

PALM-BASED WATERLESS HAND CLEANER

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MPOB TT No. 234a - Palm-based Lotion Type
Waterless Hand Cleaner
MPOB TT No. 234b - Palm-based Gel Type
Waterless Hand Cleaner

The oldest cleaning agent, soap, may be adequate for cleaning hands at home. More powerful hand cleaners are needed for stubborn stains while a milder but effective yet easy to handle hand cleaner is needed for anyone on the move. Palm-based waterless hand cleaner (WHC) is a product designed not only to clean but to protect the skin and environment as well. The lotion type hand cleaner does not contain harsh chemicals normally found in other hand cleaners.

MAIN INGREDIENT

Usually, paraffins, iso paraffins and kerosene, which are toxic, combustible and non-friendly to the ecosystem, are used to formulate waterless hand cleaner (Klotz *et al.*, 2002). Due to implication of environmental regulations, natural solvents are finding a place in market applications. A report by MarketResearch.com indicated that due to environmental concern, there is demand for replacement of traditional with alternative solvent (www.marketresearch.com). Renewable resources also have the advantages over petrochemicals especially in terms of safety to users and other environmental consideration (Hill, 2000). Hence, this particular product has been developed using palm-based methyl ester as solvent. Other main ingredients in this lotion

type palm-based waterless hand cleaner are palm-based anionic surfactants and humectant.

EVALUATION

A survey on the acceptance and cleaning performance of this product for removing oil, grease and metal dust showed comparable results to a commercial product using petroleum-based solvent (*Figure 1*). The dirt being tested (10 g of oil and grease) is rubbed evenly on the palms and backs of both hands by 10 untrained testing panels. The hands are let to dry for 15 min before being washed with the test products (5 g). Comparative assessment was conducted for the cleaning effect. (Scale 1= less cleaning power; 3 = more cleaning power)

PROPERTIES

Physical data for lotion type palm-based waterless hand cleaner is described below:

Form	: White lotion
Volatility by volume	: <0.5%
Viscosity	: 2250 cP
pH	: 5-6
Detergency	: Excellent for oil, grease and metal dust

GEL TYPE

This mild hand cleaner is formulated using mixtures of palm-based anionic and non-ionic surfactants as the actives. Detergency results showed that combining both surfactants gave

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better cleaning power. The method used was based on Japanese Standards Association. Six pieces of glass plates were dipped in soiled bath. The dried plates were then washed using 1.5 g surfactant solution diluted with 1000 cm³ water (Figure 2).

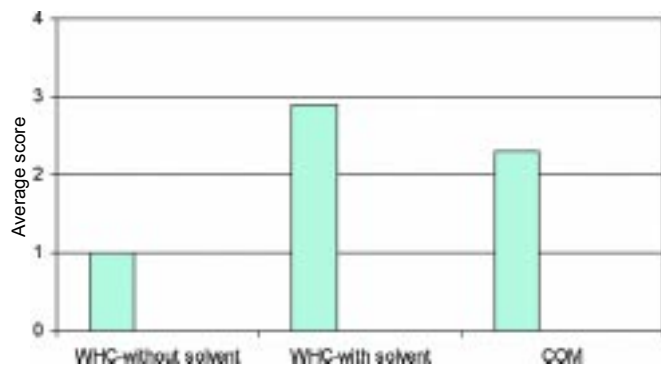


Figure 1. Average score between WHC without solvent, palm-based WHC with solvent and commercial product.

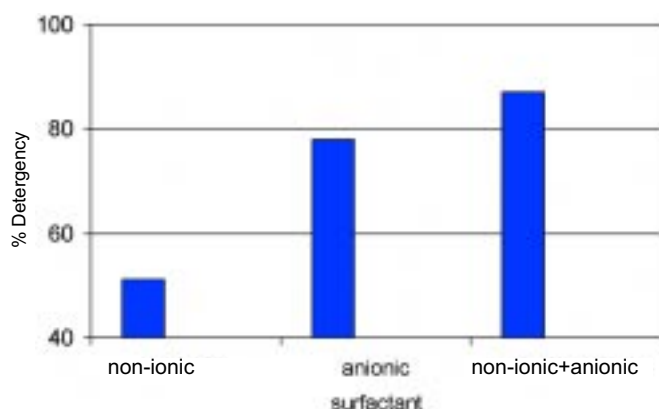


Figure 2. Detergency between surfactants and its combination.

The physical data for gel type waterless hand cleaner:

Form	: Gelled liquid
Solubility	: Soluble
pH	: 5-6
Viscosity	: 9342 cP
Volatility by volume	: <0.5%
Detergency	: Excellent



Figure 3. Palm-based waterless hand cleaner.

CONCLUSION

With the renewal and abundance availability of palm-based materials in the country, formulation of waterless hand cleaners of various forms may be another venue for value addition for the oleochemical downstream industry.

REFERENCE

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