

INDIGENOUS SYNTHESIS OF WETTING AGENTS FROM CASTOR OIL FOR THE FINISHING OF COTTON FABRIC

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ABSTRACT

Castor oil is one of the most versatile plant oils. The various grades of the oil and its derivatives are currently used in over a dozen diverse industries. In future, with the rising environmental concerns and the need for bio-based products to replace synthetic feedstocks, castor oil and oil oleo chemicals have the potential to be used in many newer industries.

Many derivatives and oleochemical of castor oil require relatively simple methods for their production. While higher generation derivatives such as sebacic acid or salts ricinoleic and undecylenic acid could require more sophisticated production methods.

This paper carried out experimental study, through sulfation and neutralization of refined castor oil. Concentrated sulfuric acid will be used as solvent for the sulfation process. The oil produced will be neutralized by caustic soda solution. The characterization analysis revealed that tested parameters, which include concentration, acid value, saponification value and iodine value for refined castor oil produced, were within the ASTM standard specifications. In fact the iodine value obtained (82-88) for the refined oil indicates that the oil could certainly be used as lubricant, wetting agent. The oil was modified via sulphation method to produce Turkey – red oil that was tested on cotton cloth. The test revealed that the Turkey – red oil produced is suitable for wetting agent for cotton fabric.

KEYWORDS: Castor Refined Oil, Sulfation, Neutralizing, and Wetting Agent