

## Meeting Strict Standards for Sulfur Content in Fuel with Vanta™ XRF Analyzers



### Introduction

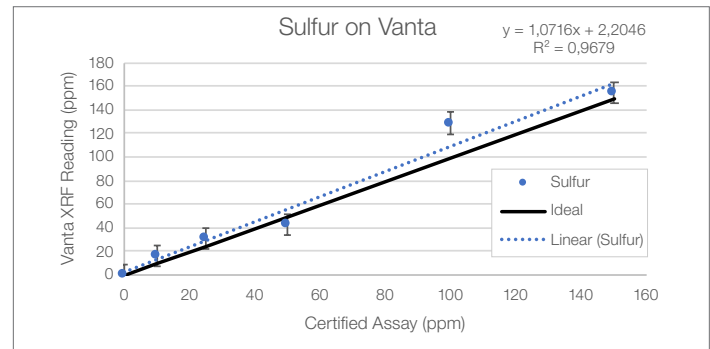
International and domestic regulations regarding sulfur content in petroleum products and fuels have become increasingly stringent in recent years. Sulfur needs to be removed from crude oil during the refinement process since it can impact vehicles' emission control systems, contributing to air pollution. X-ray fluorescence (XRF) analysis can be used to measure the level of sulfur in fuel. Olympus' Vanta™ XRF analyzer is well suited to meet the strict testing requirements established by standards, such as ASTM D-4294. The Vanta handheld analyzer can provide fast and accurate assessment of sulfur content in seconds and with virtually no sample preparation in even the most challenging environments.

## Using Vanta Analyzers for Low Sulfur Analysis

ASTM D-4294 establishes testing and performance guidelines when analyzing sulfur content using XRF in various petroleum products. The Vanta XRF analyzer offers several advantages for users who are testing to the D-4294 standard:

- Rugged (IP65/64 rated and MIL-STD 810G drop tested)
- Axon Technology™ electronics ensure accurate and repeatable performance
- Virtually no sample prep —just collect your sample in a container and analyze it
- The portable Vanta Work Station provides closed-beam safety and consistent sample presentation
- Measure for other elements, such as wear metals (Fe, Cr, Ni, etc.) and additives (P, Ca, K, etc.)

To demonstrate the Vanta analyzer's performance capabilities, we tested several certified oil samples for low sulfur content (<150 ppm) using a VCA (Vanta C series model with silver anode). Samples were tested inside the Vanta portable Work Station for 120 seconds each. Results shown are the averages of 5 repeated tests:



Standard	S Assay	S	S +/-
Mineral Oil	0	0	9
SMO-10-100	10	16	9
SMO-25-100	25	31,2	9
SMO-50-100	50	42,4	9
SMO-100-100	100	128,6	9
SMO-150-100	150	154	9

## Conclusion

The Olympus Vanta handheld XRF can effectively and accurately measure sulfur content in accordance with ASTM D-4294. The accuracy and precision provided by the Vanta analyzer helps ensure that compliance with fuel regulations is maintained.

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