

Handbook on Oleoresin and Pine Chemicals (Rosin, Terpene Derivatives, Tall Oil, Resin & Dimer Acids)

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Pines are known to mankind from the time immemorial. It offers both direct uses, as well as indirect uses specially soil conservation. Initially it was used mainly for fuel; their branches were used for festivals etc. Pines besides being a source of valuable timber, pulpwood, yield pitch, tar, rosin, colophony and turpentine, collectively known as naval stores, a term coined to these owing to their use for construction and maintenance of sailing vessels as sealing compounds for their wooden hulls. The genus pine species tapped for their oleoresin in different countries. A variety of oleoresins are extracted from various plants. Pine oleoresin being the most important one is extracted from pine trees. Turpentine and rosin are two constituent parts of the pine oleoresins. The composition of turpentine varies considerably according to the species of pine exploited. More and more specialised uses are being found for pine resin products, particularly those of high quality. Turpentine derived from pine resin is also used as a source of aroma chemicals in flavour and fragrance industry. Pinewood chemicals are effectively gained from the trees in three principal ways; treatment of exuded gum from living pines, processing the wood stumps and wastes of aged trees and treatment of black liquor obtained as a byproduct in wood pulp industry. There are two steps involved in production of oleoresin; olustee gum cleaning process and recovery of turpentine and rosin: batch and continuous process. The panorama of base catalysed isomerisations of terpenes is an important part of aroma chemistry. Major contributions in this area are presented here under sections on hydrocarbons, alcohols, aldehydes, ketones, acids, esters and epoxides. Tall oil is a by product of the pine wood use to make sulfate pulp. Tall oil products find use in many product applications because of their economy and ready availability. The principal industrial applications of tall oil products are numerous; adhesives, carbon paper, detergents, driers, drilling fluids, oils, gloss oils, paper size, plasticizers, printing inks, soaps, textile oils etc.

Some of the fundamentals are pine oleoresin extraction methods, occurrence, formation and exudation of oleoresin in pines, processing of oleoresin, rosin derivatives and its potential, new developments in rosin ester and dimer chemistry, terpene based adhesives, effect of solvent, ozone concentration and temperature on yields were investigated, sylvestrene and some of its derivatives, homopolymers and copolymers of acrylates, polymers and copolymers of vinyl pinolate, base catalysed isomerisations of terpenes, components of pine roots, insecticides based on turpentine, the general characteristics of dimer acids, structure and properties of dimer acids etc.

The present book has been published having in views the important uses of pines. The book contains manufacturing process of different products extracted from pines like oleoresin, rosin, turpentine derivatives, tall oil, resins and dimer acids etc. This is the first book of its kind which is very resourceful for all from researchers to professionals.

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