

COMPARATIVE ANALYSIS OF MERCURY DETERMINATION IN RAW MATERIALS AND PRODUCTION OF HEAVY INDUSTRY ENTERPRISES*Tselik M. S.*Donetsk National Technical University, Pokrovsk, Ukraine
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For quite some time in Ukraine and near abroad, one of the most serious and obvious pollution of the environment is the emissions of metallurgical enterprises. A significant number of metallurgical enterprises, whose emissions have a negative effect on the entire environment, are in the Donetsk region. The most dangerous components of emissions of metallurgical enterprises are highly toxic mercury compounds. Since, during enrichment of coal, Hg is almost completely converted to the gas phase, analysis of the Hg content in coals is the primary task for environmental protection. To reduce the harmful impact of emissions of metallurgical enterprises on the environment, careful monitoring of contained toxins in the raw materials and products of these enterprises is needed, which proves the relevance of this master's work.

Object of the master's study: raw materials and products of metallurgical and by-product coke industries, fuel, coke, ores, fluxes, etc.

The subject of the master's scientific research: mercury and its compounds in the composition of fuel, ores, fluxes, etc.

In connection with this, the objectives of the master's work can be formulated as follows:

1. Study and systematization of theoretical studies on the chemical properties of mercury, study of the processes of mercury compounds entering the emissions of metallurgical enterprises.

2. Investigation of the possibility of using the method of atomic-absorption determination of mercury content in raw materials and products of blast-furnace production.

3. Comparative analysis of experimental data on the content of mercury in raw materials and production products for 5 years.

At enrichment of coals in concentrates 50–60 % Hg passes. Mercury in concentrates is represented by organic Hg_{org} and micromineral pyrite – Hg_p. These two forms of mercury are dominant; their ratio determines the distribution of Hg in coal.

With large volumes of blast-furnace production, this can be a significant source of mercury releases to the environment.

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