1.0 Purpose

The purpose of this procedure is to describe how to determine the loss on ignition of Magnesium Oxide (MgO).

2.0 Scope

This procedure applies to MgO samples.

3.0 Responsibility

Lab Associate is responsible for performing this procedure.

4.0 Safety Considerations

Appropriate PPE should be worn in the laboratory

Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or community.

5.0 Materials/Equipment

- Porcelain Crucible - 10 ml. Capacity
- Weighing balance - B440 Satorius
- Drying Oven (Low temperature) - S/P TempCon Gravity convection
- N86205 Muffle Furnace (High temperature) -- Thermodyne Type 1300 120V
- Dessicator
- Tongs
- Small Spatula

6.0 Procedure

1. Place the porcelain crucible in the 100°C oven for 10 minutes to assure dryness.
2. Tare the balance to zero.
3. Place the dry crucible on the scale and record the weight.
4. Add 5 grams of sample to the crucible and record the combined weight.
5. Subtract the weight of the crucible from the combined weight. **This is the weight of sample (A).**

6. Place the crucible in the 100°C oven for 30 minutes.
7. Remove the crucible from the oven and place it in the dessicator to cool.
8. After a suitable cooling period, remove crucible from dessicator and place on tared balance. Record the weight.
9. Subtract the weight of the crucible and contents from the combined weight at the start. **This is the weight of the moisture H2O removed – (B)**
10. Increase the setting for the muffle furnace to 1000°C
11. Place the crucible in the furnace, using forceps, for two hours.
12. Transfer the crucible, using the forceps, to the dessicator to cool.
13. Return the crucible to the furnace for 15 minutes
14. Repeat items 11 and 12 until constant weight is achieved.
15. Record the weight and subtract that weight from the weight at item 7. **This is the weight of the CO2 driven off – (C).**

    B/A = % moisture in the sample

    C/A = % CO2 driven off.

    (B+C) /A = %LOI
16. Return the muffle furnace temperature setting to 500ºC
17. Compare the results with the C of A for the carload from which the sample came, and report any substantial discrepancy to the POC.

7.0 Reference Documents

N/A

8.0 Change Information

Updated procedure following *SOP Template Instructions (Q12-PR-100-004)* and *Document Numbering (Q12-PR-100-003)*