

# Certificate of Analysis

## Standard Reference Material 1623

### Sulfur in Residual Fuel Oil

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Sulfur Content . . . . .  $0.268 \pm 0.004$  weight percent

This Standard Reference Material is an analytical standard for determining sulfur in residual fuel oil. It is a commercially available fuel oil having the following inspection properties that are supplied for identification only: gravity, 27.0 °API; flash point (Pensky-Martens), 170 °F; viscosity (kinematic), 5.8 centistokes; pour point, 47 °F; carbon residue (on 10 percent bottoms), 0.31 percent. The following analytical data are not certified, but are reported for information only: carbon, 87.4 percent; hydrogen, 12.0 percent; water, not detected (<0.1 percent); sediment, not detected (<0.01 percent); ash, not detected (<0.005 percent); and vanadium  $3 \pm 1$  ng/g.

Sulfur was determined gravimetrically as barium sulfate after combustion in a Parr Oxygen Bomb using 1-g samples. The method is similar to ASTM Method D-129. It differs only in that any iron present is removed with ammonium hydroxide before the precipitation of the sulfur as barium sulfate. The uncertainty shown represents the 95-percent confidence limit of the mean based on 12 determinations and allowances for known sources of possible error.

The material was supplied by the Esso Research and Engineering Company of Linden, New Jersey. Vanadium was determined by T. E. Gills, using non-destructive neutron activation analysis.

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of J. K. Taylor.

The technical and support aspects involved in the preparation, certification, and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by T. W. Mears.

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J. Paul Cali, Chief  
Office of Standard Reference Materials