

QUALITY WORK INSTRUCTIONS (QWI)

SULFUR ANALYSIS PROCEDURE

OIL CONTENT – PETROLEUM ETHER – TM 7

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1.0 EQUIPMENT NEEDED

Analytical balance readable to 0.1 milligrams
Natural circulation lab oven regulated at 100 – 105°C
Desiccator
12.5 cm qualitative filter paper
250 ml Erlenmeyer flask
100 ml graduated cylinder
Rubber stopper for Erlenmeyer flask
100 ml beaker
50 ml beaker
2 ml pipet
Steam table or explosion proof hot plate (optional)

2.0 PROCEDURE

- (1) Heat a 50 ml beaker in lab oven at 105°C for 15 minutes
- (2) Remove beaker from oven and place in desiccator to cool.
- (3) After cooling remove beaker from desiccator. Weigh and record to the nearest 0.1 mg.
- (4) Weigh 10.0000 +/- 0.0010 grams of sulphur sample on 12.5 cm filter paper. Record weight and transfer to 250 ml Erlenmeyer flask.
- (5) Add 100 ml petroleum ether using 100 ml graduated cylinder. Stopper the flask with a rubber stopper and let set for 30 minutes agitating every 10 minutes.
- (6) After 30 minutes remove stoppers and decant flask into 100 ml beaker. Pipet 50 ml of ether to another 100 ml beaker.
- (7) Place beaker with 50 ml of ether on steam table or hot plate and evaporate to dryness
- (8) Pipet 2 ml of fresh ether down sides of evaporated 100 ml beaker. Decant the ether into weighed 50 ml beaker. Repeat this step two more times.
- (9) Place 50 ml beaker on hot plate or steam table to evaporate ether. Once ether has evaporated wipe off excess moisture on outside of beaker and place in a 70° C oven for 15 minutes to dry.
- (10) After drying place in desiccator to cool.
- (11) Remove from desiccator and weigh. Record weight.

3.0 CALCULATIONS FOR OIL %

- (1) Let W1 be the weight of 50 ml beaker before extraction
- (2) Let W2 be the weight of 50 ml beaker after extraction
- (3) % Oil = $(W2 - W1) \times 20 - 0.15$

Note: The 0.15 factor is a correction for sulphur that dissolves in the ether.