Patented June 12, 1934 1,962,564

UNITED STATES PATENT OFFICE

1,962,564

FLUORESCENT HYDROCARBON

Friedrich Kuhrmann and Otto Siebert, Dessau in Anhalt, Germany, assignors to I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Main, Germany

No Drawing. Application September 23, 1931, Serial No. 564,716. In Germany September 30, 1930

7 Claims. (Cl. 196—1)

Our present invention relates to a method of imparting a desired fluorescence to the commercial lubricating oils.

It is well known that it is desirable from a marketing point of view to impart a characteristic to these products, or to alter the genuine fluorescence of petroleum oils, since the trade has associated the fluorescence of an oil with quality.

We have found that certain bodies on solution will impart to the liquid a fluorescence without in any way deleteriously affecting the quality of the finished oil. We have discovered that very small amounts of aminophenylbenzthiazole, aminophenylbenzoxazole, or of derivatives thereof impart to the liquids in question a desired fluorescence. As such substances we enumerate, for instance, the following: the primuline bases as obtainable by heating paratoluidine or xylidine with sulfur, aminophenylbenzthiazoles, such as 2-(metaaminophenyl)-benzthiazole, 2-phenyl-5-aminobenzthiazole, or 2-phenyl-6-aminobenzoxazole, 2-(para-aminophenyl)-5-aminobenzoxazole, 2-(meta-aminophenyl)-5-aminobenzoxazole, 2-phenyl-5-amino-7-methylbenzoxazole, 2-phenyl-5-methyl-7-aminobenzoxazole, 2-(para-aminophenyl)-5-amino-7-methylbenzoxazole, 2-(meta-aminophenyl)-5-amino-7-methylbenzoxazole, 2-(para-chlorophenyl)-5-aminobenzoxazole, or 2-phenyl-6.6'-diaminodibenzoxazole.

It is obvious that other equivalent products likewise may be used. The quantities we add to the oils may be varied in certain limits, generally 0.01% is sufficient to obtain the desired effect.

A few simple comparative experiments should be made to determine the best kind of these products and the most suitable amount to employ with a particular oil.

The following example illustrates the invention.

Example.—100 liters of paraffine oil (boiling between 300 to 350° C.) are mixed with 500 ccm. of a solution of 5-aminophenylbenzoxazole (cf. Berichte der Deutschen Chemischen Gesellschaft, vol. 32, page 1427) in benzene of 1% strength. A bluish fluorescence is obtained in the oil.

In imparting a fluorescence to the oils in question, it is not necessary to use the substances enumerated above in a chemically pure state. The desired result is gained when using the raw products as obtained in their manufacture.

The compounds mentioned above do not show a fluorescence in each organic liquid and even when used with liquid hydrocarbons, a fluorescence is only gained when using the products in distinct proportions which, as stated above, generally are below 0.01%, and which easily are ascertainable in each case.

What we claim is:—

1. A process of imparting a desired fluorescence to lubricating oils, which comprises commingling the oil with a compound of the group consisting of aminophenylbenzylthiazoles and aminophenylbenzyloxazoles.

2. A process of imparting a desired fluorescence to lubricating oils, which comprises commingling the oil with a compound of the group consisting of aminophenylbenzylthiazoles and aminophenylbenzyloxazoles in an amount not surpassing 0.01%.

3. A process of imparting a desired fluorescence to lubricating oils, which comprises commingling the oil with the primuline bases in an amount not surpassing 0.01%.

4. A process of imparting a desired fluorescence to lubricating oils, which comprises commingling the oil with the primuline bases in addition with a solvent assistant.

5. Lubricating oils showing a distinct fluorescence and containing a compound of the group consisting of aminophenylbenzylthiazoles and aminophenylbenzyloxazoles.

6. Lubricating oils showing a distinct fluorescence and containing primuline bases.

7. Lubricating oils showing a distinct fluorescence and containing primuline bases in an amount not surpassing 0.01% and a hydrocarbon of the benzene series as a solvent assistant.

FRIEDRICH KUHRMANN.
OTTO SIEBERT.