



abc laboratories

Methods for Sampling

T01 – Depositional Dust Sampling

Scope

This Standard sets out a method for the sampling of particulate matter that is deposited from the atmosphere and procedures for the gravimetric determination of the mass deposition rate of insoluble solids, ash, combustible matter, soluble solids and total solids from ambient air.

Referenced Documents

The following documents are referred to in this Standard:

AS 1152	Specification for test sieves
AS 2162	Verification and use of volumetric apparatus
AS 2162.1	General—Volumetric glassware
AS 2164	Laboratory glassware—One-mark volumetric flasks
AS 2166	Laboratory glassware—One-mark pipettes
AS 2922	Ambient air—Guide for the siting of sampling units

Definitions

Ash: The mass of that portion of the insoluble matter remaining after combustion.

Combustible matter: The mass of that portion of the insoluble matter lost during combustion.

Constant mass: Within ± 1 mg of the previous mass.

Deposited matter: Particles which are collected in a deposit gauge (see Clause 6.2) and which pass through a 1 mm mesh sieve complying with AS 1152.

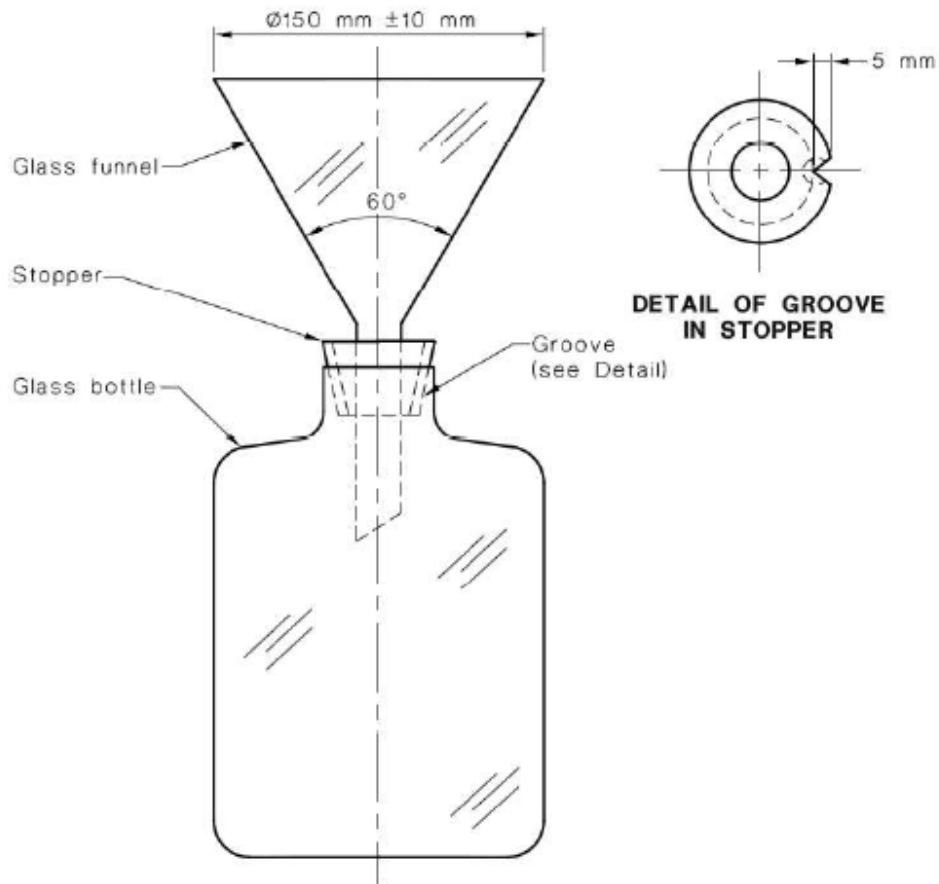
Insoluble matter: The mass of the insoluble portion of the deposited matter.

Soluble matter: The mass of the soluble portion of the deposited matter.

Total solids: The mass of the particulate matter deposited in a deposit gauge.

U95: A measurement of uncertainty at a confidence interval of 95% according to ISO GUM.

Apparatus



- Crate/container for sample container.
- 1 x sample container.
- Simulated copper sulphate CuSO_4 (1 mL)
- Marker pen/ink pen
- 500mL wash bottle
- 1 x wash bottle of distilled water
- funnel
- Stopper
- 1 x Red alcohol thermometer
- Tape

Set Up

1. Clearly label the sample container with Project ID, time, location, your name and sampling commencement date.
2. Place stopper and clean funnel on the sample container
3. Place bottle and funnel on a secure surface ensuring the top of the funnel is horizontal.
4. Ensure all relevant data and comments are recorded on Dust Monitoring worksheet i.e.: temp, weather conditions, It is also important to note any contamination by extraneous material including vegetation, bird droppings, insects, etc.

Sample Collection

1. Carefully remove the sample bottle and funnel from it's position (be careful of spiders, etc.).
2. Wash down the inside surface of the funnel with approximately 50mL of distilled water into the sample bottle.
3. Remove the seal and funnel from the sample bottle, taking care not to break the neck of the funnel and immediately place a cap on the sample bottle.
4. Complete the labelling of the sampling period on the sample bottle by placing the date of collection on the bottle
5. Stow sample bottle in protective crate for transport back to laboratory.
6. Ensure all relevant data and comments are recorded on Dust Monitoring worksheet ie: temp, weather conditions

Records

1. Time
2. Date
3. Location (COORDINATES)
4. Temperature
5. Weather conditions - Fine (F), Overcast (O), Rain (R), Windy (W)
6. Reference to the standard AS3580.10.1-2003