

natural contribution, WSS: Assessment of winter sanding and salting, ERT: Exposure reduction target, ECO: Exposure concentration obligation;

² No up-to-date data is to be made available for NAT and WSS which are not environmental objective as such.

(C) Pollutants with monitoring requirements

Legal references:

Directive 2008/50/EC, Article 2:

'pollutant' shall mean any substance present in ambient air and likely to have harmful effects on human health and/or the environment as a whole;

(i) Pollutants with monitoring requirements referred to in Directive 2004/107/EC and 2008/50/EC

A complete list of pollutants compared with Airbase list is published by EEA at URL:

<http://dd.eionet.europa.eu/vocabulary/aq/pollutant/view>

while in Table 6 the list of pollutants as described in 2008/50/EC is presented.

Table 6 Pollutants with monitoring requirements as described in 2011/850/EU

Airbase code	Pollutant formula	Pollutant name	Measurement unit
<i>Gaseous inorganic pollutants</i>			
1	SO ₂	Sulphur dioxide	µg/m ³
8	NO ₂	Nitrogen dioxide	µg/m ³
9	NOx ¹	Nitrogen oxides	µg/m ³
7	O ₃	Ozone	µg/m ³
10	CO	Carbon monoxide	mg/m ³
<i>Particulate Matter (PM)</i>			
5	PM ₁₀	PM ₁₀	µg/m ³
6001	PM _{2.5}	PM _{2.5}	µg/m ³
<i>PM_{2.5} Speciation</i>			
1047	SO ₄ ²⁻ in PM _{2.5}	Sulphate in PM _{2.5}	µg/m ³
1046	NO ₃ ⁻ in PM _{2.5}	Nitrate in PM _{2.5}	µg/m ³
1045	NH ₄ ⁺ in PM _{2.5}	Ammonium in PM _{2.5}	µg/m ³
1771	elem. C in PM _{2.5}	Elemental Carbon in PM _{2.5}	µg/m ³
1772	org. C in PM _{2.5}	Organic Carbon in PM _{2.5}	µg/m ³
1629	Ca ²⁺ in PM _{2.5}	Calcium in PM _{2.5}	µg/m ³
1659	Mg ²⁺ in PM _{2.5}	Magnesium in PM _{2.5}	µg/m ³
1657	K ⁺ in PM _{2.5}	Potassium in PM _{2.5}	µg/m ³
1668	Na ⁺ in PM _{2.5}	Sodium in PM _{2.5}	µg/m ³
1631	Cl ⁻ in PM _{2.5}	Chloride in PM _{2.5}	µg/m ³
<i>Heavy Metals</i>			
5012	Pb	Lead in PM ₁₀	µg/m ³
5014	Cd	Cadmium in PM ₁₀	ng/m ³
5018	As	Arsenic in PM ₁₀	ng/m ³

Airbase code	Pollutant formula	Pollutant name	Measurement unit
5015	Ni	Nickel in PM ₁₀	ng/m ³
<i>Heavy Metals Deposition</i>			
7012	Pb deposition	wet/total Pb deposition	µg /(m ² .day)
7014	Cd deposition	wet/total Cd deposition	µg /m ² .day)
7018	As deposition	wet/total As deposition	µg /(m ² .day)
7015	Ni deposition	wet/total Ni deposition	µg /(m ² .day)
7013	Hg deposition	wet/total Hg deposition	µg /(m ² .day)
<i>Mercury</i>			
4013	Metallic gaseous Hg	elemental gaseous Mercury	ng/m ³
4813	Total gaseous Hg	Total gaseous Hg	ng/m ³
653	Reactive gaseous Hg	reactive gaseous Mercury	ng/m ³
5013	Particulate Hg	particulate Mercury	ng/m ³
<i>Polycyclic Aromatic Hydrocarbons</i>			
5029	B(a)P	Benzo(a)pyrene in PM ₁₀	ng/m ³
5610	Benzo(a)anthracene	Benzo(a)anthracene in PM ₁₀	ng/m ³
5617	Benzo(b)fluoranthene	Benzo(b)fluoranthene in PM ₁₀	ng/m ³
5759	Benzo(j)fluoranthene	Benzo(j)fluoranthene in PM ₁₀	ng/m ³
5626	Benzo(k)fluoranthene	Benzo(k)fluoranthene in PM ₁₀	ng/m ³
5655	Indeno(1,2,3,-cd)pyrene	Indeno(1,2,3,-cd)pyrene in PM ₁₀	ng/m ³
5419	Dibenzo(a,h)anthracene	Dibenzo(a,h)anthracene in PM ₁₀	ng/m ³
<i>Polycyclic Aromatic Hydrocarbons Deposition</i>			
7029	B(a)P	Benzo(a)pyrene deposition	µg /(m ² .day)
611	Benzo(a)anthracene	Benzo(a)anthracene deposition	µg /(m ² .day)
618	Benzo(b)fluoranthene	Benzo(b)fluoranthene deposition	µg /(m ² .day)
760	Benzo(j)fluoranthene	Benzo(j)fluoranthene deposition	µg /(m ² .day)
627	Benzo(k)fluoranthene	Benzo(k)fluoranthene deposition	µg /(m ² .day)
656	Indeno(1,2,3,-cd)pyrene	Indeno(1,2,3,-cd)pyrene deposition	µg /(m ² .day)
7419	Dibenzo(a,h)anthracene	Dibenzo(a,h)anthracene deposition	µg /(m ² .day)
<i>Volatile Organic Components</i>			
20	C ₆ H ₆	Benzene	µg/m ³
428	C ₂ H ₆	Ethane	µg/m ³
430	C ₂ H ₄	Ethene (ethylene)	µg/m ³
432	HC≡CH	Ethyne (acetylene)	µg/m ³
503	H ₃ C-CH ₂ -CH ₃	Propane	µg/m ³
505	CH ₂ =CH-CH ₃	Propene	µg/m ³
394	H ₃ C-CH ₂ -CH ₂ -CH ₃	n-butane	µg/m ³
447	H ₃ C-CH(CH ₃) ₂	2-methylpropane (i-butane)	µg/m ³
6005	H ₂ C=CH-CH ₂ -CH ₃	1-butene	µg/m ³
6006	H ₃ C-CH=CH-CH ₃	trans-2-butene	µg/m ³
6007	H ₃ C-CH=CH-CH ₃	cis-2-butene	µg/m ³
24	CH ₂ =CH-CH=CH ₂	1,3-butadiene	µg/m ³
486	H ₃ C-(CH ₂) ₃ -CH ₃	n-pentane	µg/m ³
450	H ₃ C-CH ₂ -CH(CH ₃) ₂	2-methylbutane (i-pentane)	µg/m ³
6008	H ₂ C=CH-CH ₂ -CH ₂ -CH ₃	1-pentene	µg/m ³
6009	H ₃ C-HC=CH-CH ₂ -CH ₃	2-pentenenes	µg/m ³
451	CH ₂ =CH-C(CH ₃)=CH ₂	2-methyl-1,3-butadiene (isoprene)	µg/m ³
443	C ₆ H ₁₄	n-hexane	µg/m ³
316	(CH ₃) ₂ -CH-CH ₂ -CH ₂ -CH ₃	2-methylpentane (i-hexane)	µg/m ³
441	C ₇ H ₁₆	n-heptane	µg/m ³
475	C ₈ H ₁₈	n-octane	µg/m ³

Airbase code	Pollutant formula	Pollutant name	Measurement unit
449	$(\text{CH}_3)_3\text{-C-CH}_2\text{-CH-(CH}_3)_2$	2,2,4-trimethylpentane (i-octane)	$\mu\text{g/m}^3$
21	$\text{C}_6\text{H}_5\text{-CH}_3$	Toluene	$\mu\text{g/m}^3$
431	$\text{C}_6\text{H}_5\text{-C}_2\text{H}_5$	Ethyl benzene	$\mu\text{g/m}^3$
464	$\text{m,p-C}_6\text{H}_4(\text{CH}_3)_2$	m,p-xylene	$\mu\text{g/m}^3$
482	$\text{o-C}_6\text{H}_4\text{-(CH}_3)_2$	o-xylene	$\mu\text{g/m}^3$
6011	$\text{C}_6\text{H}_3(\text{CH}_3)_3$	1,2,4-trimethylbenzene	$\mu\text{g/m}^3$
6012	$\text{C}_6\text{H}_3(\text{CH}_3)_3$	1,2,3-trimethylbenzene	$\mu\text{g/m}^3$
6013	$\text{C}_6\text{H}_3(\text{CH}_3)_3$	1,3,5-trimethylbenzene	$\mu\text{g/m}^3$
32	THC(NM)	total non-methane hydrocarbons	$\mu\text{g/m}^3$
25	HCHO	Methanal (formaldehyde)	$\mu\text{g/m}^3$

¹ NO_x or the sum of NO and NO₂ measured at the same monitoring site can be reported. To be reported as $\mu\text{g NO}_2/\text{m}^3$.

(ii) Pollutants not listed in Directive 2004/107/EC and 2008/50/EC

Legal reference:

Decision 2011/850/EU - ANNEX I (C) provides:

a list including further pollutants on which Member States shall have reciprocal data exchange, as available, which is kept by the European Environment Agency and is made available at the portal mentioned in the summary.

The complete up-to-date list of pollutants (RDF data model) is published by the EEA at:

<http://dd.eionet.europa.eu/vocabulary/aq/pollutant/view>

(iii) Units of Measurement

Legal reference: Decision 2011/850/EU - ANNEX I , (B) and (C). The measurement units are presented in table (B) "Environmental objectives and reporting metrics" and Table (C) "Pollutants with monitoring requirements" of Annex I of Decision 2011/850/EU.

Table 6 above, and the complete list of pollutants compared with the Airbase list published by the EEA (below), contain also the units of measurement to be used:

<http://dd.eionet.europa.eu/vocabulary/aq/observationunit/view>