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PROCESS OF TREATING MINERAL OILS.

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My invention relates to a process of treating mineral oils and may be applied both to crude mineral oil and its by-products, such as topped mineral oils and residues, also the distillates, such as kerosene, gasoline and the like, but is especially intended in the treatment of crude oil.

My invention has for its object to distill mineral oils and its products in the presence of a catalyzer which is highly efficient in converting the heavier hydrocarbons to lighter hydrocarbons, thus greatly increasing the yield of the lighter fractions. I have discovered that the addition of a small percentage of a metal hypochlorite to the mineral oil or the mineral oil product to be treated and subjecting the same to a cracking temperature will yield lighter hydrocarbon fractions greatly in excess of those now in use in the art.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the steps of the process hereinafter described and claimed.

The following is an example of a process carried out with Bakersfield, California, crude oil, which is of very low gravity, running as low as 10 degrees gravity. I add thereto from 5 to 10 percent of a hypochlorite of a metal, such as aluminium, zinc, sodium, potassium, magnesium, iron or copper, or a mixture of any two or more of them. The crude oil, before the addition of the metal hypochlorite, is preferably thoroughly dehydrated. If a small quantity of water remains in the oil a foaming or spitting will occur in the still, in which case it is recommended that paraffin or heavy paraffin oil be added, 3 to 10 percent being usually sufficient, depending upon the moisture present. In place of the pariffin or heavy paraffin oil, or in conjunction therewith, I may add from 10 to 40 percent of kerosene or distillate to the crude oil, for the same purpose, that is to prevent foaming of the heavy crude oil to be distilled. Of course, it will be understood, however, that the addition of the paraffin or paraffin oil or kerosene or distillate is not necessary when the crude oil is thoroughly dehydrated.

The temperature used in cracking the oil in the still may run from 230° to 650° F. and the operation may take place from one to two hours. I have obtained as much as 60 to 90 percent of the lighter fraction of the hydrocarbons from crude oil having a gravity of 10 by this treatment. Of the lighter fraction distilled over from 30 to 40 percent will constitute gasoline and the remainder kerosene or distillates, which are separated from each other by the usual methods.

My process is applicable, not only to crude oils, topped crude oils, and still residues, but also to lighter hydrocarbons like kerosene and distillates to convert them into lighter fractions for the production of motor fuel.

Of the hypochlorites mentioned I prefer to use an aluminium hypochlorite as being the most efficient. However, in mineral oils high in sulphur contents I have found iron and copper hypochlorites are especially suitable for combining with the sulphur compounds and causing them to remain in the residue, the sulphur being converted into metal sulphates which remain in the still.

In the example given I have used as much as 10 percent metal hypochlorite with heavy Bakersfield oil. It will be understood that with lighter mineral oils, such as Colorado oils, as little as 2 percent will be sufficient.

Various changes may be made, by those skilled in the art, in the steps of the process as claimed.

I claim:

1. The process of treating mineral oils and their products comprising adding a metal hypochlorite in dry form thereto and subjecting the same to a cracking temperature to increase the lighter fractions by splitting up the heavier molecules of the mineral oil or product.

2. A process of treating mineral oils and their products comprising treating the same with aluminium hypochlorite in dry form and subjecting the same to a cracking temperature to increase the lighter fractions thereof by splitting up the heavier molecules of the mineral oil or product.

3. A process of treating mineral oils and their products comprising adding from 2 to 10 percent of a metal hypochlorite in dry form and subjecting the same to a cracking

temperature to increase the lighter fractions thereof by splitting up the heavier molecules of the mineral oil or product.

4. A process of treating mineral oils and their products comprising adding from 2 to 10 percent of aluminium hypochlorite and subjecting the same to a cracking temperature from 230 to 650 degrees F. to increase the lighter fractions thereof by splitting up the heavier molecules of the mineral oil or product.

In testimony whereof I have signed my name to this specification.

HENRY BLUMENBERG, JR.