

## Methods

Dissolved oxygen in boiler system water causes corrosion and pitting of metal surfaces, which can lead to boiler inefficiency, equipment failure, and system downtime. DEHA (N, N-Diethylhydroxylamine) is added to boiler system water as an oxygen scavenger to keep the dissolved oxygen levels as low as possible.

### The PDTS Method

Reference: J. A. Tetlow and A. L. Wilson, "Determination of Iron in Boiler Feedwater," *Analyst*, 1958.

The test kits employ the PDTS chemistry, in which DEHA reduces iron III (ferric state) to iron II (ferrous state), which readily reacts with PDTS (3-(2-pyridyl)-5,6-bis(4-phenylsulfonic acid)-1,2,4-triazine disodium salt) to form a pink-purple colored complex in direct proportion to the DEHA concentration. Test results are expressed in ppb (µg/L) or ppm (mg/L) DEHA.

### The Ceric Sulfate Titrimetric Method

Reference: Developed by CHEMetrics, Inc.

CHEMetrics developed a titrimetric method that employs a ceric sulfate titrant and ferroin end point indicator. DEHA reduces ferric iron to the ferrous state, and the resulting ferrous iron is titrated with the ceric sulfate titrant. Test results are expressed in ppm (mg/L) DEHA.



## Visual Kits

Range: 0-400 & 400-3000 ppb  
MDL: 15 ppb / Method: PDTS

	Cat#
<b>CHEMets Kit</b>	<b>K-3902</b>
CHEMets Refill, 30 ampoules	R-3902
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-3900 <sup>1</sup>
Low Range Comparator, Shelf-life 2 years: 0, 30, 60, 100, 150, 200, 300, 400 ppb	C-3901
High Range Comparator, Shelf-life 2 years: 400, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000 ppb	C-3902

Kit comes in a plastic case and contains everything needed to perform 30 tests: Refill, Low and High Range Comparator, Activator Solution, 25 mL sample cup, instructions and MSDS.

Range: 25-250 ppm  
MDL: 25 ppm / Method: Ceric Sulfate Titrant with Ferroin Indicator

	Cat#
<b>Titrets Kit</b>	<b>K-3925</b>

Increments:  
25, 27.5, 30, 32.5, 35, 37.5, 40, 45, 50, 62.5, 75, 87.5, 100, 125, 175, 250 ppm

Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, thirty valve assemblies, titrettor, 25 mL sample cup, instructions, and MSDS.



## Instrumental Kits

### V-2000 Multi-Analyte Photometer

(See page 8 for instrumental features)

Range: 0.15-2.00 ppm  
Method: PDTS

	Cat#
<b>Vacu-vials Kit</b>	<b>K-3903</b>

Kit comes in a cardboard box and contains everything needed to perform 30 tests: thirty ampoules, Activator Solution, 25 mL sample cup, ampoule blank, instructions, calibration table, and MSDS.

*Vacu-vials Kits require the use of the V-2000 Photometer or a spectrophotometer capable of accepting a 13 mm diameter round cell. Instrument sold separately.*

### V-1000 Multi-Analyte Photometer

(See page 10 for instrumental features)

Range: 0.15-2.00 ppm  
Method: PDTS

	Cat
<b>VVR Module</b>	<b>V-3903</b>
Vacu-vials Refill, 30 ampoules	R-3903
Activator Solution Pack, six 10 mL bottles, Shelf-life 2 years	A-3900 <sup>1</sup>
VVR Filter, Shelf-life 2 years	F-3903

Module comes in a cardboard box and contains everything needed to perform 30 tests: Refill, VVR Filter, Activator Solution, 25 mL sample cup, instructions, and MSDS.

*VVR Modules require the use of the V-1000 Photometer. Instrument sold separately.*

### Kit Components common to DEHA

Description	Cat#
Sample Cup Pack, 25 mL (6 ea)	A-0013
Ampoule Blank Pack (5 ea)	A-0023
Titrettor Pack (1 ea)	A-0053
VVR Zero Ampoule Pack (5 ea)	A-0128
VVR Zero Test Tube Pack (5 ea)	A-0129

<sup>1</sup>The accessory pack supplies enough solution to perform at least 200 tests.

*If no shelf-life is listed for a product, then the shelf-life is at least 2 years.*