



TECHNICAL DATASHEET

Airborne Particulate Matter

Airborne Particulate Matter, PM10 - Air monitoring

Airborne Particulates can originate from a range of natural sources, including burning of Volcanoes and general weather induced land erosion, to manmade source, such as burning of fossil fuels or industrial processes.

BACKGROUND

Directive 2008/50/EC on ambient air quality and cleaner air for Europe sets the parameters specific to the assessment of ambient concentration levels of particulate matter; particulate matter smaller than about 10 µm (micrometers), can settle in the bronchi and lungs and cause health problems. European Standard BS EN 12341:2014 describes a standard method for determining the PM10 or mass concentrations of suspended particulate matter in ambient air by sampling the particulate matter on filters and weighing them by means of a balance. The measurement of airborne particulates is essential to demonstrate legal environmental compliance and for the purpose of health, safety and environmental risk management. The data obtained forms a key element of a site's management and control actions.

The laws of physics mean that the smaller and lighter the airborne particles are the longer they will stay in the air. Larger particles tend to settle to the ground by gravimetric force in a matter of hours whereas smaller particles can stay in the air days to weeks. The size of the particle is one of the main determinants of where in the respiratory tract the particle will come to rest when inhaled. Generally, larger particles are filtered in the nose and throat. Particulate matter which is less than 10 micrometers can settle in the Bronchi and Lungs and should be considered as Hazardous to Human Health.

Although the 10micrometer size is commonly accepted by regulatory authorities as the particle size that is considered to increase the risk to Human Health. Particles smaller than 10 micrometer (PM10) can pass the body's natural defences in the throat and nasal cavity and enter the Bronchioles or Alveoli of the Lungs.

ANALYSIS

Ambient air is passed through a size-selective inlet at a known, constant flow rate. The relevant PM fraction is collected on a filter for a known period of nominally 24 h. The mass of the PM material is determined by weighing the filter at pre-specified, constant conditions before and after collection of the particulate matter.

Filters are prepared by the laboratory before issue and are dried upon receipt at the laboratory to remove moisture. Clinical transportation conditions are recommended to eliminate accidental particulate contamination. Sampling by trained operatives is essential for the generation of reliable data.

References:

- BS EN 12341:2014 Ambient air — Standard gravimetric measurement method for the determination of the PM10 or PM2,5 mass concentration of suspended particulate matter
- Region 4: Laboratory and Field Operations – PM 2.5 (2008).PM 2.5 Objectives and History. U.S. Environmental Protection Agency.

IN ADDITION WE OFFER THE FOLLOWING ACCREDITED ANALYSIS

- **Inhalable dust**
- **Dust deposition rate**
- **Asbestos fibres in air**



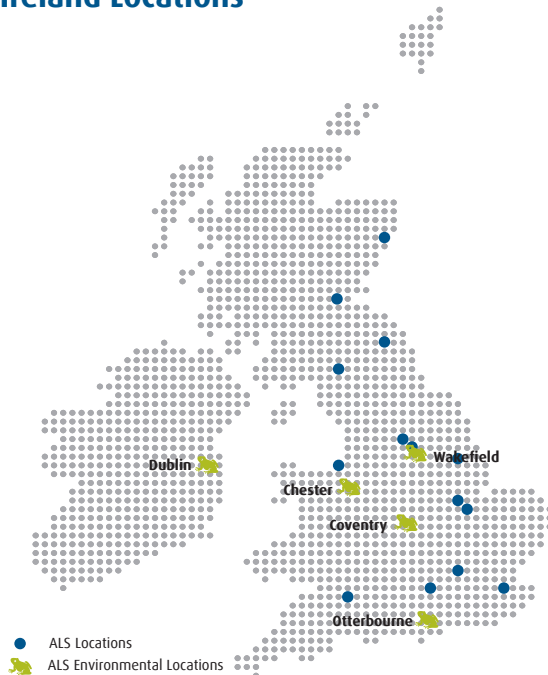
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ALS Service Overview

UK and Ireland Locations



Quality

Providing customers with UKAS ISO 17025:2005, MCERTS and DWTS accredited data from our laboratories across the UK. We participate in a broad range of Proficiency Testing schemes and hold a DEFRA import licence for soils.

Did you know that?

We are able to provide a broad range of additional services to help with your sampling including:

- Internal refrigerated and tracked courier network
- National portfolio of drop-off locations
- Pre-Registration of samples via our "Pre-Reg" system
- Dedicated customer service advisor
- Online reporting via our WebTrieve system

Contaminated Land

We understand the time pressures of large scale Remediation and Brownfield projects and are a member of the AGS. Our Coventry laboratory utilises state of the art analytical equipment with the back-up of our sister laboratories across Europe to ensure that we deliver your projects on time every time.

Waste Management

By working closely with some of the largest companies in this sector we are able to offer unrivalled analytical and administration services to ensure that your samples are processed swiftly and in line with the UKAS Deviating Sample Guidance.

Legionella and Microbiology

Being members of the Legionella Control Association (LCA) we understand the emphasis placed on laboratory analysis for the Control of Legionella. With 3 methods for testing Legionella (including rapid PCR) and an understanding and appreciation the implications of ACoP L8, HSG 274 and HTM04-01 we are your ideal analytical partner for all of your water hygiene monitoring requirements.

Drinking Water

We are one of only a handful of commercial laboratories to have a dedicated Drinking Water Testing Specification (DWTS) accredited laboratory, based in Wakefield, Yorkshire. We are able to supply analysis to the Public and Private Drinking Water Regulations.



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