colloidal suspended particles thus improving membrane filterability.

Wines with low phenol contents, such as rosé, light reds and whites should be checked for protein stability before bottling. HANNA is offering a rapid test to verify the risk of future protein haze formation. If protein instability is detected, a subsequent test can help define the right amount of bentonite to be added for improving protein stability. It is important not to overdose bentonite to avoid stripping wine flavor, body, and significant loss of color, especially in young red wines. Moreover, adding only the necessary amount of bentonite to obtain the desired protein stability also saves costs.

The meter measures turbidity of samples from 0.00 to 1200 NTU (Nephelometric Turbidity Units) and is USEPA compliant. In the USEPA measurement mode the instrument rounds the readings to meet USEPA reporting requirements. It has a continuous measurement mode to verify the settling rate of suspended matter, and a signal average (AVG) mode to accumulate multiple readings giving a final average value. The AVG routine is particularly useful to measure samples with suspended particles with different dimensions.

The meter has all necessary GLP (Good Laboratory Practice) functions to allow maximum traceability of data like a real time clock, log-on-demand (up to 200 measurements), and T.I.S. -Tag Identification System to give all recorded data a location, time and date stamp.

The HI 83749 has a user-friendly interface, with a large backlit LCD (Liquid Crystal Display). Acoustic signals and displayed codes to guide the user step by step through routine operations.

SPECIFICATIONS — *HI 83749 Turbidity and Bentonite Photometer*

Range	0.00 to 9.99 NTU; 10.0 to 99.9 NTU; 100 to 1200 NTU Automatic range selection
Resolution	0.01 NTU from 0.00 to 9.99 NTU; 0.1 NTU from 10.0 to 99.9 NTU; 1 NTU from 100 to 1200 NTU
Accuracy	±2% of reading plus 0.05 NTU
Repeatability	±1% of reading plus 0.05 NTU
Stray Light	< 0.05 NTU
Light Source	Tungsten filament lamp
Light Detector	Silicon photocell
Method	Ratio Nephelometric
Display	60 x 90 mm backlit LCD
Calibration	2, 3 or 4 points
LOG Memory	200 records
Serial Interface	RS 232 or USB 1.1
Environment	0 to 50°C; max 95% RH non-condensing
Battery Type	(4) 1.5V AA batteries/12 VDC adapter
Auto Shut-off	After 15 minutes of non-use
Dimensions	224 x 87 x 77 mm (8.7 x 3.3 x 3.1")
Weight	512 g (17.6 oz.)

ORDERING INFORMATION

HI 83749-01 (115V) and **HI 83749-02** (230V) is supplied with sample cuvets and caps (6), calibration cuvets (HI 83749-11) (4), bentocheck reagent (HI 83749-0) and silicone oil (HI 93703-58), 1000 µL automatic pipette with two tips and instructions sheet, 25 mL glass vials with caps (4), 1 mL syringe with two tips, funnel, filter paper (25), tag holders with tags (HI 920005) (5), cuvet cleaning cloth, 1.5V AA batteries (4), 12 VDC adapter and instruction manual in a rugged carrying case.

ACCESSORIES

HI 83749-20	Bentocheck (100 mL)
HI 93703-58	Silicone oil (15 mL)
HI 83749-11	Calibration cuvets kit
HI 731331	Glass cuvets (4)
HI 731335N	Caps for cuvets (4)
HI 93703-50	Cuvet cleaning solution (250 mL)
HI 731318	Cuvet cleaning cloth (4)
HI 740220	25 mL glass vial with cap (2)
HI 731341	Automatic pipette 1000 µL
HI 731351	Tips fo automatic pipette 1000 µL (25)
HI 740233	Filter paper type II (100)
HI 740142P	1 mL graduated syringe (10)
HI 740144P	Tips for 1 mL syringe (10)
HI 740234	Replacement lamp for EPA turbidimeter (1)
HI 92000	Windows® compatible software
HI 920011	RS232 connection cable
HI 920005	iButton tag holders with tags (5)
HI 740027P	1.5V AA battery (12)