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BENEFICIATED MINERAL OIL

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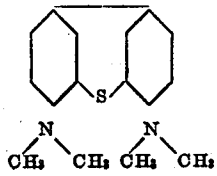
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4 Claims. (Cl. 252—51)

This invention relates to mineral oils; and it is among the objects of the invention to provide compositions having increased stability in service conditions, such as involved in contact with metals, elevated temperatures, etc.

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.

The oil may be of desired character, for example 45–200 sec. Saybolt Universal at 210° F., and a benzidine compound is incorporated in it. The amount need not exceed five per cent, and generally 0.1 to 1 per cent is satisfactory. The benzidine compound may be benzidine or a derivative. The derivatives may involve substituents on the amine groups, as for example alkyl, aryl, acyclic, heterocyclic groups, or such groups which have been substituted; the substituents on the amines may also be alkyl, alkylidine, arylidine, or substituted derivatives of such groups, as halogen, NH_2, OH, RO—, R—C—O—, etc. Substituents in the rings may be any of these, or sulphur, etc; sulphuric acid substituents and their metal salts, as aluminum, sodium, etc., may also be present in the ring. Illustrative compounds are tetramethyl thiobenzidine, tetramethyl benzidine, tolidine, dianisidine, etc. Particularly advantageous are the thiobenzidine sulphur derivatives, as for instance



As an example: With a commercial S. A. E. 20 lubricating stock there is incorporated 0.25 per cent of tetramethyl benzidine. Tested by the quick test method involving passing air at the rate of thirty liters per hour through the oil at 300° F. for sixty-five hours, this product showed a viscosity increase at 100° F. of 31 Saybolt, sludge formation 2.5 per cent, lacquer formation 12.8 mg., copper corrosion none, and appearance rating B plus. In contrast, the oil without the benzidine compound, tested under the same conditions, showed a viscosity increase of 258, sludge formation 9.2, lacquer formation 54.6, copper corrosion 6.3, and appearance rating D.

As another example: With a similar oil there is incorporated 0.25 per cent of tetramethyl thiobenzidine.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided 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 beneficiated mineral oil consisting of an oil of lubricating viscosity and a small amount of tolidine.

2. A beneficiated mineral oil consisting of an oil of lubricating viscosity and a small amount of tetramethyl benzidine.

3. A beneficiated mineral oil consisting of an oil of lubricating viscosity and a small amount of dianisidine.

4. A beneficiated mineral oil consisting of an oil of lubricating viscosity and a small amount of a substituted benzidine where the substituent is selected from the group consisting of alkyl and alkoxy.

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