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PREVENTION OF GUM DEVELOPMENT AND THE LIKE IN MOTOR FUEL

Herman P. Lankelma, Cleveland, Ohio, assignor to The Standard Oil Company (Ohio), Cleveland, Ohio, a corporation of Ohio

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The prevention of gum-formation in cracked motor fuel presents many peculiarities. Relatively few agents have been found having sufficient inhibitory activity to be of passable utility, and of these some have defects along one line and others have defects in other respects. The matter is made further difficult by complications introduced by the prevalent more or less prolonged exposure of the gasoline to sunlight in glass-reservoir curb pumps and the increasing usage in gasoline of various chemicals for reducing detonation, and for fancy artificial coloring. I have now found that certain aromatic organic compounds including alkyl structure afford very excellent results even in cases where the normal behavior of the motor fuel is disturbed by presence of other chemicals which effect gum sensitivity.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described, and particularly pointed out in the claims, the following description setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principle of the invention may be employed.

In the motor fuel to be treated, there is incorporated a small amount of a polyhydroxy compound including a benzene ring having a carbon ring joined directly thereto by non-benzenoid linking, such as benzyl 1,2 dihydroxy benzene, dibenzyl 1,2 dihydroxy benzene, diphenyl-methyl 1,2 dihydroxy benzene, triphenyl-methyl 1,2 dihydroxy benzene, triphenyl-methyl trihydroxy benzene in which two hydroxyls are in 1,2 position, and analogues having hydrocarbon radicles on the benzene ring (ethyl, propyl, butyl, and such groups), tolyl-methyl 1,2 dihydroxy benzene.

In general, the amount of the inhibitor agent may range from 0.0005 to 0.01 per cent. It may be dissolved directly in the motor fuel, or where desired may be first dissolved in a solvent, such as alcohol, acetone, etc., and thus be incorporated.

As an example: With a cracked gasoline there is incorporated benzyl 1,2 dihydroxy benzene at the rate of 0.1 g. per gallon.

As another example: Triphenyl methyl 1,2 dihydroxy benzene is admixed with a cracked gasoline at the rate of 0.1 g. per gallon.

As another example: Triphenyl methyl 1,2,3 trihydroxy benzene is incorporated in a cracked gasoline in similar amount.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided however, the features stated in any of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A process of stabilizing cracked motor fuel against gum development and the like, which comprises incorporating with the motor fuel a small amount of a polyhydroxy benzene compound containing carbon, oxygen and hydrogen only and having the general formula $C_6H_{6-n}OH_mR$, the OH_m being hydroxyls in 1,2 or 1,2,3 positions and R being a cyclic hydrocarbon group from: benzyl, dibenzyl, diphenyl-methyl, triphenyl-methyl.

2. A process of stabilizing cracked motor fuel against gum development and the like, which comprises incorporating with the motor fuel a small amount of benzyl 1,2 dihydroxy benzene.

3. A process of stabilizing cracked motor fuel against gum development and the like, which comprises incorporating with the motor fuel a small amount of triphenyl-methyl trihydroxy benzene in which two hydroxyls are in 1,2 position.

4. A cracked motor fuel stabilized against gum development by addition of a small amount of a polyhydroxy benzene compound containing carbon, oxygen and hydrogen only and having the general formula $C_6H_{6-n}OH_mR$, the OH_m being hydroxyls in 1,2 or 1,2,3 positions and R being a cyclic hydrocarbon group from: benzyl, dibenzyl, diphenyl-methyl, triphenyl-methyl.

5. A cracked motor fuel stabilized against gum development by addition of a small amount of benzyl 1,2 dihydroxy benzene.

6. A cracked motor fuel stabilized against gum development by addition of a small amount of triphenyl-methyl trihydroxy benzene in which two hydroxyls are in 1,2 position.

HERMAN P. LANKELMA.