

# 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 (545–620), Absorbance Range 0-2.0A, 1cm pathlength.

Allow reagents to reach working temperature before using. Label one cuvette for Standard and each Sample.

Pipet 125uL standard, samples into cuvettes, as shown on the following table, using micropipettes.

	STANDARD	SAMPLE	
Sample	-	125	µL
Standard	125	-	µL
Reagent 1	1000	1000	µL

Mix, incubate 5 minutes. **Read absorbance (A1)**

	STANDARD	SAMPLE	
Reagent 2	250	250	µL

1. Dispense 1000uL Reagent #1 to each reaction cuvette, mix, and wait, as shown in the Table.
2. Zero the spectrophotometer using D.I. water; read absorbance (A1).
3. Dispense 250 µL Reagent #2 into each reaction cuvette. Mix, wait, and read absorbance (A2).
4. Mix, incubate 5 minutes; **read absorbance (A2)**

### CALCULATIONS (MANUAL)

$$\text{Iron (mg/L)} = \frac{A2 - (A1 \times 0,818) \text{ Sample}}{A2 - (A1 \times 0,818) \text{ Standard}} \times 20$$

Notes:

- 0.818 = Correction for Rgt #2 volume
- 20= Iron Standard (mg/L)

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.

### 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.

### AUTOMATED PROCEDURE

Use Reagent 1 to prepare Sample blank cuvettes, prepare Working Reagent according to manual procedure above. Contact Unitech Scientific Tech Service for details.

### 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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