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STATUTORY INSTRUMENTS

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**2010 No. 1001**

**The Air Quality Standards Regulations 2010**

**PART 2**

**Assessment of ambient air quality**

**CHAPTER 3**

Arsenic, cadmium, nickel, mercury, benzo(a)pyrene and other polycyclic aromatic hydrocarbons

**Assessment thresholds**

**10.**—(1) The Secretary of State must classify each zone according to whether or not the upper and lower assessment thresholds specified in Section I of Annex II to Directive [2004/107/EC](#) are exceeded in relation to arsenic, cadmium, nickel and benzo(a)pyrene.

(2) The Secretary of State must review the classification of zones in paragraph (1) every five years, and must do so more frequently than every five years if there are significant changes in the activities which may affect levels of the pollutants referred to in paragraph (1) in ambient air.

(3) When classifying zones in accordance with assessment thresholds, the Secretary of State must comply with Section II of Annex II to Directive [2004/107/EC](#).

**Assessment criteria**

**11.**—(1) The Secretary of State must assess concentrations of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air in all zones.

(2) In zones where the levels of arsenic, cadmium, nickel and benzo(a)pyrene are above the upper assessment threshold referred to in regulation 10, measurement is mandatory but may be supplemented by modelling techniques to provide an adequate level of information on ambient air quality.

(3) In zones where the levels of those pollutants are between the upper and lower assessment thresholds referred to in regulation 10, measurement is mandatory but may be supplemented by indicative measurements as referred to in Section I of Annex IV to Directive [2004/107/EC](#) or modelling, or both.

(4) In zones where the levels of those pollutants are below the lower assessment thresholds, modelling or objective estimation techniques may be used instead of measurement.

**Data quality objectives**

**12.** When assessing levels of arsenic, cadmium, nickel, benzo(a)pyrene, other polycyclic aromatic hydrocarbons or gaseous mercury, the Secretary of State must apply the data quality objectives and other standards contained in Annex IV to Directive [2004/107/EC](#).

### Location and number of sampling points

13. The location and number of sampling points for the assessment of arsenic, cadmium, nickel and benzo(a)pyrene must be determined in accordance with Annex III to Directive [2004/107/EC](#).

### Monitoring of polycyclic aromatic hydrocarbons

14.—(1) The Secretary of State must monitor concentrations of other relevant polycyclic aromatic hydrocarbons in addition to benzo(a)pyrene as the Secretary of State thinks fit, including at least the following—

- (a) benzo(a)anthracene,
- (b) benzo(b)fluoranthene,
- (c) benzo(j)fluoranthene,
- (d) benzo(k)fluoranthene,
- (e) indeno(1,2,3-cd)pyrene,
- (f) dibenz(a,h)anthracene.

(2) Monitoring sites must be located together with sampling points for benzo(a)pyrene.

(3) Monitoring sites must be selected so that geographical variations and long term trends in the concentrations of polycyclic aromatic hydrocarbons can be identified.

(4) Monitoring sites must be selected in accordance with the criteria in Sections I to III of Annex III to Directive [2004/107/EC](#).

### Background monitoring

15.—(1) The Secretary of State must operate background sampling points to provide indicative measurements of—

- (a) concentrations of—
  - (i) arsenic, cadmium, nickel and benzo(a)pyrene,
  - (ii) the polycyclic aromatic hydrocarbons in paragraph (1) of regulation 14,
  - (iii) total gaseous mercury.
- (b) total depositions of—
  - (i) arsenic, cadmium, nickel and benzo(a)pyrene within the PM<sub>10</sub> fraction;
  - (ii) the polycyclic aromatic hydrocarbons in paragraph (1) of regulation 14,
  - (iii) mercury.

(2) For the purposes of paragraph (1) the Secretary of State must ensure that—

- (a) at least one sampling point is installed for every 100,000 km<sup>2</sup>; and
- (b) each sampling point is located in accordance with Annex III to Directive [2004/107/EC](#).

(3) In this Regulation “total gaseous mercury” means elemental mercury vapour (Hg<sup>0</sup>) and reactive gaseous mercury, that is, water-soluble mercury species with sufficiently high vapour pressure to exist in the gas phase.

### Reference methods for sampling and analysis

16. Measurements of arsenic, cadmium, mercury, nickel, benzo(a)pyrene and other polycyclic aromatic hydrocarbons in ambient air and deposition of those pollutants must be made in accordance with the reference measurement methods set out in Annex V to Directive [2004/107/EC](#).