Phoenix Airwave™
Method Note

Ash Analysis of Fuel Oil

Systems

Phoenix BLACK AIRWAVE

Equipment

100 mL Porcelain Crucibles
Analytical Balance
Disposable Pipette
Gloves
Tongs

Sample Preparation

None.

Procedure

1. Program a "Ramping" method with calculation mode "Ash" in the Phoenix BLACK using parameters located in "Stages" section.
2. Weigh a crucible that has been preashed for at least 10 minutes at the set temperature and record weight.
3. Weigh ~20 grams of sample and record weight.
4. With furnace temperature less than 100°C, place crucible in furnace and proceed with designated method.
5. When method is complete, remove crucibles and allow to cool in dessicator.
6. Reweigh crucible containing ash and record weight.
7. Calculate percent ash:

(Weight of Ashed Sample With Crucible - Weight of Crucible) / Weight of Sample x 100

Parameters

Stage	Dwell Time (minutes)	Temperature (°C)	Sample Size (g)
1	30 (60 min ramp)	250	20
2	240	525	-

Notes

1. Never place samples into the furnace above 100°C.
2. The Phoenix BLACK satisfies ALL apparatus requirements for a "muffle" furnace in section 5.7 of IP501.
3. This application is an alternative when the Bunsen burner step is eliminated. If Stage 1 of this method is eliminated and the Bunsen burner is used it satisfies all requirements of IP 501. The fusion in section 7.2.5 using dilithium tetraborate/lithium fluoride flux for fusion prior to elemental analysis may also be done in the Phoenix.
4. The ashing times may be shorter if the sample is burned off over the Bunsen burner prior to using the muffle furnace. Because we are not burning the sample the same in the Phoenix, some of the carbon may be vitrified which will make it more difficult to oxidize resulting in longer ashing times.

*The above parameters are suggested starting points and may need to be modified to meet certain product specifications.