

UNITED STATES PATENT OFFICE

MATTHEW D. MANN, JR., OF ROSELLE, NEW JERSEY, ASSIGNOR TO STANDARD OIL DEVELOPMENT COMPANY, A CORPORATION OF DELAWARE

STABLE MIXTURE OF PETROLEUM HYDROCARBONS AND SECONDARY ALCOHOLS

No Drawing.

Application filed July 9, 1929. Serial No. 377,078.

This invention relates to a composition of matter consisting of a stable mixture of petroleum hydrocarbon with one or more secondary alcohols, the mixture being obtained without the addition of any blending means other than that supplied by the secondary alcohol itself. The invention will be fully understood from the following description.

The properties or action of hydrocarbons for some uses are susceptible of modification and improvement by admixture of other components. In particular I have found that secondary alcohols are exceptionally valuable as modifying agents. These alcohols, hitherto very little known as to characteristics, when properly employed with liquid hydrocarbons found in petroleum, afford a range of new and useful solvents, paint and varnish thinners, cleaning and degreasing agents, motor fuels, etc.

Various of the secondary alcohols (singly or mixed) may be employed, depending upon the boiling point limitations and particular use in view, and similarly with the petroleum hydrocarbons. For some combinations the lower secondary alcohols should be especially dehydrated; in the case of secondary butyl and secondary amyl alcohols this may be simply accomplished by mixing the alcohol with a hydrocarbon, such as gasoline, and allowing a layer separation to occur, and then drawing off the alcohol and gasoline from the aqueous layer; but even this is unnecessary with the higher members. The extent to which the dehydration of the alcohol is carried either by the method as outlined or by any other desirable process depends upon the use to be made of the products. For most purposes, especially in the case of the lower secondary alcohols such as isopropyl and secondary butyl alcohols, a dehydration sufficient to produce a 95-98% alcohol is sufficient, but in some cases the dehydration should be carried out to produce a substantially anhydrous alcohol.

As an example, I may refer to secondary butyl alcohol and petroleum hydrocarbons of the gasoline range. The secondary butyl alcohol, substantially free from water preliminarily if desired, or a mixture of second-

ary alcohols in which secondary butyl is a large component, is mixed with the petroleum hydrocarbons of desired boiling point, but ordinarily preferably between 110° and 450° F. This forms a homogeneous composition in various proportions useful for many purposes. Although miscible in wide proportions, usually from about 5 to 50% of the secondary alcohol is most advantageous.

Beside the secondary alcohols mentioned above, I may use others also, particularly secondary hexyl alcohols. In general the secondary alcohol selected will have between 3 and 6 carbon atoms in the molecule.

While various petroleum hydrocarbons may be employed, I prefer gasoline on account of its general availability and cheapness. However, the principle of the invention is applicable to kerosene and heavier distillate oils derived from petroleum.

While in describing my invention I have referred to specific details, it will be understood that these are illustrative and in no sense limitative. On the contrary the invention is to be regarded as limited only as defined in the following claims, in which it is my intention to claim all inherent novelty as broadly as the prior art permits.

This application is a continuation in part of my copending application Ser. No. 566,881, filed June 8, 1922, now Patented 1,774,180, granted Aug. 26, 1930.

I claim:

1. A composition of matter consisting of liquid petroleum hydrocarbon and secondary alcohol.

2. A composition of matter consisting of liquid petroleum hydrocarbon and secondary alcohol containing between 3 and 6 carbon atoms in the molecule.

3. A composition of matter consisting of gasoline and secondary alcohol.

4. A composition of matter consisting of gasoline and secondary alcohol containing between 3 and 6 carbon atoms in the molecule.

MATTHEW D. MANN, JR.