PAINT FILTER TEST

Scope and Application

This Environmental Geochemistry Laboratory (EGL) Standard Operating Procedure (SOP) is applicable to evaluation of free liquid by the Paint Filter Test in accordance with EPA Method 9095A. Procedures outlined in this SOP will be followed, and any deviations noted.

Health and Safety

All laboratory work will be performed in accordance with the EGL Chemical Hygiene Plan (CHP) by approved staff. Approval to work in the EGL requires orientation to laboratory safety procedures and potential hazards under the guidance of the Laboratory Manager, as specified in the CHP.

Equipment and Supplies

The following is a list of equipment that may be necessary to carry out the procedures contained in this SOP. Additional equipment may be required

- Appropriate protective equipment
- Conical paint filter (60 x 60 mesh or 60 x 48 standard mesh)
- Glass funnel
- Ring stand and ring or tripod
- 100 mL graduated cylinder or beaker
- Timer

Procedure

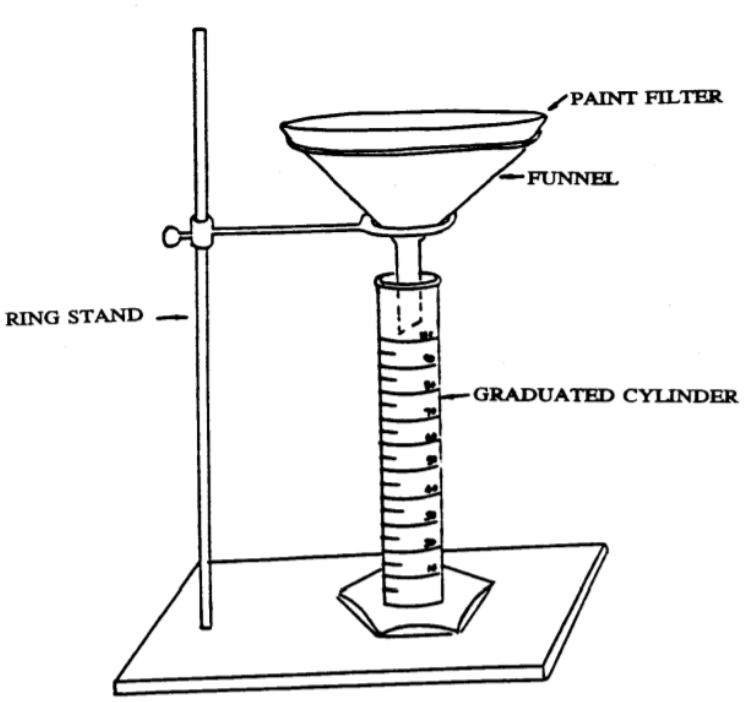
Sample Preparation

This test requires a 100 milliliters (ml) or 100 grams (g) of representative sample. If a 100 mL or 100 g sample does not sufficiently represent the waste, larger samples in multiples of 100 mL or 100 g should be used. However, if larger samples are being tested, then they should be divided into 100 mL or 100 g portions and each portion should be tested separately. If any portion contains free liquids, the entire sample is considered to have free liquids.

Test Procedure

1. Assemble the test apparatus as shown in Figure 1.
2. Sorbent materials that do not conform to the shape of the filter should be cut into small pieces and poured into the filter. Ensure the particles to be tested are smaller than 1 cm (they should be able to pass through a 9.5 mm standard sieve). However, grinding sorbent materials should be avoided to preserve the integrity of the sorbent.
3. Place the sample in the filter and settle the sample in the filter by lightly tapping the sides of the filer as it is filled.
4. For brittle materials that do not conform to the filter and are larger than 1 cm, lightly crush to reduce oversized particles. Only crush the particles if it is not practical to cut the material (i.e. clay, silica gel, some polymer)
5. Allow the sample to drain for 5 min into the 100 mL graduated cylinder.
6. If any portion of the test material collects in the graduated cylinder, then the material is deemed to contain free liquids.

Figure 1
Paint Filter Test Apparatus



Quality Assurance/Quality Control

Laboratory notes and chain-of-custody forms will be checked by staff to verify the information recorded.

Duplicate or replicate samples should be analyzed at a project appropriate rate, with at least one duplicate or replicate sample per event. The reproducibility is determined for duplicate samples as follows:

$$RPD = \frac{(X_1 - X_2) \times 100}{(X_1 + X_2) \div 2}$$

where:

RPD	=	relative percent difference
X1	=	larger result value
X2	=	smaller result value

Reference

USEPA (U.S. Environmental Protection Agency), 1996. Method 9095A. Paint Filter Liquids Test.