

REVIEW ARTICLE

A review on oriflames bioclinic skin care products and their benefits

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ABSTRACT

Oriflames Bioclinic skin care products utilizes Cell Innov technology which combines 3 advanced skin-lifting actives- Pure Retinol, Hyaluronic Acid, and Contraction peptide. These work on a cellular level to repair and regenerate the skin's natural defence mechanisms. With this skin appears visibly lifted. No-spot technology clears pores and targets acne prone skin. Acne in adults is often caused by stress and hormonal fluctuation. Bioclinic Adult Skin Anti-Breakout featuring Centella Asiatica and Salicylic Acid reduces white/black heads, targets pimples, and fades away post-blemish scars. No-Spot technology with non comedogenic ingredients does not clog pores. No -Spot featuring best anti-adult breakout actives are Centella, Tamanu Oil and Salicylic Acid. This review attempts to guide the reader between the various Oriflames Bioclinic skin care products and their benefits, with a particular focus on Bioclinic Lifting Super Rich Repair Night Cream. Paper also deals with FTIR spectra of Bioclinic Lifting Super Rich Repair Night Cream. This research, along with better regulation and reporting, will enable consumers to choose products with confidence. This in turn will allow companies to benefit from these novel technologies in the long term while retaining customer confidence. FTIR can be routinely used to identify the functional groups and identification/quality control of raw material/finished products. FTIR spectra of Bioclinic Lifting Super Rich Repair Night Cream is obtained at room temperature by using an FTIR Spectrophotometer - Perkin Elmer - Spectrum RX-IFTIR. The spectra is collected in a range from 650 to 4000 cm^{-1} . Interpretation of FTIR Spectra of Bioclinic Lifting Super Rich Repair Night Cream shows presence of various functional groups such as Alcohols - Secondary CH-OH; Alkane - Iso - propyl, Tertiary butyl, Ethyl, n-propyl; Aldehydes - Aliphatic Aldehydes $-\text{CH}_2-\text{CHO}$, Aromatic Aldehydes $\text{C}_6\text{H}_5-\text{CHO}$; Ketones - Aromatic Ketones $-\text{C}_6\text{H}_4-\text{CO}-\text{C}$; Amines (cont) - $\text{C}_6\text{H}_5-\text{NH}-\text{R}$; Amines - $\text{C}_6\text{H}_5-\text{NH}_2$, $>\text{CH}-\text{NH}_2$.

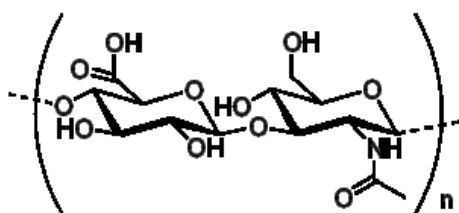
Key Words : Bioclinic lifting super rich repair night Cream, Retinol, Hydroluronic Acid, Contraction peptide, No-spot technology, Centella asiatica, Tamanu oil, Salicylic Acid, FTIR spectra

INTRODUCTION

Oriflames Bioclinic skin care products utilizes Cell Innov technology which combines 3 advanced skin-lifting actives- Pure Retinol, Hyaluronic Acid, and Contraction peptide. These work on a cellular level to repair and regenerate the skin's natural defence mechanisms. With this skin appears visibly lifted.

Pure retinol is a Vitamin A derivative. Retinol stimulates cell regeneration and builds collagen to diminish the appearance of fine lines, wrinkles, and age spots from both photo- and intrinsic aging. It also minimizes the appearance of pore size while correcting blemishes and blotchiness often associated with problematic skin.

Low molecular weight Hyaluronic Acid is an optimized ingredient that is designed to efficiently travel into the stratum corneum. It is an essential structural element of skin and acts as a water magnet, to reinforce the natural moisturizing level of the skin. Oriflame have discovered a new action of Low molecular weight Hyaluronic Acid, related to the increased contraction capacity of fibroblasts, which contributes to a lifting effect.



Hyaluronic acid

Contraction Peptide is a unique peptide which mimics the vital functions of skin cells to improve skin density. Incorporation of the contraction peptide into the Cell-Innov Technology gives an improved dermal strengthening effect by stimulating fibroblasts to produce collagen and increasing the contraction ability.

No-spot technology clears pores and targets acne prone skin. Acne in adults is often caused by stress and hormonal fluctuation. Bioclinic Adult Skin Anti-Breakout featuring Centella Asiatica and Salicylic Acid reduces white/black heads, targets pimples, and fades away post-blemish scars. No-Spot technology with non comedogenic ingredients does not clog pores. No -Spot featuring best anti-adult breakout actives are Centella, Tamanu Oil and Salicylic Acid.

Centella asiatica is a small, herbaceous, annual plant of the family Mackinlayaceae or subfamily Mackinlayoideae of family Apiaceae, and is native to India, Sri Lanka, northern Australia, Indonesia, Iran, Malaysia, Melanesia,

Papua New Guinea, and other parts of Asia. It is used as a medicinal herb in Ayurvedic medicine, traditional African medicine, and traditional Chinese medicine [1].

Tamanu oil is pressed from nuts of the Calophyllum tacamahaca tree. The nuts yield 70–75% of the greenish-yellow inedible oil [2]. The oil originates in Polynesia, where it continues to play an important cultural role [3]. Commercial exploitation of tamanu oil is predominantly for skin care. The oil contains the various fatty acids such as 38 % Linoleic acid, 34 % Oleic acid, 13 % Stearic acid and 12 % Palmitic acid.



Centella Asiatica

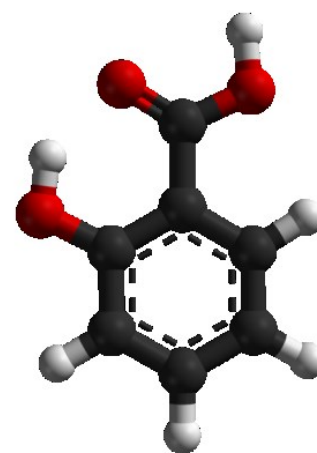


The fruit of the tamanu tree

Salicylic Acid is a key ingredient in many skin-care products for the treatment of seborrhoeic dermatitis, acne, psoriasis, calluses, corns, keratosis pilaris, and warts [4]. White willow (Salix alba) is a natural source of salicylic acid.



Salix alba



Salicylic Acid

This review attempts to guide the reader between the various Oriflames Bioclinic skin care products and their benefits, with a particular focus on Bioclinic Lifting Super Rich Repair Night Cream. Paper also deals with FTIR spectra of Bioclinic Lifting Super Rich Repair Night Cream. This research, along with better regulation and reporting,

will enable consumers to choose products with confidence. This in turn will allow companies to benefit from these novel technologies in the long term while retaining customer confidence.

1. Bioclinic Lifting Power Concentrate Day It is concentrated lifting day cream with Pure Retinol. It contains SPF 15 to enhance the skin's defence mechanisms. It works to deliver instant and lasting lifting action to sagging skin. Its ingredients are Aqua, Glycerin, Ethylhexyl Methoxycinnamate, Distarch Phosphate, Octocrylene, Butylene Glycol, Isohexadecane, Cyclopentasiloxane, Butyl Methoxydibenzoylmethane, C12-15 Alkyl Benzoate, Glyceryl Stearate Citrate, Cyclohexasiloxane, Stearyl Dimethicone, Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine, Ammonium Acryloyldimethyltaurate/ VP Copolymer, Caprylyl Glycol, Cetyl Alcohol, Stearic Acid, Stearyl Alcohol, Phenoxyethanol, Octadecene, Imidazolidinyl Urea, Parfum, Caprylic/Capric Triglyceride, Disodium EDTA, Methylparaben, Pisum Sativum Extract, Tocopherol, BHT, Sodium Ascorbate, Xanthan Gum, Retinyl Palmitate, Propylparaben, Sodium Hyaluronate, Sodium Hydroxide, Carbomer, Sodium Citrate, Sodium Lactate, Ethylparaben, Retinol, Polysorbate 20, Potassium Sorbate, Chlorphenesin, Palmitoyl Tripeptide-5, PEG-40 Hydrogenated Castor Oil, Palmitoyl Tripeptide-1, Palmitoyl Tetrapeptide-7 [5].

2. Bioclinic Lifting Super Rich Repair Night It is Nourishing lifting night cream which contains Pure Retinol that works on a cellular level to deliver deep lifting action to sagging skin. [6].

3. Bioclinic Adult Skin Anti-Breakout Day/Night It is potent anti-breakout day/night treatment. It's No Spot technology features Salicylic Acid and Centella to clear pores, target breakouts, and fades away post-blemish scars. Its ingredients are Aqua, Glycerin, PPG-3 Myristyl Ether, Octyldodecanol, PPG-5-Laureth-5, Steareth-2, Hydroxypropyl Starch Phosphate, Betaine, Butylene Glycol, Distarch Phosphate, Salicylic Acid, Cyclopentasiloxane, Calophyllum Inophyllum Seed Oil, Cetyl Alcohol, Pentaerythrityl Distearate, Steareth-21, Cyclohexasiloxane, Imidazolidinyl Urea, Parfum, Allantoin, Xanthan Gum, Sodium Hydroxide, Disodium EDTA, Centella Asiatica Leaf Extract, Propylene Glycol, BHT, Methylparaben [7].

4. Bioclinic Fade Away Active Essence Night It is concentrated cream which reduces pigmentation with patented technology and even out skin tone at the cellular level. It has ToneDown technology with lightening Dioic acid, melanin-inhibiting Rumex occidentalis, and flavonoids for younger look. Its ingredients are Aqua, PPG-5-Laureth-5, Glycerin, Butylene Glycol, Diisopropyl

Adipate, Glyceryl Stearate Citrate, Butyrospermum Parkii Butter, Cetyl Alcohol, Octadecenedioic Acid, Ammonium Acryloyldimethyltaurate/ VP Copolymer, Isopropyl Myristate, Parfum, Imidazolidinyl Urea, Caprylyl Glycol, Methylparaben, Propylparaben, BHT, Tetrahydroxypropyl Ethylenediamine, Rumex Occidentalis Extract, Ginkgo Biloba Leaf Extract, Phenoxyethanol [8].

5. Bioclinic Active Defence Shield Day SPF 45 It is double-action fluid cream which targets multiple forms of hyperpigmentation. Its ToneDown featuring patented technology promotes fading of pigmented skin cells and activates skin renewal which accelerates skin brightening. It has SPF 45 for high protection against sun-induced pigmentation. Its ingredients are Aqua, Butyl Methoxydibenzoylmethane, Octocrylene, Ethylhexyl Methoxycinnamate, Glycerin, Diisopropyl Adipate, PPG-5-Laureth-5, Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine, Cetearyl Glucoside, Methylene Bis-Benzotriazolyl Tetramethylbutylphenol (Nano), Dimethicone, Cetyl Alcohol, Stearyl Alcohol, Isodecyl Neopentanoate, Diisopropyl Sebacate, Lauryl Lactate, Butyrospermum Parkii Butter, Methyl Methacrylate Crosspolymer, Potassium Cetyl Phosphate, Caprylyl Glycol, Diethylhexyl Butamido Triazone, Tocopheryl Acetate, Octadecenedioic Acid, Isopropyl Myristate, Imidazolidinyl Urea, Methylparaben, Parfum, Decyl Glucoside, Dimethiconol, Acrylates/Vinyl Isodecanoate Crosspolymer, Propylparaben, Disodium EDTA, Sodium Hydroxide, Rumex Occidentalis Extract, Ginkgo Biloba Leaf Extract, Propylene Glycol, Xanthan Gum, BHT, Phenoxyethanol [9].

6. Bioclinic Circulation Eye Power Accelerator Day/Night It is concentrated eye treatment cream to target and fight under-eye dark circles. Centella improves microcirculation and prevents further dark circles. Its Micro-Bright technology fades discoloration, improves microcirculation and illuminates skin, leaving eyes younger-looking. Its ingredients are Aqua, Glycerin, Isohexadecane, Cyclopentasiloxane, Caprylic/Capric Triglyceride, Cyclohexasiloxane, Butylene Glycol, Hydrogenated Polydecene, Stearic Acid, Cetyl Alcohol, Stearyl Alcohol, Ammonium Acryloyldimethyltaurate/ VP Copolymer, Cetearyl Glucoside, Caprylyl Glycol, Sodium Stearoyl Glutamate, Phenoxyethanol, Imidazolidinyl Urea, Tocopheryl Acetate, Xanthan Gum, Disodium Edta, Polysorbate 20, Methylparaben, Steareth-20, Propylparaben, Citric Acid, Ethylparaben, Ascorbyl Methylsilanol Pectinate, Asiaticoside, Chlorhexidine Digluconate, N-Hydroxysuccinimide, Asiatic Acid, Sodium Methylparaben, Madecassic Acid, Potassium Sorbate, Sodium Bisulfite, Sodium Sulfite, Sodium Citrate, Chrysin, Palmitoyl Oligopeptide, Palmitoyl Tetrapeptide-3 [10]

METHODOLOGY

FTIR Spectrophotometer - Perkin Elmer - Spectrum RX-IFTIR

FTIR can be routinely used to identify the functional groups and identification/quality control of raw material/finished products. Spectrum RX-I offers fast throughput and rapid access to reliable and dependable IR results. High signal to noise ratio makes FTIR more useful for difficult samples. It has resolution of 1 cm^{-1} and scan

range of 4000 cm^{-1} to 250 cm^{-1} . In the normal mode around 10 mg sample is required in the form of fine powder. The sample can be analyzed in the form of liquid, solid and thin films also.

FTIR spectra of Bioclinic Lifting Super Rich Repair Night Cream is obtained at room temperature by using an FTIR Spectrophotometer - Perkin Elmer - Spectrum RX-IFTIR. The spectra is collected in a range from 650 to 4000 cm^{-1} .

RESULTS AND DISCUSSION

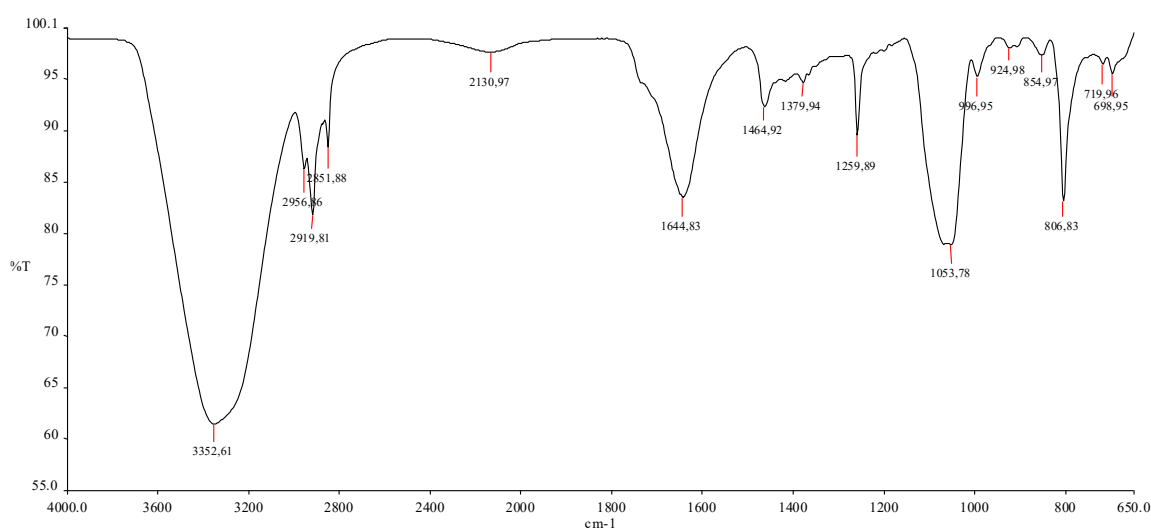


Figure 1 FTIR Spectra of Bioclinic Lifting Super Rich Repair Night Cream

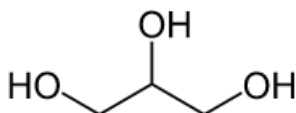
Figure 1 shows FTIR Spectra of Bioclinic Lifting Super Rich Repair Night Cream. Interpretation of FTIR Spectra of Bioclinic Lifting Super Rich Repair Night Cream can be done as follows:

S.N.	Spectral Wave number cm^{-1}	Region	Bond causing absorption	Pattern and Intensity of Band
1	3352.61		Alcohols - Secondary CH-OH	Broad and Strong Intensity
2	2956.86		Alkane - Iso - propyl, Tertiary butyl	Sharp and Moderate Intensity
3	2919.81		Alkane - Iso - propyl, Tertiary butyl	Sharp and Moderate Intensity
4	2851.88		Alkane - Ethyl, n-propyl, Iso - propyl, Tertiary butyl	Sharp and Moderate Intensity
5	2130.97		Aldehydes - Aliphatic Aldehydes $-\text{CH}_2-\text{CHO}$, Aromatic Aldehydes $\text{C}_6\text{H}_5-\text{CHO}$	Broad and Low Intensity
6	1644.83		-	Broad and Moderate Intensity
7	1464.92		-	Broad and Low Intensity
8	1379.94		-	Broad and Low Intensity
9	1259.89		Alkane - tertiary butyl, Aldehydes - Aromatic Aldehydes $\text{C}_6\text{H}_5-\text{CHO}$, Ketones - Aromatic Ketones - $\text{C}_6\text{H}_5-\text{CO}-\text{C}$, Amines (cont) - $\text{C}_6\text{H}_5-\text{NH}-\text{R}$	Sharp and Moderate Intensity
10	1053.78		-	Broad and Moderate Intensity
11	996.95		-	Broad and Low Intensity
12	924.98		-	Broad and Low Intensity
13	854.97		-	Broad and Low Intensity
14	806.83		Alkane - Ethyl, Amines $>\text{CH}-\text{NH}_2$, Amines - $\text{C}_6\text{H}_5-\text{NH}_2$	Sharp and Moderate Intensity
15	719.96		-	Broad and Low Intensity
16	698.95		-	Broad and Low Intensity

Interpretation of FTIR Spectra of Bioclinic Lifting Super Rich Repair Night Cream shows presence of various functional groups such as Alcohols - Secondary CH-OH; Alkane - Iso - propyl, Tertiary butyl, Ethyl, n-propyl; Aldehydes - Aliphatic Aldehydes -CH₂-CHO, Aromatic Aldehydes $\text{C}_6\text{H}_5\text{-CHO}$; Ketones - Aromatic Ketones - $\text{C}_6\text{H}_5\text{-CO-C}$; Amines (cont) - $\text{C}_6\text{H}_5\text{-NH-R}$; Amines - $\text{C}_6\text{H}_5\text{-NH}_2$, >CH-NH₂.

This supports presence of various ingredients as stated in Bioclinic Lifting Super Rich Repair Night Cream. Some of which are as given below:

1. Glycerin Glycerol also called as glycerin (Propane-1, 2, 3-triol) is a simple polyol compound. It is a colorless, odorless, viscous liquid that is sweet-tasting and non-toxic. The glycerol backbone is found in all lipids known as triglycerides. It is widely used in the food industry as a sweetener and humectant and in pharmaceutical formulations. Glycerol has three hydroxyl groups that are responsible for its solubility in water and its hygroscopic nature. [11, 12].

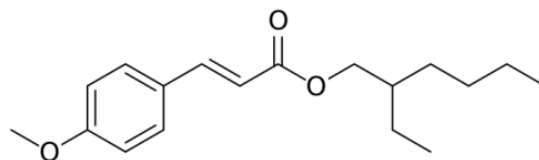


Glycerin

Glycerol is used in medical, pharmaceutical and personal care preparations, mainly as a means of improving smoothness, providing lubrication, and as a humectant. It is found in allergen immunotherapies, cough syrups, elixirs and expectorants, toothpaste, mouthwashes, skin care products, shaving cream, hair care products, soaps, and water-based personal lubricants. In solid dosage forms like tablets, glycerol is used as a tablet holding agent. For human consumption, glycerol is classified by the U.S. FDA among the sugar alcohols as a caloric macronutrient. Glycerol is a component of glycerin soap. Essential oils are added for fragrance. This kind of soap is used by people with sensitive, easily irritated skin because it prevents skin dryness with its moisturizing properties. It draws moisture up through skin layers and slows or prevents excessive drying and evaporation. Glycerol can be used as a laxative when introduced into the rectum in suppository or small-volume (2–10 ml) (enema) form; it irritates the anal mucosa and induces a hyper osmotic effect. [13] Taken orally (often mixed with fruit juice to reduce its sweet taste), glycerol can cause a rapid, temporary decrease in the internal pressure of the eye. This can be useful for the initial emergency treatment of severely elevated eye pressure. [14]

2. Ethylhexyl methoxycinnamate is an ingredient in some sunscreens and lip balms. It is a clear liquid that is insoluble in water. Its primary use is in sunscreens and

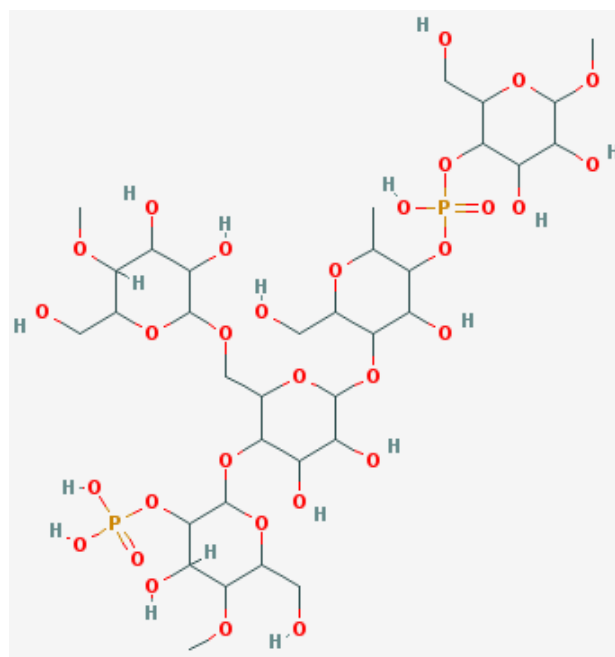
other cosmetics to absorb UV-B rays from the sun, protecting the skin from damage. It is also used to reduce the appearance of scars. [15] It is often used as an active ingredient in sunscreens combined with oxybenzone and titanium oxide for its use in protection against UV-B rays. [16]



Ethylhexyl methoxycinnamate

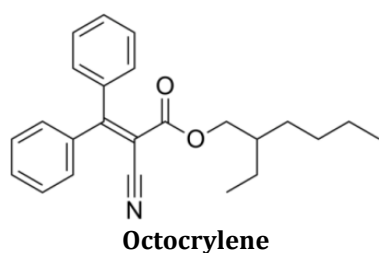
Different frequencies of ultraviolet (UV) light can cause different types of damage to our skin. UVB rays cause burning and the redness experienced from too much unprotected exposure to the sun. UVB encourages our skin to produce melanin, the pigment that gives our skin its natural colour. When skin begins to tan, it is a sign of damage and melanin is produced to protect skin. UVA exposure penetrates the layers of the skin very deeply, contributing to the undesirable effects associated with ageing. It causes deterioration of collagen and elastin fibres, causing the skin's support to collapse from the inside. This leads to wrinkles on the surface of the skin. Butyl methoxydibenzoylmethane protects the skin from damaging UVA rays. Ethylhexyl methoxycinnamate and butyl methoxydibenzoylmethane in combination shield the skin from the damaging effects of the sun. [17],

3. Distarch Phosphate It is formed by the cross-linking of starch with sodiummetaphosphate. It is used as anticaking agent, binder, absorbent.

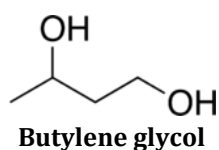


Distarch Phosphate

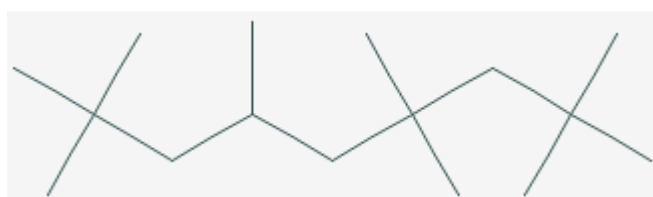
4. Octocrylene is used as an ingredient in sunscreens and cosmetics. It is an ester formed by the condensation of a diphenylcyanoacrylate with 2-ethylhexanol. It is clear, colourless, viscous, oily liquid. The extended conjugation of the acrylate portion of the molecule absorbs UVB and short-wave UVA (ultraviolet) rays with wavelengths from 280 to 320 nm, [18] protects the skin from direct DNA damage. The ethylhexanol portion is a fatty alcohol, adding emollient and oil-like (water resistant) properties. This organic compound can penetrate into the skin where it acts as a photosensitizer. This results in an increased production of free radicals under illumination. [19]



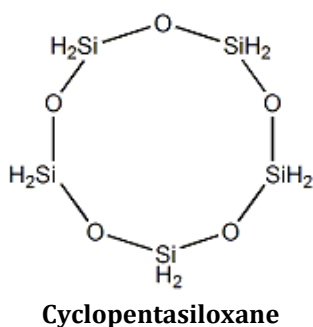
5. Butylene glycol It is used as a skin conditioning agent (humectant), solvent and is used to decrease the overall viscosity of a product.



6. Isohexadecane Isohexadecane (C₁₆H₃₄) is a branched chain hydrocarbon with 16 carbons. It is a component of petroleum used as a skin-conditioning agent in personal care products.

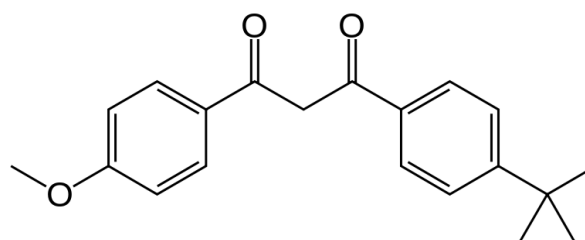


7. Cyclopentasiloxane It is used in cosmetic and personal care products.



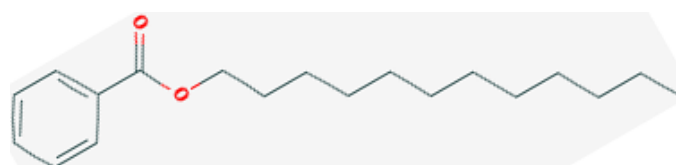
8. Butyl Methoxydibenzoylmethane Avobenzone (trade names Parsol 1789, Milestab 1789, Eusolex 9020, Escalol 517, Neo Heliopan 357, Butyl Methoxydibenzoylmethane) is an oil-soluble ingredient used in sunscreen products to absorb the full spectrum of UVA rays.

In cosmetics and personal care products, Butyl Methoxydibenzoylmethane is used in the formulation of sun protection products, as well as bath, skin, cleansing, hair, nail and fragrance products. In the United States, when this ingredient is used in sun protection products, it will be listed on the label as Avobenzone. Avobenzone, when applied to the skin, absorbs UV rays. In addition to causing sunburn, UV radiation is a significant cause of premature aging of the skin and contributes to the development of melanoma and other forms of skin cancer. Butyl Methoxydibenzoylmethane can also be used to protect cosmetics and personal care products from deterioration by absorbing, UV rays. Butyl Methoxydibenzoylmethane has the ability to absorb ultraviolet light over a wide range of wavelengths and then convert it to less damaging infrared radiation (heat). [20]



Butyl Methoxydibenzoylmethane

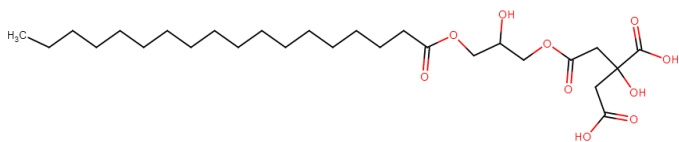
9. Alkyl Benzoate This ingredient is composed of benzoic acid and long-chain (C12-15) alcohols. It is used as Skin-Conditioning Agent - Emollient; antimicrobial; skin conditioning. [21]



Alkyl benzoate

10. Glyceryl Stearate Citrate

It is referred to as Glyceryl Diesters. It is made of glycerin and fatty acids. These ingredients are used in skin care products, moisturizers, and lipstick and other makeup products which gives the skin a soft and smooth appearance.



Glyceryl Stearate Citrate

CONCLUSION

FTIR can be routinely used to identify the functional groups and identification/quality control of raw material/finished products. Interpretation of FTIR Spectra of Bioclinic Lifting Super Rich Repair Night Cream shows presence of various functional groups such as Alcohols - Secondary CH-OH; Alkane - Iso - propyl, Tertiary butyl, Ethyl, n-propyl; Aldehydes - Aliphatic Aldehydes - CH₂-CHO, Aromatic Aldehydes c1ccccc1 - CHO; Ketones - Aromatic Ketones - c1ccccc1-CO- C; Amines (cont) - c1ccccc1-NH-R; Amines - c1ccccc1-NH₂, >CH-NH₂.

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