

# New Iron Test



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Friday, March 12<sup>th</sup> WQA 2010

10:30 – 10:55 am

# New Development in Total Iron Testing



- TPTZ (tripyridyl-s-triazine) Total Iron test.
- Iron testing most frequently uses TPTZ powder pillows. They contain in one unit, reducing agents, buffer and TPTZ indicator.
- There is an inherent flaw in this test methodology. Turbidity issues (and most iron samples have turbidity) are addressed by adding an optional step.
- This step when ignored can result in false low readings.

# Overcoming the Total Iron Problem

- The *Micro EZ Open REDUCER powder pillow* addition only adds reducing agent and buffer.
- The TPTZ is added using an *eXact<sup>®</sup> Strip Micro FE TPTZ Iron* (a change in Reagent Delivery Device).
- The new procedural change is as follows:



**1. Rinse cell three times with water sample to be tested. Finally, fill cell to capacity.**



## 2. Add EZ Open “REDUCER” powder pillow to cell and cap



**3. Turn meter on and press READ to start the twenty (20) second count down timing. Place thumb over cap and rotate meter up side down repeatedly. At end of 20 seconds meter will automatically start a 40 second count up timing.**

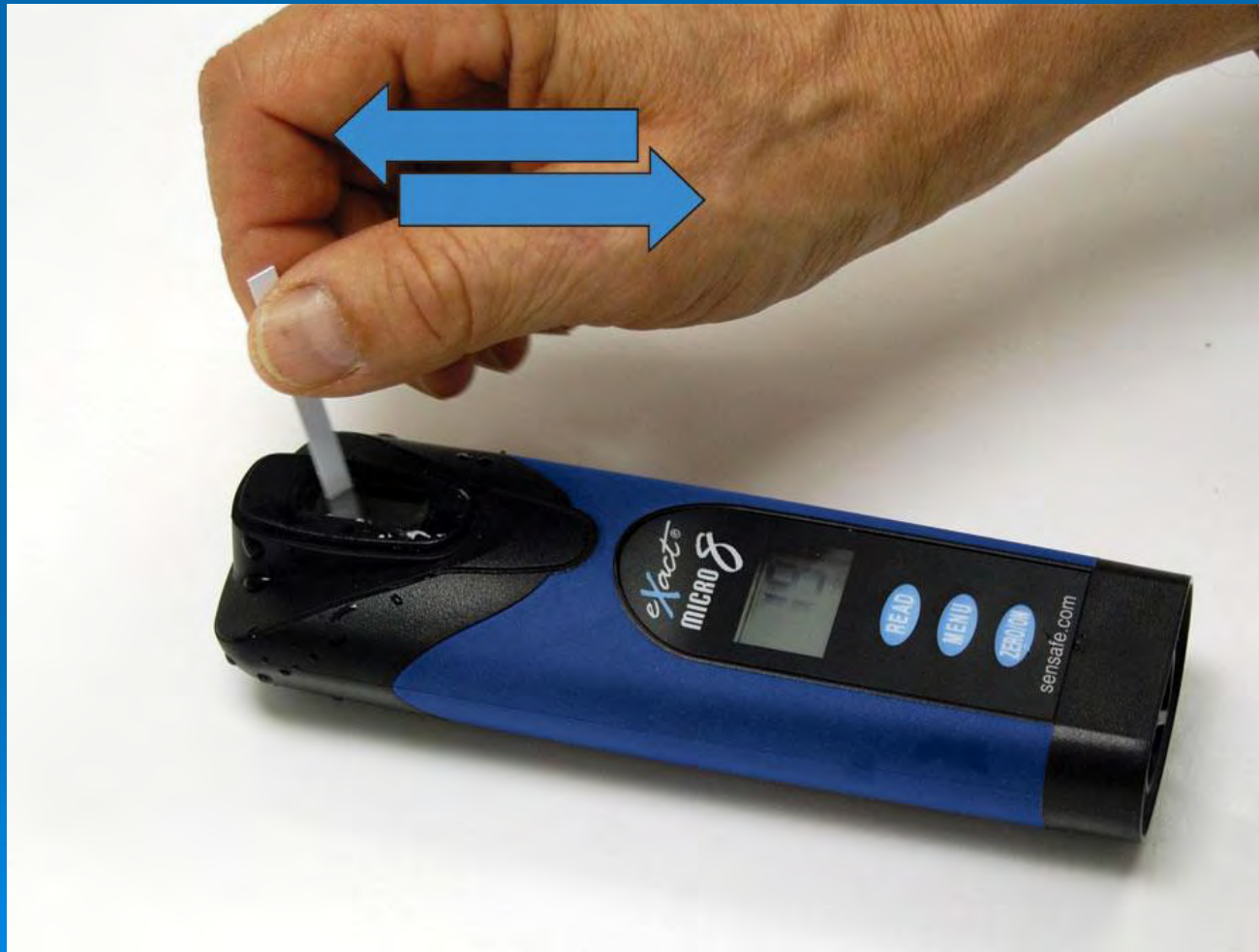


**4. At end of count up time press  
ZERO to blank meter.**



Note: Reagent is dissolved and turbidity that is caused by iron oxide clears. The zero is valid at this point.

5. Next press READ to start the count down timer and dip an *eXact*<sup>®</sup> Strip TPTZ Iron strip for 20 seconds; remove and discard strip.

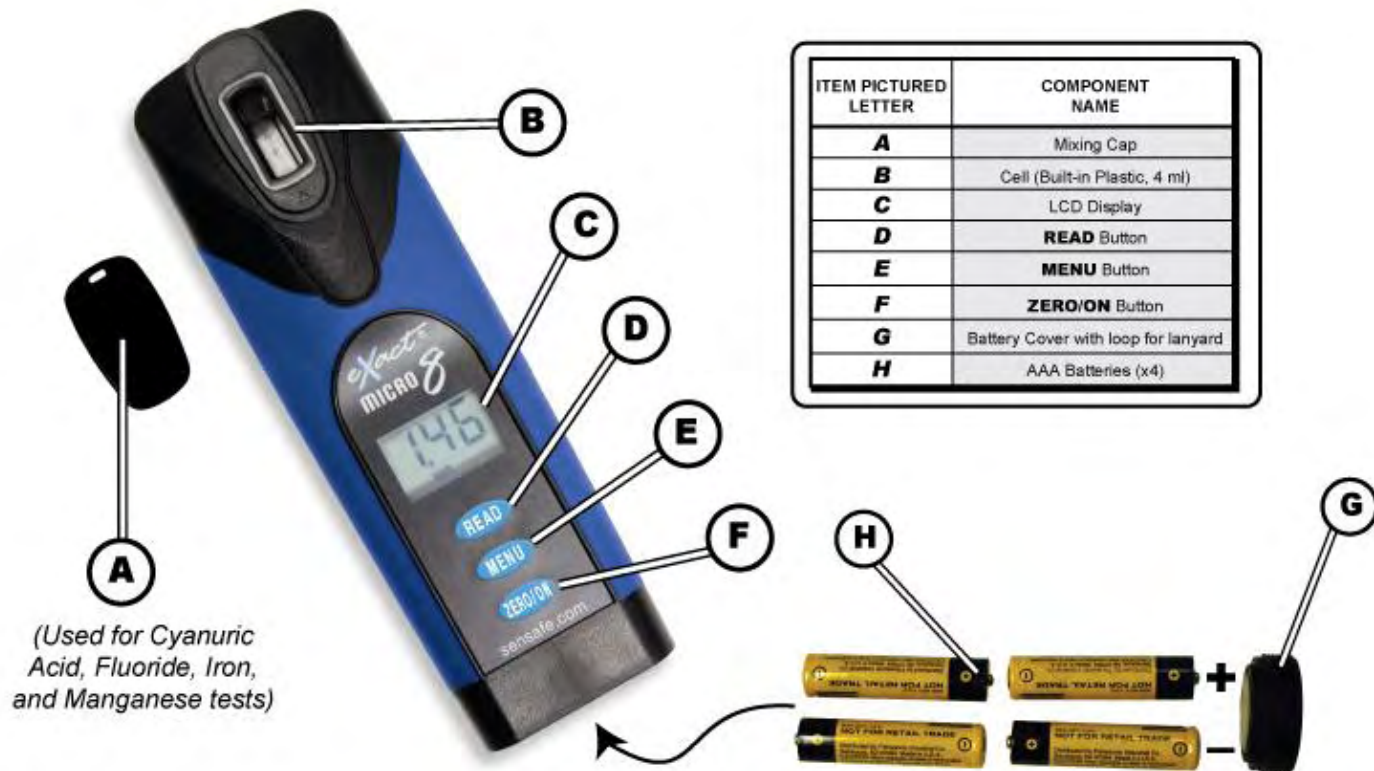


6. The meter automatically will start a count up timing for 40 seconds and will read the sample for Total Iron and store in memory. Record this result.



Note: Cap is not necessary for accurate readings. Design *change* overcomes ambient light interference.

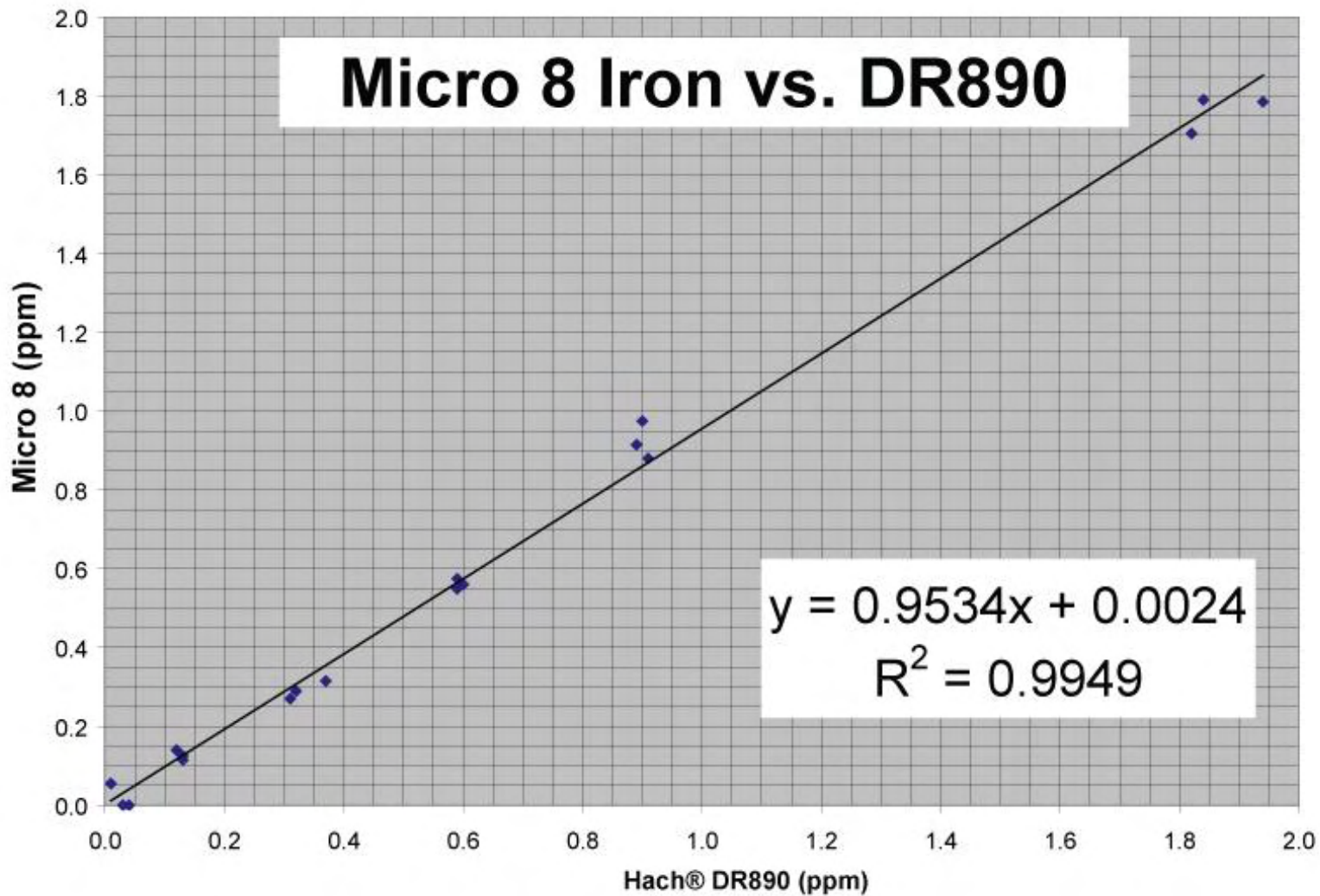
# The eXact<sup>®</sup> Micro 8



# The eXact<sup>®</sup> Micro 8 Specifications

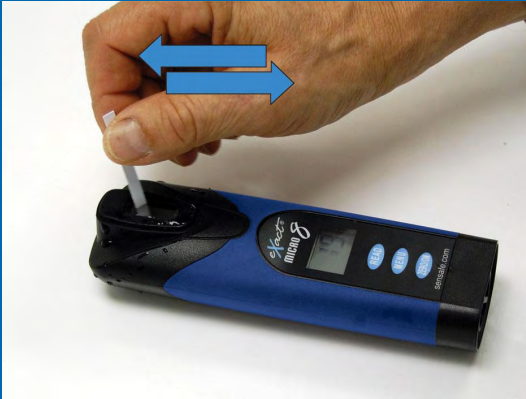
<b>Measurement Method:</b>	Photometric
<b>Light Source:</b>	Light Emitting Diode (LED)
<b>Wavelength:</b>	638 nm
<b>Transmission Range:</b>	100 - 0.00 %T
<b>Photometric Precision:</b>	+/- 0.1/0.01 %T
<b>Automatic Range Selection:</b>	See Specifications below
<b>Display:</b>	3-digit customized liquid crystal display with annunciators
<b>CELL Pathlength:</b>	20mm
<b>Cell Chamber:</b>	Custom-molded, proprietary, PET plastic fused into chamber, non-removable
<b>Sample Required:</b>	4 ml (0.13 oz)
<b>Operating Temperature Range:</b>	0 - 50°C (32° - 122°F)
<b>Power Supply:</b>	(4) AAA alkaline batteries
<b>Battery Life:</b>	>2000 tests with alkaline batteries
<b>Electromagnetic Compliance (EMC):</b>	Emitted Interference - EN 61326 Immunity to Interference - EN 61326
<b>Waterproof Rating:</b>	Exceeds IP67
<b>Weight:</b>	Instrument: 140 g (5 oz)
<b>Dimensions:</b>	Instrument: 5 (W) x 3.5 (D) x 16.5 (H) cm; (2 x 1.4 x 6.375 in)

# Micro 8 Iron vs. DR890



# eXact® MICRO REAGENTS

No.	PARAMETER/PRODUCT	PART NUMBER	DETECTION RANGE	CHEMISTRY
	eXact® Micro 8 (meter only)	486800	N/A	N/A
	Carrying case with foam	486001	N/A	N/A
1	Cyanide	486812	0.00 - 4.00 ppm	Isonicotinic/Barbituric Acid
2	Total Iron, TPTZ (Fe <sup>+2</sup> /Fe <sup>+3</sup> )	486650	0.00 - 8.0 ppm	REDUCER + TPTZ
3	Iron, Ferrous (Fe <sup>+2</sup> ) only	486631	0.03 - 3.80 ppm	TPTZ
4	Ammonia	483343-M	0 - 2.4 ppm	Salicylate method
5	Phosphate	486814	0 - 3.60 ppm	Molybdate Method
6	BT-pH	486652	5.0 - 9.9	Bromothymol blue + Thymol blue
7	Sulfide	486818	0.01 - 1.00 ppm	DPD Reagent / FeCl <sub>3</sub>
8	Transmission	N/A	0.00 - 100%	N/A



# TEST KIT PERFORMANCE IN A LAB

- Analysis will provide good results in a Laboratory setting
- A lab is a controlled environment where Reagent stability is assured
- Recalibration of test kit reagents or kit performance can be easily confirmed

# TEST KIT ON-SITE PERFORMANCE (Challenges)

- Test kits and instruments on-site operate under different environmental conditions
- Customer home or business can have a great deal of affect on results and operator
- Distractions like noise and activity
- For some tests (especially Liquid reagents) stability is affected by elevated Temperature in transport vehicle
- On-site precise results are a challenge
- Easy, non-technical procedures are desirable



# Questions?

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