

SOP No: SOP-PHYS-002	SOP Description: Moisture Content Determination by Convection Oven
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### **SOP-PHYS-002: Moisture Content Determination by Convection Oven**

Scope:

This procedure is a gravimetric method used to determine the amount of free moisture in a sample.

Principle:

A sample may be heated under controlled conditions in order to drive off all free moisture. The original “wet” weight and the ultimate dried weight are then used to calculate the percentage of moisture lost, which equals the moisture content of the original sample.

Equipment:

Forced Air Drying Oven  
Analytical balance

Materials:

Aluminum drying pans

Procedure A – Rough Rice:

1. Label each drying pan corresponding to a sample and record the weight of the pan ( $W_1$ ).
2. Place ~15 g of sample in a drying pan. Record weight of sample + pan ( $W_2$ ).
3. Place pans in a convection oven at 130°C for 24 h.
4. Record weight of each pan + dried sample ( $W_3$ ).
5. Calculate moisture content (MC) on a wet-weight basis (wb), as follows:

$$\%MC_{wb} = \left[ \frac{(W_2 - W_1) - (W_3 - W_1)}{(W_2 - W_1)} \right] * 100$$

Procedure B – Rice Flour:

1. Follow instructions in Procedure A, except that sample size may be adjusted to 2.5-3.0 g of flour (ground milled rice) and drying duration may be adjusted to 1 h.

Reference:

AACC International. Approved Methods of Analysis, 11th Ed. Method 44-15.02. Moisture – Air-Oven Methods. AACC International, St. Paul, MN, U.S.A.