

## UNITED STATES PATENT OFFICE

2,101,831

## SULPHATED SELACHYL ALCOHOL

Alfred William Baldwin and Hugh Mills Bunbury, Blackley, England, assignors to Imperial Chemical Industries Limited, a corporation of Great Britain

No Drawing. Application January 23, 1935, Serial No. 3,198. In Great Britain February 9, 1932

6 Claims. (Cl. 260—99.12)

This invention relates to the sulphation of selachyl alcohol (alpha oleyl glyceryl ether).

This application is a continuation-in-part of our co-pending application U. S. Serial No. 655,677, filed February 7, 1933, and in Great Britain February 9, 1932.

*Example I*

Twenty (20) parts of the crude alcohols obtained from the liver-oil of *Centrophorus granulosis* and *Somniosis microcephalus* and consisting largely of selachyl alcohol together with some batyl and chimyl alcohols, 25 parts of finely ground sodium pyrosulphate and 9 parts of pyridine were heated together at 90° C. to 95° C. until a sample dissolved to a clear solution in water. The mixture was stirred with 200 parts of water containing 8 parts of sodium carbonate, evaporated to dryness, and the residue extracted with boiling methanol, in which the desired product was soluble. On evaporation of the alcohol a creamy yellow paste was obtained, readily soluble in water.

*Example II*

One (1) part of the product of Example I was dissolved in 1000 parts of water, of hardness equivalent to 20 parts of calcium carbonate in 100,000 parts of water. Raw wool was more thoroughly cleaned after immersion in this solution at 40° C. to 45° C. for thirty minutes than after similar treatment with a 0.2% to 0.25% solution of cetyl sodium sulphate in the same water.

The sulphated selachyl alcohol may be employed in the form of the free acid, but is preferably neutralized with a salt-forming compound of inorganic origin, such as, for example, alkali metal hydroxide, ammonia, or lithium and magnesium compounds, or of organic origin such as mono-, di- or trialkyl-amines, cyclohexyl-amines, mono- and dialkyl-cyclohexyl-amines, hydroxyl alicyclic amines as hexahydro-aminophenol, mono-, di- and trialkylol-amines, piperidine, pyridine, quinoline, betaine and thiourea.

In general, the sulphated selachyl alcohol herein described may be used in pure or standardized form and may be used in conjunction with known processes for treating agents. It may be used for other purposes than those indicated above, for instance, in carbonization, as an addition to flax retting baths, in sizing, in fulling, as an addition when sizing is removed from textile materials, in impregnating, bleaching, mordanting, as an addition to soap in an acid bath, in mercerizing liquors, to improve the absorption characteristics

of fibrous materials, particularly when subjected to a treatment for finishing, softening, stiffening, coloring or special chemical treatment such as water-proofing or mildew-proofing. It may be used in lustering or delustering, degumming, kier boiling, scouring, stripping, felting, oiling or lubricating, weighting or loading natural or synthetic textile or fibrous materials which are ordinarily subjected to such processes, twist setting in yarn, and silk soaking.

It may also be used in other fields, particularly in dyeing processes, for instance, in dyeing from neutral, acid or alkaline baths, reserving cotton in acid baths, dyeing with developed dyes, dyeing of animal fibers with vat dyes, dyeing cellulose acetate fibers with insoluble dyes, dyeing and printing with aniline black, dyeing of leather, in making dye pastes of dyes or dye components, in printing pastes to assist in the dispersion of the dye or dye component and in the penetration into the neutral or synthetic fiber, in the production of pigments of azo, basic, acid, vat, and sulfur dyes in a finely divided condition, for the production of finely divided inorganic pigments. In addition, it may be used for converting liquid or solid substances normally insoluble in water, such as hydrocarbons, higher alcohols, other oxygen-containing compounds, fats, oils, waxes, resins, pitches and pitchy substances, halogenated hydrocarbons (for example trichloroethylene and ortho- or para-dichlorobenzene) into clear solutions or stable emulsions or dispersions. It may be used in deliming, bating, fat liquoring, tanning and softening or treating baths for hides and skins, particularly for the fat liquor treatment, for wetting crusted leather, and in flotation processes including minerals and oils such as the recovery of fixed oil from the oil sands.

Further miscellaneous uses are: Agricultural sprays and insecticides; disinfectants; washing fruit and vegetables for spray residue removal; emulsifiers for cosmetics, wetting agents for metal cleaning compounds with acids and alkalis, wetting agents for paint, varnish and lacquer cleaners, as aids in chemical reactions; wetting agents for wood preservatives; foaming agents, particularly for fire extinguishers; anti-splattering agents for fats, and in salad oil manufacture.

As many apparently widely different embodiments of this invention may be made without departing from the spirit and scope thereof, it is to be understood that we do not limit ourselves to the specific embodiments thereof except as defined in the appended claims.

We claim:

1. An alkali metal salt of selachyl sulphate.
2. A process of making an alkali metal salt of selachyl sulphate which comprises heating selachyl alcohol with an alkali metal pyrosulphate and pyridine and neutralizing the reaction mixture with an alkali metal carbonate.
3. Sodium selachyl sulphate.
4. A process of making sodium selachyl sulphate which comprises heating crude selachyl

alcohol with finely ground sodium pyrosulphate and pyridine until a sample dissolves to a clear solution in water and neutralizing the reaction mixture with an aqueous solution of sodium carbonate.

5. A sulphuric ester of selachyl alcohol.
6. A salt of selachyl sulphuric acid.

ALFRED WILLIAM BALDWIN.  
HUGH MILLS BUNBURY.