A Big Earth Data Platform for Three Poles

**The concentration dataset of persistent organic pollutants in the atmosphere, lake water and fish bodies in Namco (2012-2014)**

1、Description

The concentration data set of persistent organic pollutants in the atmosphere, lake water and fish bodies in Namco from 2012 to 2014 includes concentration time series of atmospheric gaseous organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs), atmospheric gaseous polycyclic aromatic hydrocarbons (PAHs), atmospheric particulate PAHs, dissolved persistent organic pollutants (POPs) in lake water, POPs in suspended particles of lake water and POPs in bodies of Gymnocypris namensis.
The contents of the data set are all measured data.
(1) The atmospheric samples were collected from the Integrated Observation and Research Station of Multisphere in Namco by the atmospheric active sampler. The flow rate of the sampler is 60 L min-1, which collects data every other day. One sample is generated every half month, and the sampling volume is approximately 600 m³. Each sample includes a glass fiber filter (GFF, 0.45 μm, Whatman) that adsorbs particulate POPs and a polyurethane foam (PUF, 7.5 x 6 cm) that collects gaseous POPs.
(2) Fifteen sampling points were selected along Namco to collect surface lake water samples at a water depth of 0-1 m and with a volume of 200 L. The total suspended particulates are obtained by filtering the water samples with a 0.7 μm GFF membrane, and then the dissolved POPs in the water are collected using a solid phase extraction column packed with XAD-2.
(3) Gymnocypris namensis is the most widely distributed fish in Namco. A total of 35 samples of different sizes were collected, and the concentration of POPs in the back muscle samples was analyzed.
Each medium sample was prepared and analyzed by the Key Laboratory of Tibetan Environment Changes and Land Surface Processes of CAS. The sample preparation steps include Soxhlet extraction, silica-alumina column purification, removal of macromolecular impurities by a GPC column, concentration and constant volume. The analytical test instrument was a gas chromatography-mass spectrometer (GC-MS, Finnigan-Trace GC/PolarisQ) manufactured by American Thermoelectric Corporation. The column separating OCPs and PCBs was a CP-Sil 8CB capillary column (50 m × 0.25 mm × 0.25 μm), and the column separating PAHs was a DB-5MS capillary column (60 m × 0.25 mm × 0.25 μm).
Sampling and laboratory analysis procedures followed strict quality control measures with lab blanks and field blanks. The detection limit of the compound is the average of the concentration of the corresponding compound in the field blank plus 3 times the standard deviation; if the compound is not detected in the field blank, the signal-to-noise ratio, 10 times the lowest concentration of the working curve, will be considered as the detection limit. Data below the detection limit are considered undetected and labeled as BDL; data marked in italics are detected by 1/2 times the detection limit. The recovery of PAHs is between 65% and 92%, the recovery of OCPs is between 64% and 112%, and the sample concentration is not corrected using recovery.

2、Keywords

Theme：Organic pollutants,Surface Water,Atmospheric Trace Gase,Lakes,Environment Pollution and Control
Discipline：Atmosphere,Terrestrial Surface,Human-nature Relationship
Places：Tibet, Namco
Time：2012-2014

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.049MB

4.Data format：EXCEL

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：31.0 | - |
| west：90.0 | - | east：91.0 |
| - | south：30.0 | - |

5、Time frame:2012-09-08 08:00:00+00:00--2014-10-07 08:00:00+00:00

6、Reference method

References to data:

WANG Xiaoping. The concentration dataset of persistent organic pollutants in the atmosphere, lake water and fish bodies in Namco (2012-2014). A Big Earth Data Platform for Three Poles, doi:10.11888/AtmosphericEnvironment.tpe.249467.file2018

References to articles:

Ren, J., Wang, X.P., Wang, C.F., Gong, P., &Yao, T.D. (2017). Atmospheric processes of persistent organic pollutants over a remote lake of the central Tibetan Plateau: Implications for regional cycling. Atmospheric Chemistry and Physics, 17(2), 1401-1415.

Ren, J., Wang, X.P., Wang, C.F., Gong, P., Wang, X.R., &Yao, T.D. (2017). Biomagnification of Persistent Organic Pollutants along a High-Altitude Aquatic Food Chain in the Tibetan Plateau: Processes and Mechanisms. Environmental Pollution, 220, 636-643.

7、Supporting project information

8、Data resource provider

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