

Preparation of White Phenyl Floor Cleaner: A Sustainable Approach to Household Hygiene

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Abstract: White phenyl is a common disinfectant and floor cleaner that contains mostly pine oil emulsified in water. In this research, the formulation, stability, and confirmation testing of white phenyl are emphasized using pine oil and cutting oil or Sulfonated Castor oil as major components. The main aim is to prepare an efficient, stable, and cost-effective formulation and confirm its disinfectant nature.

The process of formulation entails emulsifying the pine oil with cutting oil or Sulfonated castor oil acting as an emulsifier and later diluting it in water to form a stable milky white solution. The emulsion is then tested for stability through phase separation analysis, and a good formulation should be homogeneous without oil separation after 24 hours. In addition, solubility tests validate its miscibility with water, and pH testing verifies a slightly alkaline character (6.5–8.0) appropriate for efficient cleaning. The disinfectant activity of the synthesized phenyl is assessed through microbial growth inhibition tests, determining its capacity to inhibit bacterial colonies on treated surfaces.

This research seeks to maximize the long-term stability of the formulation without compromising its high efficacy as a cleaning agent. The findings give light to the function of cutting oil as an emulsifier in phenyl manufacture and set scientific procedures to assure the performance of the product. This work helps in the sustainable development of low-cost disinfectants with real-world applications in household and industrial cleaning.

Keywords: White phenyl, Pine oil, Cutting oil, Sulfonated Castor oil, Disinfectant, Cost-effective Disinfectant

