

QUALITY WORK INSTRUCTIONS (QWI)

SULFUR ANALYSIS PROCEDURE

INSOLUBILITY

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1.0 EQUIPMENT NEEDED

Carbon disulfide
Medium porosity crucible
Crucible holder
Suction flask
Suction pump
Glass rod stirrer
Oven
Desiccator

2.0 PROCEDURE

- (1) Weigh a medium porosity crucible alone. Record this weight.
- (2) Add exactly 5 grams of sulfur sample into crucible.
- (3) Note: Carbon disulfide is extremely flammable, avoid contact with skin. Pour 100 ml of carbon disulfide through the sulfur sample using slight suction while stirring lightly with a glass rod. Rinse off rod with last of carbon disulfide and allow suction pump to run an extra 3 to 4 minutes after liquid has disappeared.
- (4) Place the crucible in an 80°C oven for 15 minutes to dry.
- (5) Remove and cool in desiccator for a minimum of 15 minutes.
- (6) Weigh to find total weight after test. Subtract crucible weight from total weight to find residue weight. Use the formula below to calculate % Insoluble weight.

$$\% \text{ Insoluble Weight} = \frac{\text{Weight of residue} \times 100}{5\text{-gram original sample weight}}$$

Note: Oil is also soluble in carbon disulfide. If the sample contains oil, allow for oil content by using the formula below instead.

$$\% \text{ Insoluble Weight} = \frac{\text{Weight of residue} \times 100}{5\text{-gram original sample weight} \times (1 - \% \text{Oil as a decimal})}$$