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UNITED STATES PATENT OFFICE

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REFINED VISCOUS HYDROCARBON OIL

No Drawing. Original application filed August 19, 1926, Serial No. 130,351. Divided and this application filed November 7, 1928, Serial No. 317,882. Renewed July 31, 1930.

This application is a division from Serial No. 130,351, filed August 19, 1926.

In the use of highly refined viscous hydrocarbon oils (from which substantially all asphaltic constituents have been removed, for example, by treatment with strong or fuming sulphuric acid) for the lubrication of turbines and in similar uses, it has been found that they rapidly discolor, become increasingly acid and their tendency to emulsify increases. It has now been found that these defects in the use of such oils may be to a substantial extent remedied by the addition to such oils of very small proportions (in general, not more than 0.1%) of aromatic compounds in which a plurality of hydroxyl groups are attached to the ring. Among substances of this class which have been successfully employed for this purpose are pyrogallol, gallic acid, dibutylresorcinol and hydroquinone. Thus, in the case of a fuming acid treated white distillate oil of about 80 sec. Saybolt viscosity at 100° F. which, without the addition of such a substance, increased in acidity from 0.01 to 25 mgm. KOH equivalent per gram of oil in 100 hours and markedly decreased in demulsifiability, when oxygen was passed therethrough at a temperature of 100° C., the same oil to which 0.04% pyrogallol had been added showed no increase in acidity and no decrease in demulsifiability under like conditions. The addition of 0.002% gallic acid and of 0.05% dibutylresorcinol, under similar circumstances, prevented any but relatively slight changes in acidity and demulsifiability. Thus, the same oil containing 0.002% gallic acid showed an increase in acidity in 161 hours to only 2.5 mgm. KOH equivalent per gram of oil.

The proportions of the aromatic compounds added may be varied considerably. In general 0.1% or less is sufficient to produce a marked result.

The oils prepared in accordance with the present invention have the property of retaining their electrical resistivity to a high degree on aging.

I claim:

1. The method of preventing acid formation and increase of emulsifiability in use of highly refined viscous hydrocarbon oils, which comprises adding thereto a small proportion of an aromatic compound having a plurality of hydroxyl groups attached to the ring.

2. The method of preventing acid formation and increase of emulsifiability in use of highly refined viscous hydrocarbon oils, which comprises adding thereto up to 0.1% of an aromatic compound having a plurality of hydroxyl groups attached to the ring.

3. The method of preventing acid formation and increase of emulsifiability in use of highly refined viscous hydrocarbon oils, which comprises adding thereto a small proportion of pyrogallol.

4. The method of preventing acid formation and increase of emulsifiability in use of highly refined viscous hydrocarbon oils, which comprises adding thereto about 0.04% of pyrogallol.

5. A highly refined white viscous hydrocarbon oil free from asphaltic constituents and containing a small proportion of an aromatic compound having a plurality of hydroxyl groups attached to the ring.

6. A highly refined white viscous hydrocarbon oil free from asphaltic constituents and containing up to 0.1% of an aromatic compound having a plurality of hydroxyl groups attached to the ring.

7. A highly refined white viscous hydrocarbon oil free from asphaltic constituents and containing a small proportion of pyrogallol.

8. A highly refined white viscous hydrocarbon oil free from asphaltic constituents and containing about 0.04% of pyrogallol.

In witness whereof, I have hereunto set my hand this 29th day of October, 1928.

THOMAS H. ROGERS.