

Environmental Safety in use Flammable Lubricants

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ABSTRACT

The problem of improving environmental safety in the motor transport complex is becoming more and more urgent. Automobile 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 vehicle fleet and its technical condition. Therefore, the necessary conditions for assessing the harm to the environment when handling waste from road transport operations are the tasks of reliable determination of the mass of generated waste.

This article discusses the issue of environmental safety of road transport when using fuels and lubricants. Mass motorization necessitates increased attention to addressing issues related to ensuring the safe consequences of the use of fuel and lubricants.

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

The problems of environmental safety of road transport are an integral part of the environmental safety of the country. The importance and severity of this problem is growing every year. One of the important directions for solving this problem is to reduce the toxicity of exhaust gases by vehicles in operation.

In the Republic of Uzbekistan, over the years of transition to a market economy, the number of operated mobile equipment has increased approximately 3 times and currently amounts to more than 3 million units. As a result of the increase in the fleet of mobile and stationary equipment, it has led to a sharp increase in the consumption of oil and its products.

In modern conditions, road transport is the main consumer of oil refined products. To obtain fuels and lubricants for motor vehicles, more than 20% of the total oil production is consumed. In addition, road transport accounts for up to 80% of all emissions of harmful substances into the atmosphere.

In the modern world, the state of the natural environment is becoming an important factor in social development. This is due to the development of the local human influence on nature into a global influence on the resources and components of the entire biosphere. As a result, the foundations of civilization are affected, since natural resources are being depleted, and there is increased pollution of the environment. In this regard, rational use of natural resources acquires special relevance. Air pollution is also a serious problem.

One car annually absorbs from the atmosphere on average more than 4 tons of oxygen, while emitting with exhaust gases about 800 kg of carbon monoxide, 40 kg of nitrogen oxides and almost 200 kg of various carbons.

The content of the main toxic substances in the exhaust gases of gasoline engines.

	Toxic substances	Content
1.	Carbon monoxide%	to 10,0
2.	Carbons %	to 3,0
3.	Nitrogen oxides %	to 0,5
4.	Aldehydes %	0,03
5.	Sootr/m ³	to 0,04
6.	Benzapirene mcg/m	to 20
7.	Sulfurdioxide %	0,008

The problem of interaction between society and nature is one of the fundamental ones in the history of the development of human civilization.

It should be noted that in terms of environmental damage, vehicles are leading in all types of negative impact: air charging - 95%, noise - 49.5%, climate impact - 68%.

Mass motorization necessitates increased attention to addressing issues related to ensuring the safe consequences of the use of operating materials. Most of these materials are man-made products, and it is not surprising that they can be harmful to human health as well as harm to the environment. According to the definition: the environment is a set of natural, economic, social conditions and factors that affect a person as a biological being.

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The necessary conditions for assessing the harm to the environment when handling waste from road transport operations are the tasks of reliable determination of the mass of generated waste.

The existing methods for determining the mass of waste generation do not take into account the residual resource of motor vehicles that have gone out of service, the improvement of the design of vehicles and the types of fuels and lubricants used. The main air pollutants - sulfur dioxide, nitrogen oxides and volatile hydrocarbon compounds in 40-60% of cases get into the air from the use of oil and oil products.

Oxides of sulfur and nitrogen, when combined with water, which is always present in the human body, form acids that have a detrimental effect on the respiratory system. Carbon monoxide combines with blood hemoglobin to form carboxy-hemoglobin, which is 200 times more active than oxygen. Not only does the reacted 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.

When using catalytic converters - neutralizers, the entire volume of the exhaust gas passes through the neutralizer, which performs the following functions: afterburning, as a result of which the amount of CH and CO is reduced; catalytic oxidation (platinum, palladium) at a temperature of 480°C, as a result of which harmful impurities are converted into H₂O (steam) and CO₂. In some schemes, catalytic converters are combined with an air supply system to the exhaust manifold, which improves the quality of cleaning. When converting MV and CO, the neutralizer is called two-stage. Additional exposure to NO_x (using a catalyst based on rhodium compounds) decomposes this compound into oxygen and nitrogen. Such converters are called three-stage and practically provide a harmless

composition of the exhaust gases. NO_x conversion is only possible if the mixture is controlled.

The combustion of fuels containing high molecular weight hydrocarbons results in the formation of aromatic hydrocarbons. Some of them are carcinogenic: benz (α) -pyrene, 9, 10-dimethylanthracene, benz (α) - anthracene, dibenz (α, h) -anthracene, etc.

When gasoline is burned, toxic lead compounds are formed - lead bromide, lead phosphate. With the exhaust gases, 37–85% of the lead contained in leaded gasoline enters the air. The rest of the lead is deposited on the cylinder walls of the engine and in the exhaust tract. Even in industrially developed and ecologically civilized Western Europe, up to 16 million tons of SO₂, 8 million tons of Nox and up to 10 million tons of volatiles are emitted into the atmosphere every year.

All of the above suggests that even with the exclusion of oil derivatives entering the atmosphere, water and soil, great harm is done to humans and the environment due to exhaust gases.

Environmental problems associated with the use of traditional motor fuel in vehicle engines are relevant not only for Uzbekistan, but also for all countries of the world. In many countries of the world, strict requirements for the greening of vehicles have been adopted. Currently, many foreign engine-building companies have taken a course towards solving the problem of achieving zero toxicity of exhaust gases. Many years of experience show that this can be achieved only if alternative (non-oil) types of motor fuel are used. 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 this, it is determined by the size of the vehicle fleet and its technical condition.

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