

UDC 504.75.05**ENVIRONMENTAL SAFETY OF MOTOR TRANSPORT WHEN USING FUELS AND LUBRICANTS****Alimova Zebo Xamidullaevna***(professor)***Yangiyeva Ismigul Ilhomovna***(student) Tashkent State Transport University, Tashkent,*

Abstract: *Road transport is a powerful source of environmental pollution, and the amount of emissions into the atmosphere from it is determined by the size of the fleet and its technical condition. Therefore, the necessary conditions for assessing environmental damage when handling waste from road transport operations are the tasks of reliably determining the mass of waste generated. In the modern world, the state of the natural environment is becoming an important factor of social progress. This is due to the fact that the local human influence on nature becomes a global influence on the resources and components of the entire biosphere.*

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Keywords: *environmental safety, road transport, sources of pollution, amount of emissions, hydrocarbons environment.*

The interaction of society and nature is one of the main problems in the history of the development of human civilization. Pollution of the air basin is also a serious problem. It should be noted that from the point of view of the environmental damage caused, motor transport leads in all types of negative impacts. The analysis of the share of automobile traffic in the total environmental damage to the environment shows that 95% of air pollution, 49.5% of noise generation and climate impact - 68%.

During the years of transition to a market economy in the Republic of Uzbekistan, the number of used cars has increased almost 3 times and today amounts to more than 3 million units. The increase in the fleet of mobile and stationary equipment has led to a sharp increase in the consumption of oil and its refined products. It is known that road transport is the cause of one of the most global problems of the 21st century – 65-70% of air pollution of residential areas with harmful chemicals. It accounts for about 70% of atmospheric pollution. More than 80% of air pollution in Tashkent, Samarkand, Bucharest, Ferghana falls on road transport.

It should be noted that during the operation of road transport, various harmful and toxic chemicals and compounds are released into the air. According to statistics, there are currently more than 1.2 billion cars in motion in the countries of the world. It has also been investigated that the gases emitted into the air from the car contain 200 different types of toxic chemicals. One car annually absorbs an average of more than 4

tons of oxygen from the atmosphere, while emitting about 800 kg of carbon monoxide and 40 kg of nitrogen oxides with exhaust gases.

In the modern world, the state of the natural environment is becoming an important factor of social progress. This is due to the fact that the local human influence on nature becomes a global influence on the resources and components of the entire biosphere. As a result, it affects the foundations of civilization, as natural resources run out, environmental pollution increases. In this regard, the rational use of natural resources is of particular importance.

In modern conditions, road transport is the main consumer of refined petroleum products. More than 20% of the total oil production is spent on obtaining fuels and lubricants for motor vehicles. In addition, up to 80% of emissions of harmful substances into the atmosphere are accounted for by road transport. It is also important that toxic gases released from motor transport are mainly deposited in the atmosphere at the height of human growth.

In total, more than 250 types of toxic gases are released from motor transport. If one light car drives an average of 15,000 km per year, it consumes 4.5 tons of oxygen and emits 530 kg of carbon monoxide, 97 kg of nitrogen oxide and more than 10 kg of rubber into the atmosphere. Cars, on the one hand, absorb oxygen from the atmosphere, which is necessary for living organisms, and on the other, emit various toxic gases into the environment. One car absorbs more than 4 tons of oxygen from the atmosphere per year, while releasing about 800 kg of carbon monoxide, 40 kg of nitrogen oxide, and almost 200 kg of hydrocarbons of various appearance. Existing methods for determining the mass of waste generation do not take into account the residual resource of motor vehicles that have been decommissioned, the improvement of vehicle designs and the types of fuels and lubricants used.

The main pollutants of the atmosphere – sulfur dioxide, nitrogen oxides and volatile hydrocarbon compounds in 40-60% of cases get into the air from the use of oil and petroleum products. Carbon monoxide is highly toxic, colorless and odorless and is formed during incomplete combustion of fuel when there is not enough oxygen in the fuel. The amount of carbon dioxide emitted into the air reaches 250-500 mg /m³ and persists for 4 months. If the content in the air is more than 0.01%, the living organism is significantly poisoned. When inhaled, it binds to hemoglobin in the blood and displaces oxygen from it, which leads to oxygen deficiency and affects the central nervous system. Chronic poisoning is manifested by headache, tinnitus, difficulty breathing, general fainting. Oxides of sulfur and nitrogen when combined with water, which is always present in the human body, form acids that adversely affect the respiratory organs.

Nitrogen oxides-NO, NO₂ – are formed in the presence of free oxygen. Nitrogen oxides cause inflammation of the mucous membrane of the eye, lungs, leads to non-healing ulcers in the cardiovascular system.

The sulfur contained in the fuel is converted into sulfur dioxide and hydrogen sulfide during combustion. However, during the combustion of fuel, all sulfur-

containing compounds turn into aggressive ones, forming sulfur oxides (SO_2 and SO_3). The sulfur oxide then combines with water vapor in the atmosphere to form sulfuric acid (H_2SO_4). At high temperatures, sulfur oxides in the gaseous state can directly interact with metals. Under these conditions, gas corrosion appears. The rate of gas corrosion increases with increasing temperature, so, for example, when the temperature rises from 700 to 900°C, the corrosion of steel in the SO_2 medium increases by 12 times. Gas corrosion is exposed to parts located in the high temperature zone: the piston head, the upper compression piston rings, the upper part of the cylinder liners, exhaust valves.

Atmospheric electrochemical corrosion occurs in the zone of low temperatures, where condensation of moisture with the formation of sulfurous and sulfuric acids is possible. This acid not only poisons the human body, but also corrodes parts of fuel supply devices, the surface of cylinders, valves and their slots. Sulfur dioxide causes inflammation of the hematopoietic organs – bone marrow and liver, disrupting carbohydrate metabolism. Sulfur dioxide forms acid and is the main component of acid rain.

Even in industrially developed and ecologically civilized Western Europe, up to 16 million tons of CO_2 , 8 million tons of NO_x and up to 10 million tons of volatile hydrocarbons are emitted into the atmosphere annually. Oxides of sulfur and nitrogen when combined with water, which is always present in the human body, form acids that adversely affect the respiratory organs. Carbon monoxide combines with blood hemoglobin to form carboxyhemoglobin, which is 200 times more active than oxygen. Not only does the reacting hemoglobin not participate in the delivery of oxygen to the cells of the body, it also interferes with the realization of oxygen carried by the rest of the hemoglobin.

In addition, unburned hydrocarbons, aldehydes, carcinogenic substances and other components are released into the atmosphere in addition to exhaust gases. Their composition is given in the table.

That is why almost all promising environmentally friendly cars are designed for alternative fuels. Thus, road transport is a powerful source of environmental pollution, and the amount of emissions into the atmosphere from it is determined by the size of the fleet and its technical condition. The level of damage caused to the environment in the processes of collection, transportation and processing of treated motor oils, worn tires, treated lead-acid batteries formed during the operation of motor vehicles has been adopted as a criterion of environmental safety in the handling of waste from the operation of motor vehicles. The analysis of experience in the development of the environmental protection management mechanism allowed typologizing methods for assessing the environmental safety of waste management processes of road transport operation.

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