

QUALITY WORK INSTRUCTIONS (QWI) SULFUR ANALYSIS PROCEDURE PURITY – TM 11

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NOTE: Raw material sulfur is a byproduct of natural gas or petroleum refining, and is 99.9% pure upon receipt. The sulfur content of essentially pure elemental sulfur is best determined by knowing the amount of impurities present. These impurities will usually be moisture, ash, acid (as H₂SO₄), and organic matter.

1.0 EQUIPMENT NEEDED

Calculator
Sulfur analysis results on specific sample being tested

2.0 PROCEDURE

- (1) Obtain sulfur analysis results from the following procedures on specific sample being tested:

Heat Loss at 80°C (%)
Ash (%)
Acidity (%)

- (2) Use the following formula to calculate % Purity by difference.

- a. Standard calculation

$$\% \text{ Purity} = 100\% - (\text{Heat Loss at } 80^{\circ}\text{C } \% + \text{Ash}\% + \text{Acidity } \%)$$

- b. 21-12 and Spider sulfurs

$$\% \text{ Purity} = 100\% - (\text{Heat Loss at } 80^{\circ}\text{C } \% + 2.5\% \text{ additives} + \text{Acidity } \%)$$