Prepared/Reviewed: R. Rash, Senior Laboratory Technican Effective date: 08/23/04

Approval Authority: Laboratory Supervisor

Purpose:

To determine the active substance of an emulsion polymer.

Scope:

This method is used to determine the active substance of an emulsion polymer. The results can be compared to theoretical activity based on formulation or to determine an unknown.

Only personnel who have been trained on this test method have the authority to perform this test method.

References:

IMP010

Definitions:

None

Materials Needed:

Magnetic stirrer & stir bar(s)
Vacuum aspirator
Analytical balance
Oven 105 ± 2 °C
Beaker (100-250 ml)
Spatula
Buchner funnel (90 mm)
Glass microfibre filters (90 mm diameter)
Acetone/methanol (70:30, v:v) mixture
Stir bar retriever
Aluminum pans (96 mm diameter)
Dessicator
Parafilm "M"
disposable syringe
500 ml filter flask
Timer

Procedure:

1.0 Place a stir bar in the beaker and fill the beaker to approximately 100 ml with the acetone/methanol mixture.

2.0 Pull 2.5-3.0 ml of emulsion polymer sample into the syringe. Place the syringe and product together on the balance and then tare the balance.

3.0 Slowly introduce polymer to the side of the vortex of stirring acetone/methanol mixture. Return the syringe to the balance in order to get the negative weight and then record the weight. Let the mixture mix a minimum of 15 minutes.

4.0 Weigh glass filter and aluminum pan together. Place filter in buchner funnel. Start vacuum and rinse filter well with at least 50ml of acetone.

5.0 With vacuum on, transfer entire contents of beaker onto filter slowly trying to keep it within filter diameter. Let vacuum dry 30 sec. and then break vacuum.

6.0 Carefully remove filter and place on aluminum pan. Put in oven for minimum of 1 hour.

7.0 Remove from oven and place in dessicator to cool. Weigh and calculate as follows:

$$\% \text{ Activity} = \frac{(\text{weight of ppt + filter + pan}) - (\text{weight of filter + pan})}{\text{weight of emulsion polymer sample}} \times 100$$

Documentation:

Record result on data collector.