



HI 84102 mini Titrator

FOR THE DETERMINATION OF TITRATABLE
TOTAL ACIDITY FOR WINE ANALYSIS



Why Total Acidity is important...

Acids occur naturally during the growing of grapes and as a part of the fermentation process. Wines show lower levels of acid when there are hot growing seasons or when the grapes come from hotter regions. In the proper proportion, acids are a desirable trait and give the wine character.

The three predominant acids in wine are tartaric, malic and citric—all of which are intrinsic to the grape. Tartaric acid is the principal acid in grapes and is a component that promotes a crisp flavor and graceful aging in wine. A moderate amount of a wine's acid comes from malic acid (which contributes to fruitiness) and a small amount of acid comes from citric acid. Wine also contains trace amounts of other acids. The least desirable acid in wine is acetic acid, which, when present in more than a nominal amount, gives wine a sour or vinegary aspect.

Total acidity (also called titratable acidity) is the sum of the fixed and volatile acids. In the United States, the total acidity is usually expressed in terms of tartaric acid, even though other acids are measured.

Total acidity directly effects the color and flavor of wine and, depending on the style of wine, is sought in a perfect balance of sweet and bitter sensations of other components. Too much acidity makes wine tart and sharp; too little makes wines flat, flabby and uninteresting. Proper acidity in wine is what makes it refreshing and an ideal accompaniment to food.

The proper acid level of a wine varies, with sweeter wines generally requiring somewhat higher levels to retain the proper balance. For dry table wine, the acceptable range is usually 0.60 to 0.75%; for sweet wine it is 0.70 to 0.85%.



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- Titrator, magnetic stirrer, electrode holder & reagent holder in one compact unit
- Results in minutes
- Simple to operate

Titrateable Total Acidity

The HI 84102 is a low cost, easy to use, microprocessor-based automatic titrator that benefits from HANNA's years of experience as a manufacturer of analytical instruments.

The HI 84102 has a simple and yet accurate peristaltic pump to ensure the best accuracy and repeatability. By performing pump calibration with the provided HANNA standards-instrument accuracy is assured.

This instrument is supplied with a pre-programmed analysis method designed for Total Titratable Acidity measurements in wine.

The HI 84102 performs automatic analysis, all necessary calculations and assures to the user a simple and effective interface.

The instrument features a powerful and effective built-in algorithm to analyze the shape of the pH electrode response and to determine the reaction completion.



1. Peristaltic Pump and Tube Set
2. pH Electrode
3. Temperature Probe
4. Electrode/Probe Holder
5. mini Stirrer
6. Touch Keypad
7. 1 mL Plastic Syringe
8. 2000 μ L Automatic Pipette
9. Wine Deposit Solution Sachets
10. Wine Stain Solution Sachets



- Stability Indicator
- Calibration Messages
- Secondary Display
- Automatic Temperature Compensation

Pre-programmed
Total Titratable
Acidity analysis
method for wine
samples included!



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|-------------------------------------|-------------------------------------|
| 11. Titrant Solution | 14. pH 8.20 Buffer Solutions |
| 12. Standard Solution | 15. Large LCD Display |
| 13. pH 7.00 Buffer Solutions | 16. Titrant Holder |

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Ordering Information

HI 84102 is supplied complete with reagent set for 20 titrations, 2000 μ L automatic pipette, (2) plastic tips for 2000 μ L automatic pipette, (2) 50 mL beakers, tube set with cap, pH electrode, temperature probe, stir bar, power cable, 30 mL bottle of refill solution, 1 mL syringe, (2) wine deposits cleaning solution sachets, (2) wine stain cleaning solution sachets and instruction manual.



Specifications	HI 84102 mini Titrator
Range	0.0 to 25.0 g/L of tartaric acid
Resolution	0.1 g/L
Accuracy	5% of reading
Method	Acid-base titration method
Principle	End-point titration
pH calibration	1 point in selected end-point: 7.00 pH or 8.20 pH
Sample Volume	2 mL
Temperature Compensation	Automatic from 0.0 to 100.0°C
pH electrode	HI 1048B (included)
Temperature Probe	HI 7662-T (included)
Pump Debit	0.5 mL/min
Stirring Speed	1500 rpm
Environment	0 to 50°C (32 to 122°F); max 95% RH non-condensing
Power Supply	220V/50 Hz; 10VA
Dimensions	208 x 214 x 163 mm (8.2 x 8.4 x 6.4") (with beaker)
Weight	2200 g (77.6 oz.)

Recommended Accessories

HI 70300L	Electrode storage solution (500 mL)	HI 731342	Automatic pipette 2000 μ L
HI 70635	Cleaning solution for wine deposits (500 mL)	HI 731352	Tips for 2000 μ L automatic pipette (4 pcs.)
HI 70636	Cleaning solution for wine stains (500 mL)	HI 740036P	Beaker 50 mL (10 pcs.)
HI 7082	Electrode filling solution (4 x 30 mL)	HI 740198	Power cable
HI 84102-50	Titration solution (110 mL)	HI 7662-T	Temperature probe
HI 84102-55	Calibration standard (100 mL)		
HI 84102-60	Buffer solution 1, pH 7.00 (500 mL)		
HI 84102-61	Buffer solution 2, pH 8.20 (500 mL)		
HI 1048B	pH probe with shorter cable		
HI 70483T	Tube set with cap for titrant bottle and tip		
HI 731316	Stir bar (5 pcs)		

Authorized Distributor

2 year
LIMITED WARRANTY



HANNA[®]
instruments

With Great Products, Come Great Results™

Also Available from **HANNA**

SULFUR DIOXIDE mini Titrator

HI 84100 for the Determination of Sulfur Dioxide in Wine



TARTARIC ACID Photometer

HI 83748 for the Determination of Tartaric Acid in Wine



TOTAL PHENOLS & COLOR Photometer

HI 83742 for the Determination of Total Phenols & Color in Wine



COPPER Photometer

HI 83740 for the Determination of Copper in Wine



IRON Photometer

HI 83741 for the Determination of Iron in Wine



pH & TEMPERATURE Bench & Portable Meters

HI 222 & HI 9026W pH & Temperature in Wine



Contact your local **HANNA** instruments® distributor for more information.