

Industrial Emissions and Maximum Allowable Concentrations (MAC) in Georgia and EU Countries

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At the current stage, against the background of accelerated technological progress and growing social demands, the scale of industrial activities has significantly increased. Consequently, its impact on the natural environment has intensified, which ultimately has a negative effect on the health of living organisms, including humans.

This paper discusses the main sources of industrial emissions and their impact on atmospheric air, water, and soil. Particular attention is paid to the level of atmospheric air pollution. As a result of industrial sectors such as energy, chemical industry, metallurgy, and cement production, dust, toxic gases, and heavy metals are released into the environment, posing a threat to human health and ecosystem stability.

Special emphasis is placed on the system of **Maximum Allowable Concentrations (MAC)**, which defines the maximum safe levels of harmful substances and represents one of the primary regulatory mechanisms for environmental protection. The paper analyzes Georgian technical regulations and the European Union's **Industrial Emissions Directive (IED)**, which mandates that enterprises use the **Best Available Techniques (BAT)** to reduce emissions.

The study shows that strict control of MACs and the implementation of modern standards are essential for the prevention of industrial pollution, the protection of public health, and the assurance of sustainable development.