Formulation Of Shampoo From Keratin Protein Atikah Bt Mad

Formulation Of Shampoo From Keratin Protein Atikah Bt Mad Formulation of Shampoo from Keratin Protein A Comprehensive Guide The incorporation of keratin protein into shampoos has become increasingly popular driven by consumer demand for hair strengthening and repair products This article delves into the formulation process of a keratinbased shampoo exploring the scientific principles and practical considerations involved While the specifics may vary depending on the desired product properties and target market this guide provides a solid foundation for understanding the key components and procedures We will avoid mentioning Atikah bt Mad directly as its unclear what role if any this individual plays in the formulation context unless further information is provided 1 Understanding Keratin and its Role in Hair Care Keratin is a fibrous structural protein comprising approximately 90 of human hair Its a complex protein composed of amino acids arranged in a specific helix and sheet configuration providing strength elasticity and resilience Damage to the hairs keratin structure caused by factors like heat styling chemical treatments and environmental stressors leads to dryness breakage and split ends Keratininfused shampoos aim to replenish and repair this damage by delivering hydrolyzed keratin keratin proteins that have been broken down into smaller peptides and amino acids These smaller molecules can penetrate the hair shaft more easily than intact keratin interacting with damaged areas and improving overall hair condition The degree of hydrolysis significantly impacts the efficacy of the keratin highly hydrolyzed keratin offers superior penetration but may be less stable in the final product 2 Key Ingredients and Their Functions A successful keratin shampoo formulation requires a careful selection of ingredients that complement the keratins properties and address specific hair care needs These ingredients typically include Hydrolyzed Keratin The primary active ingredient providing the hair strengthening and 2 repairing benefits Concentration will vary depending on the desired efficacy and cost Surfactants These are cleansing agents that remove dirt oil and product buildup from the hair and scalp Common examples include Sodium Lauryl Sulfate SLS Sodium Laureth Sulfate SLES and milder alternatives like cocoglucoside The choice of surfactant influences the shampoos lather cleaning power and potential for irritation Conditioning Agents These ingredients soften and detangle the hair counteracting the potential drying effects of surfactants Examples include cationic polymers silicones and natural oils like argan oil or jojoba oil Preservatives Essential for extending the shelf life of the shampoo by preventing microbial growth Common preservatives include parabens phenoxyethanol and sorbic acid Careful selection is crucial to minimize potential skin irritation pH Adjusters Shampoos

typically require a slightly acidic pH around 55 to mimic the natural pH of the hair and scalp minimizing irritation and maximizing keratin absorption Citric acid or lactic acid are commonly used Thickeners These ingredients increase the viscosity of the shampoo improving its texture and application Examples include polymers like guar gum or xanthan gum Fragrance and Color These are optional ingredients that enhance the sensory appeal of the product 3 Formulation Process A StepbyStep Guide The precise formulation process will depend on the specific ingredients and desired characteristics of the shampoo However a general process typically involves the following steps 1 Weighing and Measuring Accurately weigh and measure each ingredient according to the formulated recipe Precise measurements are critical for consistent product quality 2 Mixing the Aqueous Phase Dissolve watersoluble ingredients such as preservatives and pH adjusters in distilled water Gentle heating may be necessary to aid dissolution 3 Mixing the Oily Phase Combine oilsoluble ingredients such as oils and silicones in a separate container 4 Combining Phases Slowly add the oily phase to the aqueous phase under constant stirring This process requires careful control to prevent emulsion instability 5 Adding the Keratin Incorporate the hydrolyzed keratin into the mixture ensuring thorough dispersion The order of addition and method of incorporation may influence the final products texture and stability 3 6 Adding the Surfactants Introduce the surfactants gradually while continuously stirring This step is crucial for achieving the desired lather and cleaning power 7 Adding the Thickeners Incorporate the thickeners to achieve the desired viscosity 8 pH Adjustment Check the pH of the mixture and adjust as necessary using citric acid or sodium hydroxide 9 Homogenization Use a homogenizer or highshear mixer to create a smooth homogenous mixture ensuring uniform distribution of all ingredients 10 Filling and Packaging Fill the shampoo into appropriate containers and seal them properly to maintain product stability and hygiene 4 Quality Control and Testing Rigorous quality control testing is essential to ensure the safety and efficacy of the finished product This typically includes pH measurement Verifying that the pH falls within the optimal range Viscosity testing Assessing the flow and texture of the shampoo Stability testing Evaluating the products stability over time under various storage conditions Microbial testing Ensuring the absence of harmful microorganisms Sensory evaluation Assessing the products appearance fragrance and overall feel 5 Key Takeaways Hydrolyzed keratin is a crucial ingredient for hair strengthening and repair Proper ingredient selection and precise formulation are critical for achieving a highquality product Quality control testing is essential to guarantee product safety and efficacy Understanding the properties of different ingredients is key to optimizing the formulation process Mild surfactants and conditioning agents contribute to a gentler more effective shampoo 6 Frequently Asked Questions FAQs 1 Can I make a keratin shampoo at home While its possible to experiment with simple recipes creating a stable and effective keratin shampoo requires specialized equipment and expertise in cosmetic formulation Homemade versions may lack stability and may not deliver the desired results 4 2 What is the difference between hydrolyzed keratin and keratin protein Hydrolyzed

keratin consists of smaller peptides and amino acids allowing for better penetration into the hair shaft compared to intact keratin protein which is too large to effectively penetrate 3 Are there any potential side effects of using keratin shampoos In general keratin shampoos are considered safe for most people However some individuals may experience mild irritation or allergic reactions Patch testing before widespread use is recommended 4 How often should I use a keratin shampoo The frequency of use depends on individual hair type and needs It can be used as frequently as daily or as infrequently as once a week 5 How can I determine the optimal concentration of hydrolyzed keratin in my formulation This requires experimentation and testing Starting with a lower concentration and gradually increasing it while monitoring the effects on hair properties is a recommended approach Professional guidance from a cosmetic chemist is highly advised This article provides a comprehensive overview of keratin shampoo formulation Remember that formulating cosmetic products requires expertise and adherence to safety regulations This guide is for informational purposes and should not be considered a substitute for professional advice from a qualified cosmetic chemist or formulator

Keratin as a Protein BiopolymerFormulation of Hair Straightening Cream from Keratin ProteinComprehensive Biomaterials IITransglutaminaseAdvances in Medical Physics and Healthcare EngineeringInventions for IndustryTomatoesIMPACT OF BIS-(BETA-CHLOROETHYL) SULFIDE ON KERATIN PROTEIN AND INTERMEDIATE FILAMENTS IN CULTURED KERATINOCYTES AS INDICATED BY MONOCLONAL ANTIBODY BINDING.Formulation of Hair Straightening Cream from Keratin ProteinJournal of Biomimetics, Biomaterials & Tissue Engineering Vol. 15Keratins: Their Composition, Structure, and BiosynthesisAnnual Report - Division of Protein ChemistryAnnual Report - CSIRO Division of Protein ChemistryCatalog of Government Inventions Available for LicensingAntiquityAustralian Journal of Biological SciencesAustralian Journal of Scientific ResearchAmerican Journal of Veterinary ResearchJournal and Proceedings of the Royal Society of New South WalesTransactions Swati Sharma Suguna Jeganathan Kevin Healy V.A. Najjar Moumita Mukherjee Irene H. Wolgamot BETTY J. LOCEY Siti Aziemah Mohd Sidek Sooraj Hussain Nandyala R. D. B. Fraser CSIRO (Australia). Division of Protein Chemistry CSIRO (Australia). Division of Protein Chemistry Osbert Guy Stanhope Crawford Royal Society of New South Wales Biochemical Society (Great Britain)
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this book provides information about the sources structure and properties of keratin as well as its applications the extraction from different biomass sources e g feathers hairs nails horn hoof and claws as well as the characterization methods of these extracted materials are explained the development of bioproducts from keratins is challenging and limited since they are neither soluble in polar solvents nor in non polar solvents therefore the utilization of different microorganisms for the degradation of keratin is also discussed the main aim of this book is to highlight the unique features of keratin and to update readers with the possible prospects to develop various value added products from keratins the book is highly interesting to researchers working in industry and academia on bioproducts tissue engineering biocomposites biofilm and biofibers

a research was conducted on the formulation of hair straightening cream from keratin protein the keratin that used in this formulation was extracted from chicken feathers the keratin plays an important role during the hair straightening process in order to straighten the hair and reduce the damaged on the hairs our hair consists of mainly keratin but in normal condition the hair consists of alpha keratin the original configuration of the hair is held in place by the bonding found in the cortex layers of the hair there are four types of bonds which are hydrogen bond sugar bond cystine bond disulphide bond and salt bond the hair straightening cream will break the disulphide bonds in the hair during the hair straightening process and allowed the confirmation of the new disulphide bonds with the new arrangement thus giving the hair a new shape the formulation was made with the mixture of water based and oil based chemicals firstly the oil based and water based mixture were prepared separately at temperatures 60 70 c after the mixture was soluble the water based mixture poured into the oil based mixture at a temperature around 60 70 c the mixture then stirred immediately until the temperature dropped to 40 c finally the keratin protein and the fragrance were added into the mixture and the mixture was continuously stirred at room temperature for 2 hours the result shows that the formulation has the ability to permanently straighten the hair without the damage to the hair the sem analysis proven that the keratin can reduce the damaged to the hair during the straightening process the characterisation test to the hair straightening cream like ph analysis colour analysis centrifuge test ftir test viscosity test and cycle test freeze and thaw

shows that the cream is stable and within the standard range chicken feather is one of the important source of keratin this is a good idea because poultry feathers are dumped used for land filling incinerated or buried which involves problem in storage handling emission control and ash disposal therefore the use of the chicken feather in this project can reduce the waste disposal of the chicken feathers

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protein

a research was conducted on the formulation of hair straightening cream from keratin protein the extracted keratin protein from the chicken feathers helps in straightening without damage the hair the large number of chemicals in the hair products had changed

the normal structure of the hair and become unhealthy hence this formulation will produce an effective hair straightening cream that can straighten the hair and rebuild hair damaged firstly the phases of the solution phase i and phase ii was prepared by dissolving the chemicals together based on the water and oil system by put into the water bath at 65 c until all the chemicals had been soluble soluble phase i and ii were mixed together by stirring using the glass rod and continued stirring using a homogenizer mixer for a two hour clinical testing proved that this formulation only can temporarily straighten the hair for five to six hours and can soften curly and unmanageable hair by using the keratin in the formulation from this research can be concluded that this formulation needs more adjustment on the composition of chemicals to make it become permanent hair straightening cream and without damage the hair structure

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