

Synthesis of Organic Glass Cleaner Spray

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ABSTRACT: The present study is focused on the development and formulation of organic glass cleaner based upon the literature survey of various chemicals possessing cleaning activity. The proposed product plays a significant role in cleaning the surface of glass, versatile and effective cleaning product. Nowadays, many commercial products are available in the market, but sometimes it needs to satisfy certain requirements like efficiency, non-hazardous and cost-efficient. Hence by considering the fact, the organic glass cleaner spray is synthesized from water, glaxicol paste, dry vinegar, thinners, and surface-active compounds. This product removes stains and dust effectively and keeps the glass surface clean.

Keywords: - Glass cleaner, versatile, cost efficient, glaxicol paste, dry vinegar.

I. INTRODUCTION

As per the global demand for cleaning products, is significantly expected due to the continuous rise in population for both domestic as well as industrial purposes. The cleaning products find wide applications for domestic purposes, kitchen, dairy, catering and industrial purposes like paper, pulp, sugar, pharmaceutical and many more. The cleaning products may be alkaline, acidic or neutral in nature depending upon the use. Hence, increasing the concern about the development of the product which should be innovative, efficient, cost-effective, insuring safety, easily available both satisfying the needs of developed as well as developing country and should contribute efficiently in the cleaning product industry as per the global demand, the above proposed product is presented here.

The above glass cleaner spray is basically synthesized by using glaxicol powder and vinegar powder. Vinegar is generally stocked domestic product and is most frequently used as a cleaning agent¹. Vinegar also provides an effective means of disinfecting surfaces of virus². The use of surfactant also plays an essential role as detergency is a very complex phenomenon. The use of surfactant aggregates above critical concentration and can separate the deposits by creating nano-sized dynamic compartments³. As per the current scenario, thousands of cleaning agents are available and the ecological and industrial hygiene benefits are obvious but are ergonomic and need to clear safety implications as an outcome price may be privileged⁴.

Several cleaning products available in the market can cause irritation to the eyes, throat, headache and other health issues. Few of them may be the source of the generation of harmful compounds of gasses. But the above product is synthesized, taking into consideration its harmful effects and the stability under working conditions.

The product also contains the presence of sodium stearate as a surfactant as it has both hydrophilic and hydrophobic parts, carboxylate and long hydrocarbon chain and can actively participate in micelle formation. Sodium stearate is also known to use as a lipid to form inclusion complexes and to reduce the sensitivity of complex film to environmental moisture⁵. The use of thinner and to have pleasant smell essential oil, which is grapefruit base is also added, which makes the product practically more usable and pleasant.

It is also important not to neglect the long-term use, or contact of chemically-based cleaner may be harmful to the person. Most of the research studies have revealed the several health effects affecting the lungs. Environment experts also have reported that most household cleaning agents consist of most of the harmful toxins, which can show their results after a long time. It is impractical to estimate precisely the risk, but precautions can be taken to avoid the adverse effects on health.

II. MATERIAL AND METHODS

First of all, 60gm of glaxicol powder is added in one litre of water and 1 gm of natural disinfectant vinegar is added and slowly mixed and stirred; a tablespoon of blue colour is added; as a result, the mixture turns to green colour initially, then 100 gm of surface-active compound is added due to which the mixture turns to blue colour. The products start to form and can observe the formation of a thick paste, ultimately 5 ml of thinner is added.

Ingredients

Table 1

S/N	Name of plant species	Parts used
1	Glaxicol powder	60gm

2	Vinegar Powder	1gm
3	Water	1000 ml
4	Blue Colour	As per the requirement
5	Surfactant-Sodium Stearate	100gm
6	Thinner-acetone	5 ml
7	Fragrance-grapefruit essential oil	20-25 drops

Evaluation on the Basis of Case Studies

Table 2

Places where product is Used for cleaning different glass surfaces at	Observations			
	Removal of stain	Removal of impurities/dust	Removal of dirt/impurities/dust	Removal of moisture
School Window's Glass surface/tableware	70-80%	70-80%	100%	100%
College Window's Glass surface/tableware	60-80%	60-80%	100%	100%
Hospital window's glass surface/tableware	60-70%	60-70%	100%	100%
Automobile's glass surface/tableware	80-90%	80-90%	100%	100%
Average Percentage	74%	74%	100%	100%

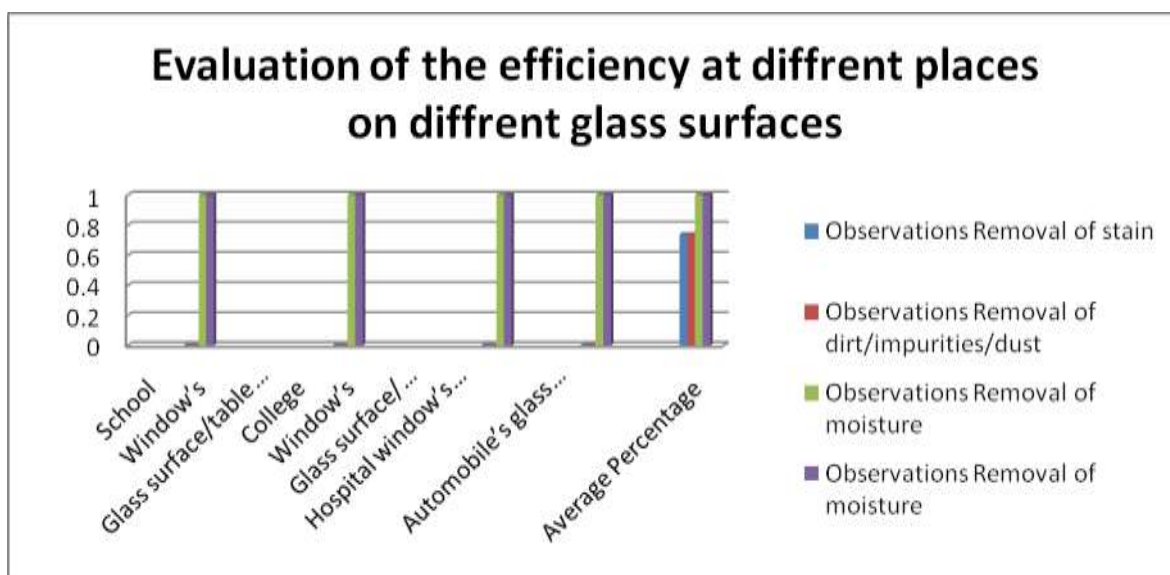


Figure: 1

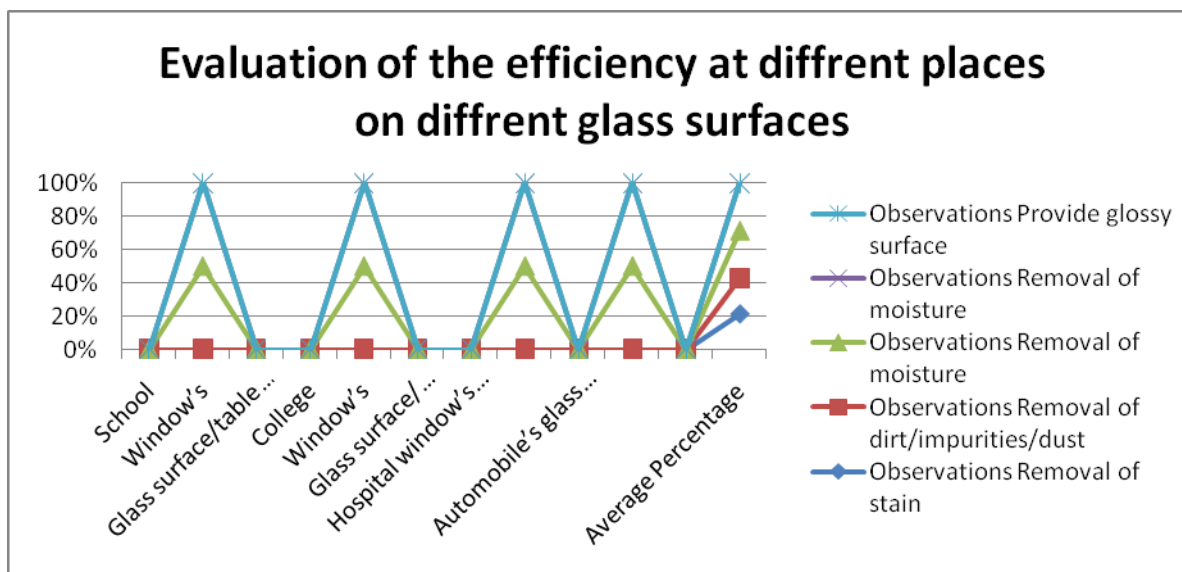


Figure: 2

III. RESULT AND DISCUSSION

The product itself proved that it has excellent potential for the removal of stains, deposits, rust, dirt, dust, moisture effectively and when coupled with physical removal of dust as well as bacteria by the means of wiping, it is able not only to clean but also to disinfect the bacteria. The product is applied on different glass surfaces at different location and observations are very clear. It can remove stains around 60-70% while moisture 100%. It is also capable to remove impurities around 74% while impart clean and glossy surface area as well as can also kill the micro-organisms present over.

IV. CONCLUSION

Organic glass cleaner spray is recommended to use at hotels, malls, schools, colleges, hospitals, offices for cleaning glass surfaces, also it is recommended to apply on automobile mirrors or all types of glasses. It contains pleasant and refreshing fragrance as well as cost effective. It shows rapid action for the removal of dirt, dust, stain and deposits as well as moisture effectively. Future studies and certain modifications and parameters need to analyze as well as to elucidate the advantages and drawbacks of this product and need to learn more about the effectiveness and potential health effects.

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