

CLASSIFICATION OF GASOLINE FUELS OF THE "PREMIUM CLASS"

Nowadays in Ukraine there are a lot of grades of gasoline fuels of premium class. Appearance and development of such fuels is characterized by such reasons as: increase service life of engines, improvement of fuel properties, decrease fuel consumption, decrease harmful emissions in atmosphere.

The distribution of gasoline fuels of premium class in Ukraine is carried out by such companies as: ТНК ("Золотой Гепард"), Shell, Лукойл, ОККО, WOG. They realize such type or brands of gasoline fuels as: ТНК – А 95 "Premium", Shell – 95 V- power, Лукойл – А 95 Euro and ЭКТО, WOG – 95 Mustang, ОККО – 95 Pulls

The improved properties of such fuel types, basing on quality passports of each product. Octane number (OC) characterizes detonation stability of fuel. OC must not be less than 95 by research method and 85 by motor method.

Amount of sulfur. Great amount of sulfur can cause corrosion of fuel supply system. The amount of sulfur, must not be greater than 0.001%

Presence of olefins and aromatic hydrocarbons. Aromatic hydrocarbons influence on exhaust toxicity and smoke. As for olefins, they characterize period of fuel storage. The amount of olefins must not be greater than 18% and aromatic hydrocarbons 35%.

Benzene. It creates deposit formations in the combustion chamber, the great amount of benzene leads to increase of unburned portions of hydrocarbons in combustion gases. Benzene concentration in gasoline fuels must not exceed 1%.

All fuel types, except Shell 95 V – power, use additives of German concern BASF, in order to increase power of engine, provide stability of engine operation, decrease of fuel consumption, decrease emissions into the atmosphere, prevent deposits formation.

As for 95V–power, Shell uses Friction Modification Technology, to decrease friction between cylinder walls and increase engine power. All results are in the table 1.

Table 1

| OC | A95Premium | 95Vpower | 95 Pulls | 95 Mustang | A95Euro |
|--------------------------|------------|----------|----------|------------|---------|
| research meth. | 95.1 | 95.1 | 95.8 | 95.6 | 95 |
| motor meth. | 85 | 85 | 85 | 85.4 | 85 |
| Sulfur, % | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| Olefins, % | 9.1 | 10 | 12.5 | 9.1 | 9.1 |
| Aromatic hydrocarbons, % | 22.5 | 31.4 | 30.8 | 31.3 | 34.5 |
| Benzene, % | 0.68 | 0.22 | 0.18 | 0.48 | 0.85 |
| Cost, hrn | 10.50 | 11.30 | 11.29 | 11.40 | 10.49 |

After comparison of certain types of gasoline fuels of premium class, we can make the conclusion, that properties of all fuels are improved then in the standard. The better fuel of the premium class is 95 Pulls, because its properties are better in comparison with other types and the price conforms to the quality of fuel.