

## AirBase version 7 data products on EEA data service

David Simoens, EEA, February 2013

### 1. Introduction

AirBase is a public air quality database containing air quality monitoring information for more than 35 countries throughout Europe. The list of countries included in AirBase is available as Annex A. The complete list of available components is given as Annex B. AirBase version 7 data products are available through the EEA data service at:

<http://www.eea.europa.eu/data-and-maps/data/airbase-the-european-air-quality-database-7>

General AirBase meta-information and links to further information on legal background (Eol decision) and annual data collection process are available at the indicated URL. The objective of the present document is not to repeat information available elsewhere but to describe the most relevant technical details of AirBase data products in order to facilitate their usage.

In case of any questions related to AirBase data products, please contact: [david.simoens@eea.europa.eu](mailto:david.simoens@eea.europa.eu)

### 2. What's new in AirBase version 7 data products?

Some changes in comparison with AirBase version 6 data products:

- Availability of the latest air quality data from the Eol2012 delivery (including data for 2011).
- New statistics based on 2 days and 3 days measurements (statistics\_average\_group='2day' or '3day'). These are only available for Germany.
- Twenty nine new component codes compared to AirBase version 6.

component_code	component_caption	component_name
71	CO2	Carbon dioxide (air)
391	Black Carbon	black_carbon (aerosol)
425	N2O	dinitrogenoxide (air)
659	Mg++	magnesium (aerosol)
668	Na+	sodium (aerosol)
728	Vanadium	vanadium (precip)
763	Dibenzo(ah)anthracene	Dibenzo(ah)anthracene (air+aerosol)
1012	Pb in PM2.5	Lead in PM2.5 (aerosol)
1014	Cd in PM2.5	Cadmium in PM2.5 (aerosol)
1015	Ni in PM2.5	Nickel in PM2.5 (aerosol)
1018	As in PM2.5	Arsenic in PM2.5 (aerosol)
1063	Zn in PM2.5	Zinc in PM2.5 (aerosol)
2016	Cr	Chromium (precip)
2064	Co	Cobalt (precip)
3012	Pb in TSP	Lead in TSP (aerosol)
3014	Cd in TSP	Cadmium in TSP (aerosol)
3015	Ni in TSP	Nickel in TSP (aerosol)
3018	As in TSP	Arsenic in TSP (aerosol)
5045	NH4+ in PM10	Ammonium in PM10 (aerosol)
5046	NO3- in PM10	Nitrate in PM10 (aerosol)
5047	SO42- in PM10	sulphate in PM10 (aerosol)
5629	Ca2+ in PM10	calcium in PM10 (aerosol)
5631	Cl- in PM10	chloride in PM10 (aerosol)
5657	K+ in PM10	potassium in PM10 (aerosol)
5659	Mg2+ in PM10	magnesium in PM10 (aerosol)
5668	Na+ in PM10	sodium in PM10 (aerosol)
5771	EC in PM10	Elemental carbon in PM10 (aerosol)
5772	OC in PM10	Organic carbon in PM10 (aerosol)
7407	Chrysene + Triphenylene	chrysene_triphenylene (precip+dry_dep)

### 3. European data set

#### a) Data available in CSV format

##### AirBase\_v7\_stations.csv

Table with meta-information on AirBase stations (8 405 records). Station identifier and primary key for this table is: station\_european\_code. The information covers, among others: station\_name, station\_local\_code, station\_altitude, type\_of\_station, station\_type\_of\_area and station co-ordinates.

##### AirBase\_v7\_statistics.csv

Table with annual statistics calculated from AirBase data (3 010 162 records). Relevant fields with statistical information are: statistic\_name; statistic\_value; statistics\_percentage\_valid and statistics\_number\_valid.

The primary key for this table is the combination of station\_european\_code, component\_code, measurement\_european\_group\_code, statistics\_year, statistic\_name, statistics\_average\_group. The latter field describes the data type, on which the statistics are based. The majority of statistics (>95%) is based on hourly or daily data, or on daily maximum (dymax) values. A smaller number of statistics is available for the following statistics\_average groups: 2day, 3day, 2week, 2month, 3month, 4week, month, var (i.e. variable), week and year.

A 1-to-many relationship between station and statistics tables can be established by using the station identifier: station\_european\_code.

A 1-to-many relationship between statistics and measurement\_configuration tables can be established by using the fields station\_european\_code, component\_code and measurement\_european\_group\_code.

##### AirBase\_v7\_measurement\_configurations.csv

Table with measurement configurations (55 992 records), describing the conditions under which a component is measured at the station. The information covers, among others: measurement\_technique\_principle, measurement\_equipment, measurement\_start\_date, measurement\_automatic, sampling\_time\_unit, integration\_time\_unit, calibration\_frequency and calibration\_method.

The primary key for this table is the combination of station\_european\_code, component\_code and measurement\_european\_code.

#### Technical details of the CSV format

The above tables are available as UTF-8 encoded text files. Field delimiter is a tab character (U+0009), records end with carriage return + line feed characters (U+000D, U+000A). A header row with field names is always included. Numerical values use the dot as decimal separator. There is no qualifier for string values.

#### b) Data available in XML format

##### AirBase\_v7\_xmldata.zip:

This zip archive contains 1 XML file per country with meta-information on networks, stations and measurement configurations. The XML files also include all statistical values. A description of the document structure in AirBase XML files including a list of legal elements and attributes is available in form of a XML schema (XSD), the schema is declared within each XML files and can be found at: <http://acm.eionet.europa.eu/schemas/airbase/airbase20100623.xsd>

All tables mentioned in section 3a) have been directly generated from the XML files. Data extraction has been done by using XSLT (Extensible Stylesheet Language Transformations). The XSLT stylesheet that has been used for extracting statistical values (i.e. for generating AirBase\_v7\_statistics.csv) is given in Annex C. Another option for extracting data from the XML files is to use the Excel macros as available on [ETC/ACC website](#). More information on how to extract data from the XML files can be made available on demand.

##### AirBase\_v7\_stations.kmz:

This KMZ archive shows AirBase stations locations and characteristics as station\_european\_code, station\_local\_code, station name, station\_start\_date, station\_end\_date, type\_of\_station, station\_type\_of\_area. Stations are categorized by country within separate folders. The KMZ file can be open in many earth browser applications as for example Google Earth.

#### 4. Data by country (including raw data)

This section on EEA data service contains one zip archive per country with data in CSV and XML format, as explained in section 2. Country data files have been generated by splitting the European data sets into “slices” for individual countries. There is no other difference between country data and European data sets.

The country zip archives also include raw data files. These are organised in text files, each one representing 1 time series of data. All necessary meta-information about the time series is included in the file name, e.g.:

FR240130000700100hour.1-12-1999.31-12-2011

Position 1 – 7 station\_european\_code (here: FR24013)  
Position 8 – 12 component\_code (here: 00007, i.e. Ozone)  
Position 13 – 17 measurement\_european\_group\_code (here: 00100)  
Position 18 until first dot: data type (here: hour)  
followed by start date and end date of the time series

Data types in raw data file names correspond to the statistics\_average\_group values as used in the statistics tables, (see section 3a).

Raw data files are tab-delimited text files. The general format of hourly and daily raw data files is as follows:

Date Value1 Flag1 Value2 Flag2 Value3 Flag3 Value4 Flag4 ..... ValueN FlagN

Hourly data (data type: hour and hour8)

The date in column 1 identifies the calendar day to which the record relates. Measurement values 1...24 and quality flags 1...24 in columns 2-49 correspond to the hours of that date. Value 1 is understood to represent the measurements during the first hour of the day (i.e.: 00:00-00:59), and so on.

Raw data files with data type hour8 contain running 8-hour means calculated from the corresponding hourly data. Their format is identical to hourly data, with 24 values and 24 flags per day. However, any hour8 value represents the mean of hourly values in the preceding 8-hour period. E.g. hour8 value 10 is based on hourly values 3...10 of the same day, the averaging period for hour8 value 1 starts on 17:00H of the preceding day.

Daily data (data type: day and dymax)

The date in column 1 identifies the calendar month to which the record relates. Measurement values 1...31 and quality flags 1...31 in columns 2-63 correspond to the days of that month. All records have 31 values and 31 flags. For months with less than 31 days, the records are filled with invalid data.

Raw data files with data type dymax contain daily maximum values, based on running 8-hour means (see above). Both hour8 and dymax data files are only available for ozone and CO.

Quality flags in raw data

Flag values indicate the quality of the preceding measurement value. A quality flag value > 0 indicates valid measurement data. A quality flag <= 0 indicates invalid or missing data.

## Annex A: Country codes, names and share in AirBase statistic data

code	country_name	%data	#components
AL	Albania	0.0%	7
AT	Austria	7.3%	32
BA	Bosnia and Herzegovina	0.1%	8
BE	Belgium	3.8%	71
BG	Bulgaria	0.6%	22
CH	Switzerland	1.8%	19
CY	Cyprus	0.1%	42
CZ	Czech Republic	3.5%	19
DE	Germany	22.5%	75
DK	Denmark	0.7%	50
EE	Estonia	0.3%	14
ES	Spain	14.4%	78
FI	Finland	0.9%	66
FR	France	10.9%	17
GB	United Kingdom	6.4%	107
GR	Greece	0.9%	15
HR	Croatia	0.1%	9
HU	Hungary	0.6%	40
IE	Ireland	0.4%	52
IS	Iceland	0.2%	18
IT	Italy	11.4%	35
LI	Liechtenstein	0.0%	5
LT	Lithuania	0.4%	57
LU	Luxembourg	0.2%	17
LV	Latvia	0.2%	43
ME	Montenegro	0.0%	7
MK	Macedonia - FYR of	0.5%	9
MT	Malta	0.1%	34
NL	Netherlands	3.0%	105
NO	Norway	0.5%	19
PL	Poland	3.1%	71
PT	Portugal	1.9%	30
RO	Romania	1.2%	22
RS	Serbia	0.2%	9
SE	Sweden	0.6%	30
SI	Slovenia	0.4%	31
SK	Slovakia	0.7%	15
TR	Turkey	0.4%	2

N.B.

code country\_iso\_code as used in AirBase

%data relative share of country data in AirBase data, 0.0 means less than 0.05%

#components number of components available in AirBase data

Andorra is missing in the above table, as no measurement data are available. However, a small number of air quality stations are registered in AirBase for this country (3 stations).

## Annex B: AirBase component codes, names, units and relative share in Airbase statistic data

code	component_name	measurement_unit	FWD	%data	#country
1	Sulphur dioxide (air)	µg/m3	yes	16.4%	36
3	Strong acidity (air)	µg SO2/m3	no	0.4%	7
4	Total suspended particulates (aerosol)	µg/m3	yes	1.6%	17
5	Particulate matter < 10 µm (aerosol)	µg/m3	yes	9.6%	38
6	Black smoke (air)	µg/m3	yes	0.7%	15
7	Ozone (air)	µg/m3	yes	19.5%	36
8	Nitrogen dioxide (air)	µg/m3	yes	16.2%	37
9	Nitrogen oxides (air)	µg NO2/m3	yes	8.5%	37
10	Carbon monoxide (air)	mg/m3	yes	8.1%	36
11	Hydrogen sulphide (air)	µg/m3	no	0.1%	7
12	Lead (aerosol)	µg/m3	yes	0.5%	23
13	Mercury (aerosol)	ng/m3	yes	0.0%	6
14	Cadmium (aerosol)	ng/m3	yes	0.3%	23
15	Nickel (aerosol)	ng/m3	yes	0.3%	22
16	Chromium (aerosol)	ng/m3	no	0.0%	3
17	Manganese (aerosol)	ng/m3	no	0.0%	3
18	Arsenic (aerosol)	ng/m3	yes	0.3%	21
19	Carbon disulphide (air)	µg/m3	no	0.0%	1
20	Benzene (air)	µg/m3	yes	1.5%	34
21	Toluene (air)	µg/m3	no	0.6%	23
22	Styrene (air)	µg/m3	no	0.0%	2
24	1.3 Butadiene (air)	µg/m3	no	0.1%	6
25	Formaldehyde (air)	µg/m3	no	0.0%	2
26	Trichloroethylene (air)	µg/m3	no	0.0%	1
27	Tetrachloroethylene (air)	µg/m3	no	0.0%	1
30	Polyaromatic hydrocarbons (air+aerosol)	ng/m3	no	0.0%	1
32	Total non-methane hydrocarbons (air)	µg C/m3	no	0.1%	6
33	Total volatile organic compounds (air)	µg/m3	no	0.1%	4
34	Peroxyacetyl nitrate (air)	µg/m3	no	0.0%	1
35	Ammonia (air)	µg/m3	no	0.1%	7
36	Wet nitrogen deposition (flux)	mg N/m2.m	no	0.0%	1
37	Wet sulphur deposition (flux)	mg S/m2.m	no	0.0%	2
38	Nitrogen monoxide (air)	µg/m3	no	7.8%	29
39	Hydrogen chloride (air)	µg/m3	no	0.0%	1
40	Hydrogen fluoride (air)	µg/m3	no	0.0%	1
41	Methane (air)	µg/m3	no	0.1%	5
45	Particulate ammonium (aerosol)	µg/m3	no	0.0%	2
46	Particulate nitrate (aerosol)	µg/m3	no	0.0%	2
47	Particulate sulphate (aerosol)	µg/m3	no	0.0%	8
48	Selenium (aerosol)	ng/m3	no	0.0%	1
49	Vanadium (aerosol)	ng/m3	no	0.0%	2
51	HC C2-C6(excl. AROM. & CHLH) (air+aerosol)	µg/m3	no	0.0%	1
63	Zinc (aerosol)	ng/m3	no	0.0%	3

N.B.

code component\_code as used in AirBase

FWD = yes mandatory pollutant, component\_FWD as used in AirBase

%data relative share of component in AirBase data, 0.0 means less than 0.05%

#countries number of countries reporting this component

The component names in this table include both, the actual pollutant name and the matrix in which the concentrations are measured.

**Annex B: AirBase component codes, names, units and relative share in Airbase statistic data (cont'd)**

code	component_name	measurement_unit	FWD	%data	#country
65	Iron (aerosol)	ng/m3	no	0.0%	2
67	Total nitrate (air+aerosol)	µg N/m3	no	0.0%	2
68	Total ammonium (air+aerosol)	µg N/m3	no	0.0%	2
69	Radioactivity ( )		no	0.0%	1
71	Carbon dioxide (air)	ppmv	no	0.0%	1
73	Copper (aerosol)	ng/m3	no	0.0%	2
316	i-Hexane (2-methylpentane) (air)	µg/m3	no	0.0%	8
323	N3methylpentane (air)	pptv	no	0.0%	1
351	acenaphthene (air+aerosol)	ng/m3	no	0.0%	4
352	acenaphthylene (air+aerosol)	ng/m3	no	0.0%	3
380	Benzo(b+j+k)fluoranthenes (air+aerosol)	ng/m3	no	0.0%	1
381	Benzo(e)pyrene (air+aerosol)	ng/m3	no	0.0%	1
391	black_carbon (aerosol)	µg/m3	no	0.0%	1
394	n-Butane (air)	µg/m3	no	0.1%	8
412	conductivity (precip)	uS/cm	no	0.0%	1
416	cyclohexane (air)	pptv	no	0.0%	1
425	dinitrogenoxide (air)	ppbv	no	0.0%	1
428	Ethane (air)	µg/m3	no	0.0%	7
430	Ethene (Ethylene) (air)	µg/m3	no	0.0%	6
431	Ethyl benzene (air)	µg/m3	no	0.2%	16
432	Ethyne (Acetylene) (air)	µg/m3	no	0.0%	5
435	fluorene (air+aerosol)	ng/m3	no	0.0%	4
441	n-Heptane (air)	µg/m3	no	0.1%	9
443	n-Hexane (air)	µg/m3	no	0.1%	9
447	i-Butane (2-methylpropane) (air)	µg/m3	no	0.0%	7
449	i-Octane (2,2,4-trimethylpentane) (air)	µg/m3	no	0.0%	7
450	i-Pentane (2-methylbutane) (air)	µg/m3	no	0.1%	9
451	Isoprene (2-methyl-1,3-butadiene) (air)	µg/m3	no	0.1%	7
464	m,p-Xylene (air)	µg/m3	no	0.2%	17
465	naphtalene (air+aerosol)	ng/m3	no	0.0%	3
475	n-Octane (air)	µg/m3	no	0.0%	8
482	o-Xylene (air)	µg/m3	no	0.2%	17
486	n-Pentane (air)	µg/m3	no	0.1%	10
503	Propane (air)	µg/m3	no	0.0%	7
505	Propene (air)	µg/m3	no	0.0%	6
520	sum_sulph_diox_sulphate (air+aerosol)	µg S/m3	no	0.0%	1
604	aluminium (aerosol)	ng/m3	no	0.0%	1
606	anthracene (air+aerosol)	ng/m3	no	0.0%	4
608	anthracene (precip+dry_dep)	µg/m2/day	no	0.0%	1
609	Benzo(a)anthracene (air+aerosol)	ng/m3	no	0.0%	3
611	Benzo(a)anthracene (precip+dry_dep)	µg/m2/day	no	0.0%	7
616	Benzo(b)fluoranthene (air+aerosol)	ng/m3	no	0.0%	2
618	Benzo(b)fluoranthene (precip+dry_dep)	µg/m2/day	no	0.0%	3
622	Benzo(ghi)perylene (air+aerosol)	ng/m3	no	0.0%	5
624	Benzo(ghi)perylene (precip+dry_dep)	µg/m2/day	no	0.0%	1
625	Benzo(k)fluoranthene (air+aerosol)	ng/m3	no	0.0%	2
627	Benzo(k)fluoranthene (precip+dry_dep)	µg/m2/day	no	0.0%	4
629	calcium (aerosol)	µg/m3	no	0.0%	1

**Annex B: AirBase component codes, names, units and relative share in Airbase statistic data (cont'd)**

code	component_name	measurement_unit	FWD	%data	#country
630	calcium (precip)	mg/l	no	0.0%	1
631	chloride (aerosol)	µg/m3	no	0.0%	1
632	chloride (precip)	mg/l	no	0.0%	1
643	fluoranthene (air+aerosol)	ng/m3	no	0.1%	5
645	fluoranthene (precip+dry_dep)	µg/m2/day	no	0.0%	1
648	acidity(H+) (precip)	ue H/l	no	0.0%	1
653	reactive_mercury (air+aerosol)	pg/m3	no	0.0%	1
654	indeno_123cd_pyrene (air+aerosol)	ng/m3	no	0.0%	2
656	indeno_123cd_pyrene (precip+dry_dep)	µg/m2/day	no	0.0%	7
658	potassium (precip)	mg/l	no	0.0%	1
659	magnesium (aerosol)	µg/m3	no	0.0%	1
660	magnesium (precip)	mg/l	no	0.0%	1
664	ammonium (precip)	mg N/l	no	0.0%	1
666	nitrate (precip)	mg N/l	no	0.0%	1
668	sodium (aerosol)	µg/m3	no	0.0%	1
669	sodium (precip)	mg/l	no	0.0%	1
673	PCB_114 (air+aerosol)	pg/m3	no	0.0%	1
674	PCB_118 (air+aerosol)	pg/m3	no	0.0%	1
677	PCB_138 (air+aerosol)	pg/m3	no	0.0%	1
679	PCB_141 (air+aerosol)	pg/m3	no	0.0%	1
680	PCB_153 (air+aerosol)	pg/m3	no	0.0%	1
683	PCB_157 (air+aerosol)	pg/m3	no	0.0%	1
684	PCB_167 (air+aerosol)	pg/m3	no	0.0%	1
685	PCB_170 (air+aerosol)	pg/m3	no	0.0%	1
686	PCB_180 (air+aerosol)	pg/m3	no	0.0%	1
689	PCB_183 (air+aerosol)	pg/m3	no	0.0%	1
690	PCB_187 (air+aerosol)	pg/m3	no	0.0%	1
691	PCB_189 (air+aerosol)	pg/m3	no	0.0%	1
692	PCB_194 (air+aerosol)	pg/m3	no	0.0%	1
695	PCB_28 (air+aerosol)	pg/m3	no	0.0%	1
701	PCB_52 (air+aerosol)	pg/m3	no	0.0%	1
706	PCB_74 (air+aerosol)	pg/m3	no	0.0%	1
707	PCB_99 (air+aerosol)	pg/m3	no	0.0%	1
709	PCB_123 (air+aerosol)	pg/m3	no	0.0%	1
712	phenanthrene (air+aerosol)	ng/m3	no	0.0%	4
714	phenanthrene (precip+dry_dep)	µg/m2/day	no	0.0%	1
715	pyrene (air+aerosol)	ng/m3	no	0.1%	4
717	pyrene (precip+dry_dep)	µg/m2/day	no	0.0%	1
719	sulphate (precip)	mg S/l	no	0.0%	1
728	vanadium (precip)	µg/l	no	0.0%	1
753	precipitation_amount (precip)	mm	no	0.0%	1
754	precipitation_amount_off (precip)	mm	no	0.0%	1
760	Benzo(j)fluoranthene (precip+dry_dep)	µg/m2/day	no	0.0%	3
762	Benzo(j)fluoranthene (air+aerosol)	ng/m3	no	0.0%	1
763	Dibenzo(ah)anthracene (air+aerosol)	ng/m3	no	0.0%	1
1012	Lead in PM2.5 (aerosol)	µg/m3	no	0.0%	2
1014	Cadmium in PM2.5 (aerosol)	µg/m3	no	0.0%	2
1015	Nickel in PM2.5 (aerosol)	µg/m3	no	0.0%	2

**Annex B: AirBase component codes, names, units and relative share in Airbase statistic data (cont'd)**

code	component_name	measurement_unit	FWD	%data	#country
1018	Arsenic in PM2.5 (aerosol)	µg/m3	no	0.0%	2
1029	Benzo(a)pyrene in PM2.5 (aerosol)	ng/m3	no	0.0%	2
1045	Ammonium in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1046	Nitrate in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1047	sulphate in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1063	Zinc in PM2.5 (aerosol)	µg/m3	no	0.0%	1
1629	calcium in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1631	chloride in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1657	potassium in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1659	magnesium in PM2.5 (aerosol)	µg/m3	no	0.0%	10
1668	sodium in PM2.5 (aerosol)	µg/m3	no	0.0%	9
1771	Elemental carbon in PM2.5 (aerosol)	µg/m3	no	0.0%	6
1772	Organic carbon in PM2.5 (aerosol)	µg/m3	no	0.0%	7
2012	Lead (precip)	µg/l	no	0.0%	1
2013	Mercury (precip)	ng/l	no	0.0%	3
2014	Cadmium (precip)	µg/l	no	0.0%	3
2015	Nickel (precip)	µg/l	no	0.0%	3
2016	Chromium (precip)	µg/l	no	0.0%	1
2018	Arsenic (precip)	µg/l	no	0.0%	3
2063	Zinc (precip)	µg/l	no	0.0%	1
2064	Cobalt (precip)	µg/l	no	0.0%	1
2065	Iron (precip)	µg/l	no	0.0%	1
2073	Copper (precip)	µg/l	no	0.0%	1
2076	acidity(pH) (precip)	pH units	no	0.0%	3
3012	Lead in TSP (aerosol)	µg/m3	no	0.1%	2
3014	Cadmium in TSP (aerosol)	ng/m3	no	0.1%	2
3015	Nickel in TSP (aerosol)	ng/m3	no	0.1%	2
3018	Arsenic in TSP (aerosol)	ng/m3	no	0.1%	2
4013	Mercury (air+aerosol)	ng/m3	no	0.0%	5
4330	PCB_105 (air+aerosol)	pg/m3	no	0.0%	1
4336	PCB_149 (air+aerosol)	pg/m3	no	0.0%	1
4339	PCB_156 (air+aerosol)	pg/m3	no	0.0%	1
4341	PCB_18 (air+aerosol)	pg/m3	no	0.0%	1
4347	PCB_31 (air+aerosol)	pg/m3	no	0.0%	1
4406	chrysene (air+aerosol)	ng/m3	no	0.1%	5
4813	Total gaseous mercury (air+aerosol)	ng/m3	no	0.0%	6
5012	Lead in PM10 (aerosol)	µg/m3	no	0.3%	10
5013	Mercury in PM10 (aerosol)	ng/m3	no	0.0%	1
5014	Cadmium in PM10 (aerosol)	ng/m3	no	0.3%	12
5015	Nickel in PM10 (aerosol)	ng/m3	no	0.3%	12
5018	Arsenic in PM10 (aerosol)	ng/m3	no	0.3%	12
5029	Benzo(a)pyrene in PM10 (aerosol)	ng/m3	no	0.3%	21
5045	Ammonium in PM10 (aerosol)	µg/m3	no	0.0%	1
5046	Nitrate in PM10 (aerosol)	µg/m3	no	0.0%	1
5047	sulphate in PM10 (aerosol)	µg/m3	no	0.0%	1
5129	Benzo(a)pyrene in PM10 (air+aerosol)	ng/m3	no	0.0%	2
5380	Benzo(b,j,k)fluoranthene in PM10 (aerosol)	ng/m3	no	0.0%	5
5419	Dibenzo(ah)anthracene in PM10 (aerosol)	ng/m3	no	0.1%	15



**Annex B: AirBase component codes, names, units and relative share in Airbase statistic data (cont'd)**

code	component_name	measurement_unit	FWD	%data	#country
5609	Benzo(a)anthracene in PM10 (air+aerosol)	ng/m3	no	0.0%	2
5610	Benzo(a)anthracene in PM10 (aerosol)	ng/m3	no	0.1%	16
5616	Benzo(b)fluoranthene in PM10 (air+aerosol)	ng/m3	no	0.0%	1
5617	Benzo(b)fluoranthene in PM10 (aerosol)	ng/m3	no	0.1%	11
5625	Benzo(k)fluoranthene in PM10 (air+aerosol)	ng/m3	no	0.0%	2
5626	Benzo(k)fluoranthene in PM10 (aerosol)	ng/m3	no	0.1%	13
5629	calcium in PM10 (aerosol)	µg/m3	no	0.0%	1
5631	chloride in PM10 (aerosol)	µg/m3	no	0.0%	1
5654	indeno_123cd_pyrene in PM10 (air+aerosol)	ng/m3	no	0.0%	3
5655	indeno_123cd_pyrene in PM10 (aerosol)	ng/m3	no	0.1%	15
5657	potassium in PM10 (aerosol)	µg/m3	no	0.0%	1
5659	magnesium in PM10 (aerosol)	µg/m3	no	0.0%	1
5668	sodium in PM10 (aerosol)	µg/m3	no	0.0%	1
5759	Benzo(j)fluoranthene in PM10 (aerosol)	ng/m3	no	0.0%	5
5762	Benzo(j)fluoranthene in PM10 (air+aerosol)	ng/m3	no	0.0%	2
5763	Dibenzo(ah)anthracene in PM10 (air+aerosol)	ng/m3	no	0.0%	2
5771	Elemental carbon in PM10 (aerosol)	µg/m3	no	0.0%	1
5772	Organic carbon in PM10 (aerosol)	µg/m3	no	0.0%	1
6001	Particulate matter < 2.5 µm (aerosol)	µg/m3	yes	1.2%	32
6002	Particulate matter < 1 µm (aerosol)	µg/m3	no	0.0%	4
6005	1-Butene (air)	µg/m3	no	0.1%	8
6006	trans-2-Butene (air)	µg/m3	no	0.1%	6
6007	cis-2-Butene (air)	µg/m3	no	0.1%	6
6008	1-Pentene (air)	µg/m3	no	0.0%	8
6009	2-Pentenes (air)	µg/m3	no	0.1%	7
6011	1,2,4-Trimethylbenzene (air)	µg/m3	no	0.0%	10
6012	1,2,3-Trimethylbenzene (air)	µg/m3	no	0.0%	9
6013	1,3,5-Trimethylbenzene (air)	µg/m3	no	0.0%	11
6015	Benzo(a)pyrene (air+aerosol)	ng/m3	no	0.1%	11
6380	Benzo(b,j,k)fluoranthene in PM10 (air+aerosol)	ng/m3	no	0.0%	1
7012	Lead (precip+dry_dep)	µg/m2/day	no	0.0%	2
7013	Mercury (precip+dry_dep)	µg/m2/day	no	0.0%	6
7014	Cadmium (precip+dry_dep)	µg/m2/day	no	0.1%	10
7015	Nickel (precip+dry_dep)	µg/m2/day	no	0.1%	10
7018	Arsenic (precip+dry_dep)	µg/m2/day	no	0.1%	10
7029	Benzo(a)pyrene (precip+dry_dep)	ng/m2/day	no	0.0%	8
7380	Benzo(b,j,k)fluoranthene (precip+dry_dep)	µg/m2/day	no	0.0%	4
7407	chrysene_triphenylene (precip+dry_dep)	ng/m2/day	no	0.0%	1
7419	Dibenzo(ah)anthracene (precip+dry_dep)	ng/m2/day	no	0.0%	6

## Annex C: XSLT Stylesheet for extracting annual statistics from XML files

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="1.0">
<!-- Stylesheet created by David Simoens EEA, March 2009 -->
<!-- Variable definition for tab delimited output -->
<xsl:variable name="newline" select="'&#x0A;'"/>
<xsl:variable name="tab" select="'&#x09;'"/>
<xsl:output method="text" encoding="UTF-8"/>

<xsl:template match="/">

  <!-- Write out field names -->
  <xsl:text>station_european_code</xsl:text>          <xsl:value-of select="$tab"/>
  <xsl:text>component_code</xsl:text>              <xsl:value-of select="$tab"/>
  <xsl:text>component_name</xsl:text>              <xsl:value-of select="$tab"/>
  <xsl:text>component_caption</xsl:text>          <xsl:value-of select="$tab"/>
  <xsl:text>measurement_unit</xsl:text>           <xsl:value-of select="$tab"/>
  <xsl:text>measurement_european_group_code</xsl:text> <xsl:value-of select="$tab"/>
  <xsl:text>statistics_period</xsl:text>          <xsl:value-of select="$tab"/>
  <xsl:text>statistics_year</xsl:text>            <xsl:value-of select="$tab"/>
  <xsl:text>statistics_average_group</xsl:text>    <xsl:value-of select="$tab"/>
  <xsl:text>statistic_shortcode</xsl:text>        <xsl:value-of select="$tab"/>
  <xsl:text>statistic_name</xsl:text>             <xsl:value-of select="$tab"/>
  <xsl:text>statistic_value</xsl:text>           <xsl:value-of select="$tab"/>
  <xsl:text>statistics_percentage_valid</xsl:text> <xsl:value-of select="$tab"/>
  <xsl:text>statistics_number_valid</xsl:text>    <xsl:value-of select="$tab"/>
  <xsl:text>statistics_calculated</xsl:text>      <xsl:value-of select="$newline"/>

  <xsl:apply-templates select="airbase/country/station/measurement_configuration"/>

</xsl:template>

<!-- Loop through the measurement configurations -->
<xsl:template match="measurement_configuration">
  <xsl:param name="station_european_code" select="../station_european_code"/>
  <xsl:param name="component_code" select="component_code"/>
  <xsl:param name="component_name" select="component_name"/>
  <xsl:param name="component_caption" select="component_caption"/>
  <xsl:param name="measurement_unit" select="measurement_unit"/>
  <xsl:param name="measurement_european_group_code" select="measurement_info/measurement_european_code"/>

  <!-- Loop through the statistic results -->
  <xsl:for-each select="statistics/statistics_average_group/statistic_set/statistic_result">
    <xsl:value-of select="$station_european_code"/>          <xsl:value-of select="$tab"/>
    <xsl:value-of select="$component_code"/>              <xsl:value-of select="$tab"/>
    <xsl:value-of select="$component_name"/>              <xsl:value-of select="$tab"/>
    <xsl:value-of select="$component_caption"/>          <xsl:value-of select="$tab"/>
    <xsl:value-of select="$measurement_unit"/>           <xsl:value-of select="$tab"/>
    <xsl:value-of select="$measurement_european_group_code"/> <xsl:value-of select="$tab"/>
    <xsl:value-of select="../statistics_period"/>        <xsl:value-of select="$tab"/>
    <xsl:value-of select="../../../../Year"/>          <xsl:value-of select="$tab"/>
    <xsl:value-of select="../../../../@value"/>        <xsl:value-of select="$tab"/>
    <xsl:value-of select="statistic_shortcode"/>        <xsl:value-of select="$tab"/>
    <xsl:value-of select="statistic_name"/>             <xsl:value-of select="$tab"/>
    <xsl:value-of select="statistic_value"/>           <xsl:value-of select="$tab"/>
    <xsl:value-of select="../statistics_percentage_valid"/> <xsl:value-of select="$tab"/>
    <xsl:value-of select="../statistics_number_valid"/>  <xsl:value-of select="$tab"/>
    <xsl:value-of select="../statistics_calculated"/>    <xsl:value-of select="$newline"/>
  </xsl:for-each>

</xsl:template>
</xsl:stylesheet>
```