

**A PROJECT REPORT ON
PREPARATION OF HAND SANITIZER**

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CERTIFICATE

This is certified that the project report title "Preparation of Hand Sanitizer" completed by anusha munni sravanthi maheshwari..... .. under the guidance of Dr. E. Anitha in Chemistry. This has not been submitted to any other institute or University for the award of any degree



Signature of the Guide



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Preparation of Hand Sanitizer

Objective: Objective of this project is to give the training to the chemistry students in preparation of the hand sanitizer and to raise the awareness about hand hygiene to prevent the spread of infectious diseases like Covid -19.

The purpose is to give training to the Chemistry as well as Life Science students.

Materials: Isopropyl alcohol or ethanol, hydrogen peroxide, glycerol, aloe vera gel, eucalyptus, peppermint oil and boiled cold water.

Introduction:

Hand sanitizer has become more popular than ever, in large part due to its effectiveness during the COVID-19 pandemic. Hand sanitizer has proven itself useful in killing germs. Hand sanitizer products kill germs on your hands and other surfaces on contact, helping to slow the spread of transmissible diseases like COVID-19.

Hand sanitizer, also called hand antiseptic agent applied to the hands for the purpose of removing disease-causing organisms. Hand hygiene is one of the most important measures to prevent the spread of infectious diseases. Hand sanitizer use is recommended when soap and water are not available for hand washing or when repeated hand washing compromises the natural skin barrier.

Although the effectiveness of hand sanitizer is variable, it is employed as a simple means of infection control in a wider areas such as daycare centres, schools, hospitals, health care clinics and super markets. As a result of rising awareness about hand hygiene and its benefits, there has been a constant increase in demand of hand sanitizers.

Hand sanitizer is a handy on-the-go way to help prevent the spread of germs when soap and water aren't available. Alcohol-based hand sanitizers can help keep you safe and reduce the spread of pathogens. Hand sanitizers typically come in foam, gel, or liquid form. This project profile envisages preparation of alcohol based liquid hand sanitizer.

Formulation: As per WHO guidelines, the sanitizer must contain at least 70% of alcohol, one percent of Hydrogen Peroxide and 10% of Glycerine and the rest is the distilled water

Formulation-I:

Ethanol 80% v/v, glycerol 1.45% v/v, hydrogen peroxide (H_2O_2) 0.125% v/v.

Preparation as per WHO: In one litre flask, 833.3 ml ethanol (96% v/v), 41.7 ml H_2O_2 (3%) and 14.5 ml glycerol (98%) are taken and top up the flask to 1000 ml with distilled water or water that has been boiled and cooled; shake the flask gently to mix the content.

Formulation-II: Isopropyl alcohol 80% v/v, glycerol 1.45% v/v, hydrogen peroxide (H_2O_2) 0.125% v/v %,

Preparation as per WHO: Isopropyl alcohol (with a purity of 99.8%), 751.5 ml, H_2O_2 3%, 41.7 ml glycerol 98%, 14.5 ml are taken in 1000 ml graduated flask top up the flask to 1000 ml with distilled water or water that has been boiled and cooled; shake the flask gently to mix the content.

Formulation-III

Isopropyl alcohol and aloe vera gel in 2;1 ratio, and a few drops of eucalyptus and peppermint oil.

Evidence of success:

The students used the laboratory made sanitizer with good results.