

**METHOD #:** 264.2 (Issued 1978)  
**TITLE:** Rhenium (AA, Furnace Technique)  
**ANALYTE:** CAS # Re Rhenium 7440-15-5  
**INSTRUMENTATION:** AA  
**STORET No.** Total Not Assigned  
**Optimum Concentration Range:** 0.5-5 mg/L  
**Detection Limit:** 0.2 mg/L

### 1.0 Preparation of Standard Solution

- 1.1 Stock solution: Prepare as described under "direct aspiration method".
- 1.2 Prepare dilutions of the stock solution to be used as calibration standards at the time of analysis. These solutions are also to be used for "standard additions".
- 1.3 The calibration standards should be diluted to contain 1% (v/v) HNO<sub>3</sub>.

### 2.0 Sample Preservation

- 2.1 For sample handling and preservation, see part 4.1 of the Atomic Absorption Methods section of this manual.

### 3.0 Sample Preparation

- 3.1 Prepare as described under "direct aspiration method". Sample solutions for analysis should contain 1 %(v/v) HNO<sub>3</sub>.

### 4.0 Instrument Parameters (General)

- 4.1 Drying Time and Temp: 30 sec-125°C.
- 4.2 Ashing Time and Temp: 30 sec-300°C.
- 4.3 Atomizing Time and Temp: 10 sec-2800°C.
- 4.4 Purge Gas Atmosphere: Argon
- 4.5 Wavelength: 346.0 nm
- 4.6 Other operating parameters should be set as specified by the particular instrument manufacturer.

### 5.0 Analysis Procedure

- 5.1 For the analysis procedure and the calculation, see "Furnace Procedure" part 9.3 of the Atomic Absorption Methods section of this manual.

### 6.0 Notes

- 6.1 The above concentration values and instrument conditions are for a Perkin-Elmer HGA- 2100, based on the use of a 20  $\mu\text{L}$  injection, continuous flow purge gas and pyrolytic graphite.
- 6.2 Background correction may be required if the sample contains high dissolved solids.
- 6.3 Since many rhenium compounds volatilize near 300°C, the allowable ashing temperature should be verified in the sample matrix being analyzed.
- 6.4 For every sample matrix analyzed, verification is necessary to determine that method of standard addition is not required (see part 5.2.1 of the Atomic Absorption Methods section of this manual).
- 6.5 If method of standard addition is required, follow the procedure given earlier in part 8.5 of the Atomic Absorption Methods section of this manual.

## 7.0 Precision and Accuracy

- 7.1 Precision and accuracy data are not available at this time.