

Mercury pollution surveys in Riga (Latvia)

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It is well known that mercury and its compounds are highly toxic to humans, ecosystems and wildlife. Although mercury is released by natural sources, additional releases from anthropogenic sources, like coal burning and use in products, have led to significant increase in environmental exposure and deposition. Mercury is widely distributed, but monitoring and control of its pollution is a relatively new activity.

We performed mercury pollution surveys at several districts of Riga (Capital of Latvia), using Zeeman atomic absorption spectrometer RA 915+. The concentration of mercury was sampled in the air above the subject of interest. The measurements have been performed mainly from the driving car. GPS was used to enable measurement results assignment to particular measurement places. Resulting setup gives a possibility to establish a digitalized pollution database for different geographic coordinates in different times.

From results of surveys one can see that background atmospheric mercury concentration in Riga generally does not exceed 5 ng/m^3 , but there are some places with increased mercury pollution that need particular attention and cleanup. Examples for such surveys will be shown.

There are many commonly used objects that contain mercury, for instance, mercury lamps, switches, and mercury thermometers. Disposed objects usually are thrown into trashcans, and afterwards transported to the waste dump. Measurements were performed for a number of dustcarts returning to the waste dump at Getlini. Increased mercury concentration was found in every 5th or 6th cart. From measurements performed in the waste dump we can conclude that mercury pollution in the household waste is a really existing problem.

The studies of mercury pollution cases draw attention to the fact that the pollution in Latvia is mainly caused by inconsiderate actions of humans.

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