

UNITED STATES PATENT OFFICE

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CLEANSING AND EMULSIFYING AGENT

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It is known that in the catalytic hydrogenation of oxids of carbon, oily products consisting chiefly of higher aliphatic alcohols, such as isobutyl alcohol, and other oxygen-containing organic compounds such as ketones, aldehydes and esters of higher fatty acids can be obtained for instance by passing a mixture of an oxid of carbon and a gas containing hydrogen at a moderate speed and at an elevated pressure and temperature over a catalyst comprising substantially non-reducible metal oxids.

I have now found that the said oily products which are substantially insoluble in water, possess very good cleansing properties and can be converted into preparations miscible with water in any desired proportions with the formation of clear solutions, and very suitable for use as cleansing and emulsifying agents, by mixing them with a soap and an aliphatic alcohol of low boiling point. For this purpose all kinds of soaps, whether soft soaps, grained soaps, or any other soaps or mixtures thereof can be employed. Materials possessing soap-like properties may also be employed instead of or in conjunction with soaps. As examples of such materials I mention Turkey red oil, alkylated aromatic sulfonic acids such as isopropyl-naphthalene sulfonic acid, or their salts and the like. As examples of suitable alcohols of low boiling point I mention crude or pure methanol, whether obtained from wood or synthetically, ethyl alcohol or mixtures of several such materials and the like. The alcohols are used in a concentrated state of about 95 per cent strength, but they may also be employed in a more dilute state in correspondingly larger quantities. I have found that the quantity of an alcohol of low boiling point to be added for obtaining a preparation forming clear solutions in water depends on the nature of the oily product employed and also on its boiling point. No general rule can be given, but the necessary quantity can easily be ascertained by tests. The quantity of soap employed for a given quantity of the oily product may be varied as desired. In most cases, however, it should amount at least to that of the oily product.

The said preparations may also contain most various other materials, without losing their miscibility with water. As examples of such materials I mention all kinds of aliphatic, hydroaromatic or aromatic hydrocarbons such as benzine, paraffin wax, benzene and its homologues, naphthalene, the corresponding hydroaromatic hydrocarbons and the like or mixtures of several such hydrocarbons. Also in this case the necessary quantity of alcohol of low boiling point can be easily ascertained by tests.

Instead of the oily products of the hydrogenation of oxids of carbon, similar liquid mixtures, such for example as are obtained by the hydration of gases resulting from cracking or similar operations by means of sulfuric acid which are of practically the same nature as the oily products obtained in the hydrogenation of carbon oxids, may be employed as well.

The preparations according to this invention may be obtained in various ways, for example by mixing the oily liquid with a soap and an alcohol. Or a fatty acid is mixed with the oily liquid and then neutralized with an alkali, whereupon so much of an alcohol of low boiling point is added that the mixture forms clear solutions with water. Another way consists in mixing a fatty acid with the oily liquid and the alcohol of low boiling point and neutralizing. In all cases the above-mentioned hydrocarbons may be added before or after the neutralization.

The products so obtained form clear solutions with water, and these solutions possess a high cleansing power. They may be employed for example in the textile and leather industries.

The following examples will further illustrate how this invention may be carried out in practice, but the invention is not limited to these examples, nor to the proportions of the ingredients indicated therein. The parts are by weight.

Example 1

200 parts of commercial oleic acid are mixed with 200 parts of a fraction of the oily hydrogenation product of oxids of car-

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bon, obtainable according to British Patent No. 238,319, boiling between 150° and 250° C. and neutralized, while warm, i. e. between about 40 and 70° C., with a solution of 45 parts of caustic potash in 30 parts of water, whereupon 150 parts of ethyl alcohol of 95 percent strength are added. The resulting mixture forms clear solutions with water in any desired proportions.

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Example 2

200 parts of commercial oleic acid are mixed with a mixture of 20 parts of a fraction of the oily hydrogenation product of oxids of carbon, obtainable according to British Patent No. 238,319, boiling between 170° and 180° C., 150 parts of ethyl alcohol of 95 per cent strength and 50 parts of tetra-hydronaphthalene, and neutralized, while warm but below the boiling point of ethyl alcohol, with a solution of 45 parts of caustic potash in 30 parts of water. The resulting product has properties similar to those of the product obtained according to Example 1.

25 What I claim is:

1. An emulsifying and cleansing composition comprising a substantially water-insoluble mixture of alcohols, ketones, aldehydes and esters of higher fatty acids, which compounds belong mainly to the aliphatic series, a soap and an aliphatic alcohol of low boiling point.

2. An emulsifying and cleansing composition comprising the oily hydrogenation products of oxids of carbon substantially insoluble in water comprising in the main oxygen-containing organic compounds, a soap, an aliphatic alcohol of low boiling point and a hydrocarbon boiling at a temperature above 20° C.

40 In testimony whereof I have hereunto set my hand.

WILHELM PUNGS.

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