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BUFFING COMPOUNDS

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This invention relates to compounds for buffing and polishing and has for its principal object the provision of such a compound which shall be economical to manufacture and which shall include an improved vehicle for the abrasive or polishing substance employed.

As is well known in the art to which my invention relates, buffing compounds generally embody a heavy grease or saturated fatty acid vehicle, or a mixture of the same with mineral or vegetable oils, and an abrasive or polishing filler, such as emery, silica, pumice, rouge, feldspar, precipitated chalk, tripoli, bentonite, or others which are selected for their peculiar physical properties, and for their effect on the material to be polished. The use of straight fatty acids as the vehicle for the abrasive is expensive, while a buffing compound employing non-saponifiable mineral oils as the vehicle is objectionable for the reason that the compound is difficult to remove or clean after the polishing is finished.

I have found that the ideal buffing compound is one which is solid at ordinary temperatures, is saponifiable, and has a titer, or solidification point, of from 40°–44° C. Such a compound has the property of retaining the abrasive on the buffing wheel and may be readily washed out of the irregularities of the surface being polished with an alkali solution when the work is finished.

Considerable effort has been heretofore exerted in an attempt to find a satisfactory, more economical substitute for the fatty acid in buffing compounds. The use of tall oil, which is a relatively cheap by-product of the kraft paper industry has been proposed, but being liquid at ordinary temperatures is not retained on the buffing wheel and thus does not provide a satisfactory cutting rate. Soaps made from tall oil with added abrasives have been mentioned in the prior art, but are unsatisfactory for use as buffing compounds for the reason that they are relatively hard and for that reason cannot be retained on a buffing wheel.

I have discovered that tall oil may be mixed with a saturated fatty acid, and especially with a hydrogenated fatty acid, and a satisfactory, economical vehicle for an abrasive be thus provided.

Tall oil is a fatty acid-rosin mixture produced as a sodium soap in the digesting of pine wood chips with an alkali. Upon acidification of the soap crude tall oil is produced, which may be refined by distillation or solvent extraction. The

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analysis of tall oil varies with the wood from which it is produced and with its treatment. A typical analysis of solvent refined tall oil is as follows:

Specific gravity, 25° C	0.9763
Viscosity, Sayb. Univ. 210° F. sec	118.5
Viscosity, Gardner-Holdt	V–Z
Flash point, ° F	395
Fire point, ° F	440
Color, Lovibond 1 in 70 yellow—18.8 red	
Color, Hellige scale	10–12
Moisture, per cent	0.24
Ash, do	0.003
Acid number	166.3
Saponification value	174.2
Rosin acid number	84.4
Rosin acids, per cent	45.4
Fatty acids, do	47.8
Sterols, do	6.60
Iodine number (Wijs)	142.5

I prefer to use solvent refined tall oil although tall oil refined by other methods, or even crude tall oil, may be employed. I also prefer to employ one or more of the higher saturated fatty acids such as stearic or palmitic acid, or those saturated fatty acids produced by the hydrogenation of unsaturated fatty acids and having a titer of from 55° to 65° C. Where the latter are employed, a higher percentage of tall oil may be used.

Following are typical examples of buffing compounds made in accordance with my invention, employing stearic acid as the fatty acid component.

Example I

Tripoli bar:

	Per cent by weight
Once ground Rose Tripoli	68
Stearic acid	22
Tall oil	10

Example II

Cut and color bar:

	Per cent by weight
Abrasive (amorphous silica)	75
Stearic acid	16
Tall oil	9

Example III

Aluminum oxide type:

	Per cent by weight
Abrasive (aluminum oxide)	80
Stearic acid	14
Tall oil	6

Example IV

Red rouge:

	Per cent by weight
Iron oxide	87
Stearic acid	10
Tall oil	3

The ingredients are mixed in the usual manner and the product is molded or cut into bars, or made into any suitable form for use. In all the above compounds the titer, is from 40° to 45° C. It will be noted from the above that as the percentage of the abrasive or polishing component increases, the tall oil in relation to fatty acid decreases, varying from approximately one-third the amount of fatty acid to approximately one-half. If the fatty acid component be saturated by hydrogenation to a titer, or solidification point of from 55° to 60° C. the percentage of tall oil may be considerably increased, it being borne in mind that the titer of the final product is preferably from 40° to 45° C.

Following is an example of a buffing compound employing a hydrogenated fatty acid and tall oil as the vehicle for the abrasive:

Example V

	Per cent
Once ground Rose Tripoli	68
Hydrogenated fatty acid (titer 55°–65° C. iodine No. 10)	16
Tall oil	16

In addition to the fatty acids and tall oil set forth in the foregoing examples it is contemplated that other components well known in the art, may be added to modify the buffing action of the compound, as is well understood.

While I have described several examples of buffing compounds made in accordance with my invention, it will be understood that my invention is not limited thereto, but is susceptible of various other changes and modifications without departing from the spirit thereof, and that the only limitations to be imposed thereupon are those specifically set forth in the appended claims.

What I claim is:

1. A vehicle for the abrasive in a buffing compound consisting essentially of a mixture of a higher saturated fatty acid and tall oil in which the tall oil component varies from approximately one-third by weight the amount of the fatty acid to an amount equal that of the fatty acid.

2. A vehicle as set forth in claim 4 in which the fatty acid is hydrogenated to a titer of from 55° to 65° C.

3. A vehicle as set forth in claim 4 in which the fatty acid is hydrogenated to a titer of from 55° to 65° C. and in which the tall oil is substantially equal in amount to that of the fatty acid.

4. For use as a vehicle for the abrasive in a buffing compound, a mixture consisting essentially of a higher saturated fatty acid and tall oil, and having a titer of from 40° to 45° C.

5. In a buffing compound, an abrasive, a vehicle consisting essentially of a mixture of a higher saturated fatty acid and tall oil, the tall oil varying from one-third by weight the amount of the saturated fatty acid to an amount equal thereto, and said vehicle having a titer of from 40° to 45° C.

6. A buffing compound as defined in claim 5 in which the abrasive comprises from 68% to 87% by weight of the compound.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,119,159	Glenning	May 31, 1938
2,148,642	Ricard	Feb. 28, 1939
2,277,287	Beckman et al.	Mar. 24, 1942

FOREIGN PATENTS

Number	Country	Date
348,315	Great Britain	May 14, 1931