

# IRON (ionic)

Product #: FE-40 (40 Tests)

## Ferene S, Photometric Method

### INTENDED USE

Iron FLEX-REAGENT™ is intended for measuring iron concentration in wine.

### KIT CONTENTS

Reagent #1 Buffer pH 4.8	40mL
Reagent #2 Ferene S	10mL
Iron Standard, 20 mG/L	2mL

### STORAGE & REAGENT PREPARATION

All reagents are liquid, ready to use and stable until the labeled expiration date when protected from direct light, and stored refrigerated (2-8°C) in tightly closed original containers. Presence of particulate material, turbidity, indicates deterioration of the reagents.

### SAMPLE PREPARATION

#### Clarification

Filter/centrifuge turbid samples prior to analysis.

### PROCEDURE

**System parameters:** Wavelength 578nm (570–620),

Absorbance Range 0-2.0A, 1cm pathlength.

Allow reagents to reach room temperature; label a cuvette for Standard and each Sample.

1. Pipet 50uL standard each and sample into cuvettes, as shown on the following table, using micropipettes.
2. Dispense 1000uL Reagent #1 to each reaction cuvette, mix, and wait, as shown in the Table.

	Standard	Samples
Standard 20mG/L	50µL	
Wine Samples		50µL
Reagent #1	1000µL	
Mix, wait 1 minute, Read ABS (A1)		
Reagent #2	250µL	
Mix, wait 5 minutes, Read ABS (A2)		

3. Zero the spectrophotometer with D.I. Water (or air).
4. Read absorbance (A1) of Standard and Samples.
5. Dispense 250 µL Reagent #2 into each reaction cuvette; mix, incubate 5 minutes.
6. Read Absorbance of Standard & Samples (A2).

### CALCULATIONS (MANUAL)

$$\text{Iron (mG/L)} = \frac{A2 - (A1 \times 0.808)_{\text{SAMPLE}} \times 20}{A2 - (A1 \times 0.808)_{\text{STANDARD}}}$$

Note, 0.808 corrects for Rgt #2 volume change

Samples with Iron results >40mG/L should be diluted with distilled water and re-assayed; multiply result by dilution factor.

### QUALITY CONTROL

Each laboratory should establish its own internal Quality Control scheme and procedures for corrective action if controls do not recover within the acceptable tolerances.

### AUTOMATED PROCEDURE

Contact Unitech Scientific Tech Support for assay protocol details. Place Reagents #1, #2 and Standard in Reagent Rack.

### METHODOLOGY & CHEMICAL PRINCIPALS

Under acidic conditions, ionized iron is reduced to Ferrous and reacts with Ferene S to form a stable colored complex. The intensity of the color measured is proportional at the quantity of iron presents in the sample.

### SAFETY PRECAUTIONS

- Reagent #1 is Harmful and may cause sensitization by skin contact; contains Hydroxylammonium sulfate.
- Avoid contact with skin and wear suitable gloves. The Iron Standard is corrosive.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Handle reagents with caution, avoid swallowing and contact with skin, eyes and mucous membranes; wear suitable gloves.
- Wear eye/face protection.
- In case of accident or if you feel unwell, seek medical advice immediately.

### WASTE MANAGEMENT

Follow local legal requirements.

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