

## Iron Concentration and Casse

HANNA HI 83741 measures the iron concentrations of both white and red wines. HI 83741 makes it possible to quickly and easily determine the state of your wine, and to act on it in case it may be necessary.

## Significance of Use

Trace iron concentrations in wine are beneficial for enzyme activity, as a stabilizer, and as a functional component for proteins.

At higher concentrations it alters the redox potential, in favoring oxidation, affecting sensory characteristics and participating in the formation of complexes with tannin and phosphates resulting in instabilities (casse). The most common iron case is "white casse" (iron phosphate), it is initially seen as milky white cloud and later as a precipitate. The "blue casse" (ferric tannate) that occurs less often can be observed in white wines, for example, after tannic acid additions.

Most of the iron present in wine is present in the ferrous Fe(II) state. The ratio of the Fe(II)/Fe(III) depends on the oxidation state of wine. If Fe (III) is formed, it can bind with phosphates that are normally present in wine.

Since iron strongly binds with several organic acids, some wine makers add citric acid to the wine to complex free iron in wine is contact with iron in wine is contact with iron containing alloys during processing. During fermentation a part of the iron is absorbed by yeast and thus removed from the wine during filtration.

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**Wine containing less than 8 mg/L of iron:** there is no risk of casse

**Wine containing more than 8 mg/L of iron:** it is necessary to check the stability since there may be the possibility for casse to occur

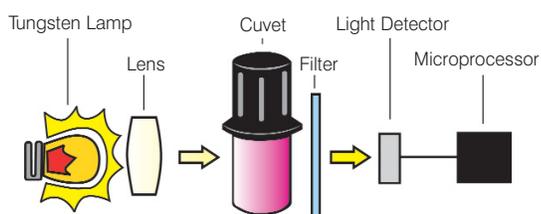
**Wine containing 8 to 15 mg/L of iron:** wine is subject to casse and needs treatment with  $\text{SO}_2$ , citric acid or ascorbic acid

**Wine containing over 15 mg/L of iron:** wine is highly subject to casse and needs treatment with potassium ferricyanide.

HANNA's HI 83741 is an invaluable instrument for monitoring this crucial parameter in the process of wine making. With a few simple steps wine makers can quickly and accurately measure iron content in wine directly in mg/L.

## Optical system of HANNA wine photometers

HANNA wine photometers use a tungsten light source and narrow band filter



## SPECIFICATIONS

### HI 83741 Iron Photometer

Range	0.0 to 15.0 mg/L
Resolution	0.1 mg/L
Precision	SD $\pm$ 0.4 mg/L @ 4.0 mg/L
Light Source	Tungsten lamp with narrow band interference filter @ 560 nm
Sensor	Silicon photocell
Method	The reaction between iron and the reagents causes a purple tint in the sample
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	225 x 85 x 80 mm (8.7 x 3.3 x 3.1")
Weight	500 g (17.6 oz.)

## ORDERING INFORMATION

**HI 83741-01** (115V) and **HI 83741-02** (230V) is supplied with sample cuvettes and caps (2), reagents for 5 tests (HI 83741A-O, HI 83741B-O, HI 83742-O), scissors, 1000  $\mu$ L automatic pipette with Instruction Sheet, plastic tips for 1000  $\mu$ L automatic pipette (2), 1 mL plastic pipette (1), 12 VDC adapter, 1.5V AA batteries (4), cuvet cleaning cloth and instruction manual in a rugged carrying case.

## REAGENT SETS

**HI 83741-20** Iron reagents set for wine (20 tests)

## OTHER ACCESSORIES

**HI 740027P** 1.5V AA batteries (10)

**HI 731318** Cuvet cleaning cloth (4)

**HI 731321** Glass cuvettes (4)

**HI 731325W** Caps for cuvettes (4)

**HI 93703-50** Cuvet cleaning solution (250 mL)

**HI 731341** 1000  $\mu$ L automatic pipette

**HI 731351** Plastic tips for 1000  $\mu$ L automatic pipette (25)