8.	Oil rosemary, Spanish	9.1	0.3	0.4
9.	Oil rosemary, Spanish	14.4	0.4	0.5
10.	Oil bois de rose, Brazilian	83.8	2.5	3.2
11.	Oil citronella, Ceylon	58.5	0.8	1.4
12.	Oil citronella, Ceylon	57.4	0.9	1.1
13.	Oil citronella, Ceylon	56.9	0.9	1.1
14.	Oil citronella, Estate	63.9	0.6	1.1
15.	Oil citronella, Estate	59.0	0.7	1.2
16.	Citronellal	....	0.1	1.1
17.	Oil spike, French	41.7	1.8	1.8
18.	Oil spike, French	36.8	1.6	1.9
19.	Oil spike, French	31.9	0.8	1.7
20.	Oil spike, French	39.2	1.6	1.9
21.	Oil spike, Spanish	18.2	0.5	0.7
22.	Oil spike, Spanish	42.1	1.0	1.8
23.	Oil spike, Spanish	42.1	1.6	1.7

Acid Soaps

By H. BENNETT*

ALTHOUGH a few specialty soaps contain amines instead of alkalies, practically all commercial soaps consist of the alkali or alkaline earth salts of fatty acids, and are alkaline in reaction. The pH value of the amine type is lower than that of soaps made with alkalies.

Recently there have been introduced two new commercial soaps which not only are not alkaline but actually are faintly acid, having pH value of about 6.2. These acid soaps are diglycol oleate and diglycol stearate.

Diglycol oleate is an oily brown liquid of marked color, soluble in alcohol, esters and hydrocarbons, but insoluble in water. It is useful as a softening agent for rubber, resins and varnish gums. A permanently non-alkaline liquid soap, it will not affect colors or fibers. Because of its solubility in naphtha and other dry-cleaning solvents, it is available for the production of dry-cleaners' soaps. As an emulsifying agent it gives water-in-oil emulsions which are of advantage for automobile and furniture polishes. These emulsions can be inverted to the oil-in-water type by the addition of small amounts of alkali.

Diglycol stearate is an almost white waxy solid, melting at 58° C., somewhat soluble in cold alcohol and hydrocarbons, its solubility increasing rapidly with increase of temperature. Being free from alkalies and amines, it finds many applications as an emulsifying agent. In water heated to 60° C. or higher, diglycol stearate disperses readily. A 3 per cent dispersion gives a viscous milky stable fluid, while a soft white cream or paste is the product of a 10 per cent dispersion. Emulsions produced with these diglycol esters may be used for lubrication and to increase flexibility and lustre, on wool, cotton, rayon, leather, and paper.

The addition of four to six per cent of diglycol stearate to ordinary soaps for industrial washing is said to increase the detergent power of the soaps, producing lather of creamier consistency having small bubbles and greater stability. In toilet soaps this product promotes a smoothing effect upon the skin. When used as a superfatting agent in soaps, diglycol stearate tends to lighten the color of the soap, rather than darken it, as is so often the case with superfatting agents.

To increase the smoothness, flexibility and strength of wool during the various manufacturing processes that it undergoes, the wool is oiled, large quantities of oil emulsions being employed for this purpose. Where small quantities of a diglycol ester is incorporated with the oiling emulsion, many of the difficulties previously attributed to the oiling process are said to have been eliminated. The penetration of the oiling emulsion is increased by the addition

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of the diglycol ester. Weakening of the fiber, off odors and imperfect dyeing are also avoided. In the washing-out process, the addition of a small amount of alkali completely removes all oil and grease when the oiling emulsion contains the diglycol ester. In the preliminary washing of raw wool, the process is simplified to a great extent by treatment of the wool with a solution of diglycol ester plus 1 per cent of alkali in warm water, this treatment being helpful in loosening the natural wool grease present.

In the weaving of rayon, weighted silk and other fibers, thread breakage is almost entirely eliminated by treatment with diglycol oleate to which some potash soap has been added. The tensile strength and flexibility of the fiber is said to be increased and weighted silk made more resistant to temperature and humidity changes. Raw silk treated with these esters is free of spots when finished.

In the manufacture of paints and inks consisting of pigments suspended in oil, the addition of about 2 per cent of diglycol stearate to the mixture tends to improve the life of the suspension and prevent settling of the pigment. Coatings of greater flexibility and strength are produced from solutions of shellac, resins and varnish gums by the addition of varying amounts of diglycol oleate.

Lustrous white ointments, which spread evenly and are readily absorbed by the skin (because of their low surface tension), may be prepared by melting lanolin with diglycol stearate, forming thereby a base which will absorb large amounts of water.

Smoke, Flash and Fire Points For Commercial Oils

EMPLOYING the Cleveland "Open Cup" method, W. H. Dickhart, consulting chemist, located at 189 Franklin street, New York, recently tabulated the figures set below on the smoke-flash-fire points of various vegetable oils. Little data has been available, and while these tests were made at different times, not averaged on the same oils, and represent approximate values, they will furnish data in a field heretofore containing little printed information. Temperatures, in Fahrenheit, were determined by Mr. Dickhart as follows:

Oils	Smoked F°	Flashed F°	Fired F°
Olive (edible)	350	554	690
Olive (commercial)	290	538	682
Olive (bleached, refined foots containing CS_2)	348	570	670
Rapeseed	256	680	692
Rapeseed	412	600	692
Rapeseed	332	594	692
Rapeseed (English)	390	614	692
Sesame	500	632	684
Palm (Refined)	446	620	692
Cottonseed (P. S. Y.)	493	616	680
Cottonseed (Deodorized)	508	650	680
Peanut	464	632	692
Hydrogenated Cottonseed	380	590	660
Soya Bean	280	580	...
Lard Oil	288	492	610
Tallow (Acid less)	...	605	695
Tallow (2 per cent F. F. A.)	350	545	675
Red Oil	260	368	414
Sperm	130	510	672
Pine	...	153	184
Turpentine	...	84	98