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EPOXIDATAION OF RUBBER SEED OIL

by

A. Coomarasamy

(Rubber Research Institute of Sri Lanka, Ratmalana)

Epoxidised vegetable oils and epoxidised esters of unsaturated fatty acids are widely used in the polymer industry as stabilizers / plasticizers for polyvinyl chloride and other chlorinated polymers and in surface coating materials such as alkyd resins.

Rubber seed oil has the required amount of unsaturation to prepare epoxidised oil with desired properties and this paper discusses the work carried out at the Rubber Research Institute on epoxidation of rubber seed oil.

Epoxidation experiments were carried out using hydrogen peroxide/glacial acetic acid as the reagent under different sets of conditions. It has been found that epoxidised product with satisfactory exirane content could be prepared using this reagent. Resin catalysed epoxidation was found to be more efficient compared to the mineral acid catalysed process and addition of solvents such as ethyl acetate, benzene results in improvement in the extent of epoxidation.

Extent of epoxidation was measured by determining the exirane content, iodine value and by using IR spectroscopy.

Epoxidised oil will have a good market locally as well as abroad and it is possible to earn valuable foreign exchange by the commercial preparation of this product using locally available rubber seed oil.