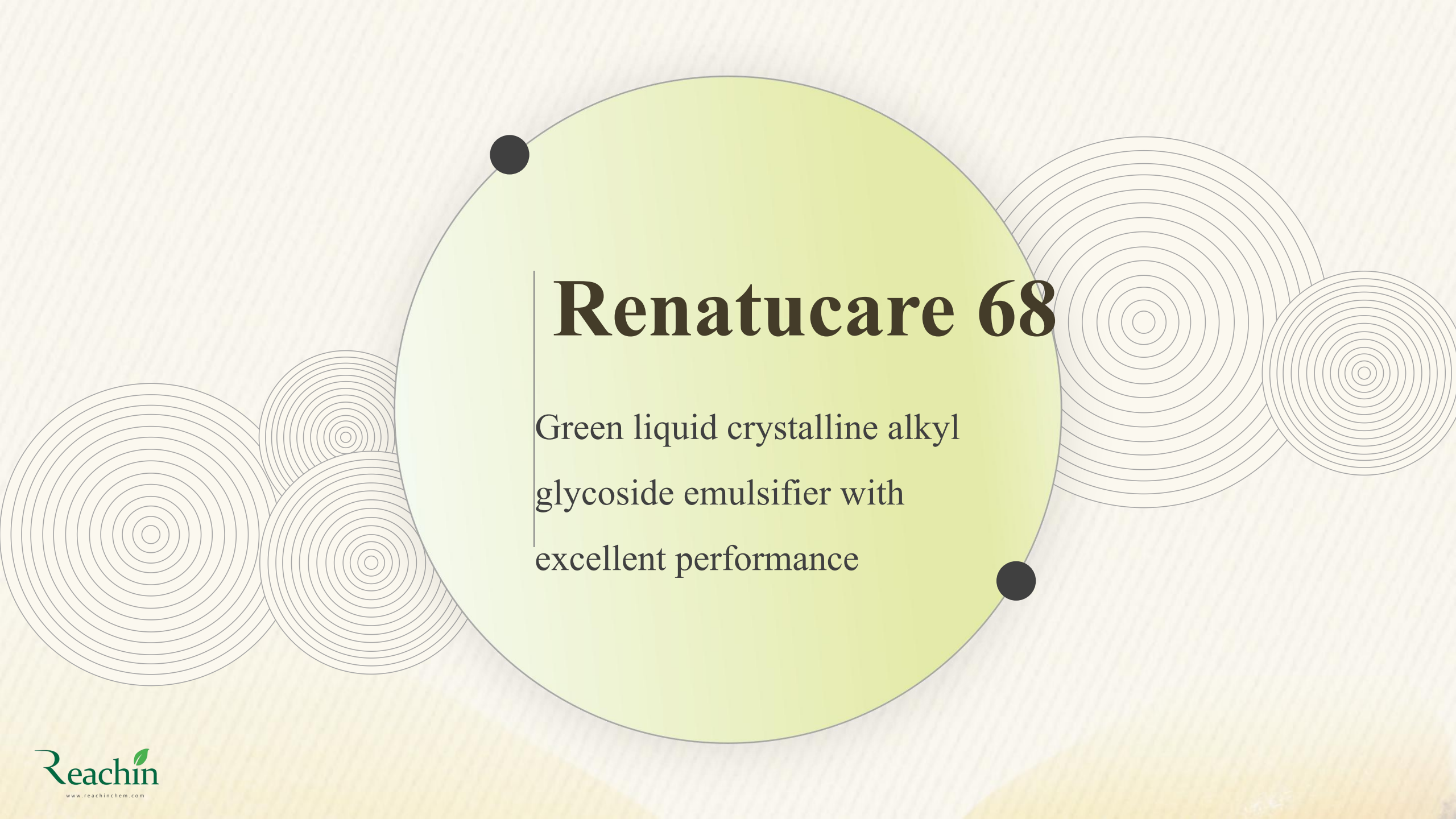




Renatucare 68

Green liquid crystalline alkyl
glycoside emulsifier with
excellent performance

Alkyl glycoside emulsifier

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Application
Introduction

Renatucare 68

INCI: Cetearyl alcohol & cetearyl glucoside

- **Renatucare 68** is a new non-ionic emulsifier that can be used in the "natural and green" concept with glycolipid structure to create rich liquid and thick cream like paste.
- **Renatucare 68** can emulsify various oils, such as silicone oil or vegetable oil.
- **Renatucare 68** has good purity and good ion tolerance, which makes lotion have good stability.

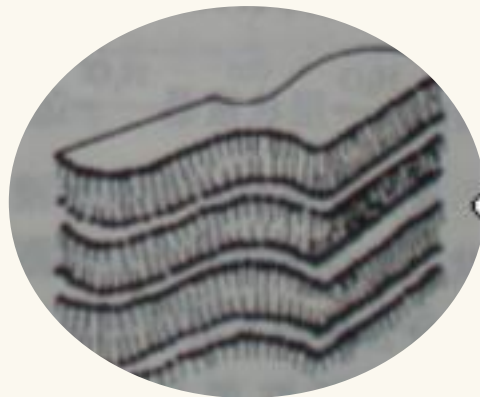
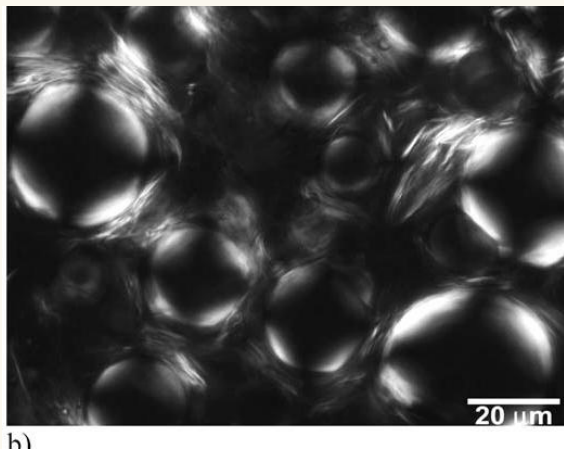
Renatucare 68

——Alkyl glycoside emulsifier





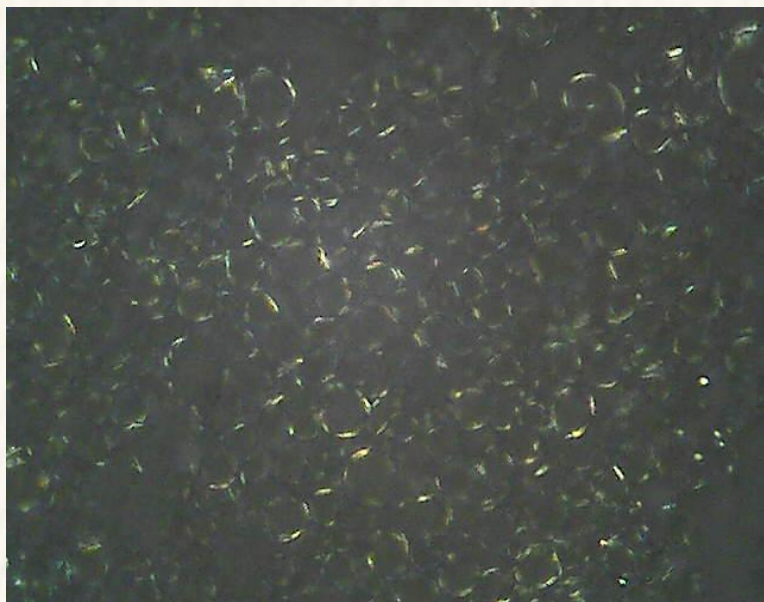
1.Product features



- ★Glycosidic non-ionic, green, completely degradable
- ★Good compatibility and excellent emulsifying performance
- ★Stable raw material structure
- ★Forming liquid crystal:Moisturizing, slow release of functional ingredients, provide excellent skin feeling

— ★ Easy to form liquid crystal

Liquid crystal structure of **Renatucare 68** system under polarized light microscope:



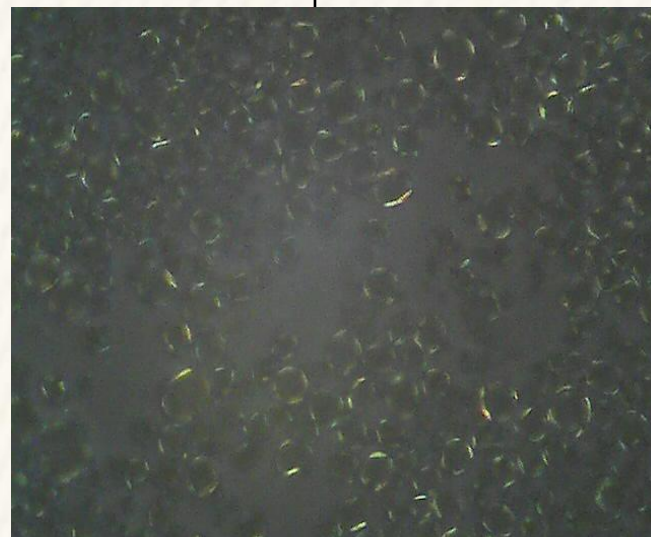
Before
application

Formula system:

Mineral oil(26#)--20%

Renatucare 68--5%

Water--75%



After application



Moisturizing

- Replenish moisture for skin
- Reduce transdermal volatilization of water (TEWL = transdermal water loss)



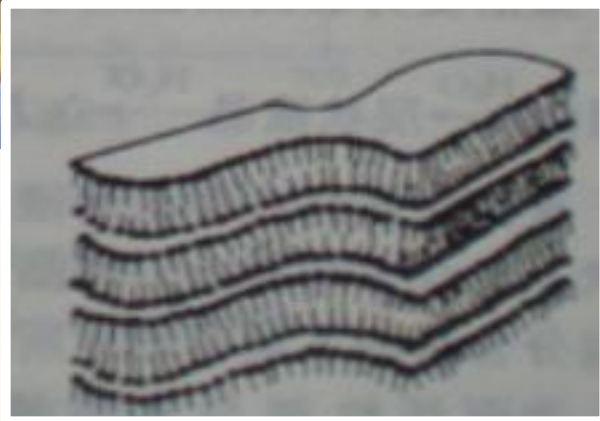
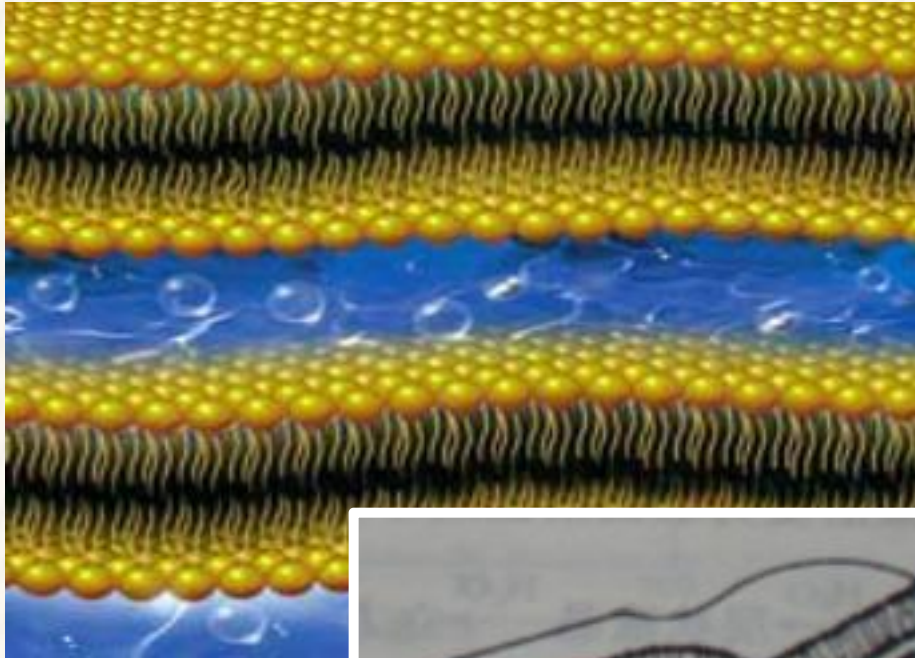
Slow release of functional ingredients

- **For oil soluble components:**

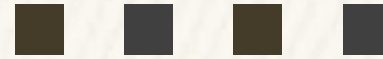
Multilayer liquid crystal can significantly reduce the loss of drugs at the interface and effectively control the release of drugs. (e.g. slow release of functional ingredients and essence)

- **For water-soluble components:**

The alternating multi-layer structure of liquid crystals can effectively encapsulate the active substance and achieve the effect of gradual absorption and release during the use.



★ Provide excellent skin feeling



- The liquid crystal structure has a sandwich like structure, which is very similar to the phospholipid layer of the skin.
- It has good skin affinity (the lipid bilayer in the skin has a liquid crystal like structure), and the skin feels particularly smooth and refreshing during application



Good compatibility and excellent emulsifying performance

- ① It has good compatibility and emulsifying ability with vegetable oil, mineral oil, silicone oil, sunscreen, powder, pigment and various active ingredients (plant extract and fruit acid).



Stable raw material structure

- ① Glycoside ether bond (- C-O-C -) linkage, and hydrolysis will not occur under strong acid and strong base conditions

① **Renatucare 68** can emulsify various oils and fats, including vegetable oil, synthetic oil, mineral oil and silicone oil

Formula system:

- Oil--20%
- **Renatucare 68**--5%
- Preservative--0.2%
- Water--74.8%

Grease	Appearance	Viscosity(mpa.s) (M4V12)	Particle size(μm)
Prunus amygdalus dulcis (sweet almond) oil	White and bright paste	8500	5-8,uniformity
Synthetic jojoba oil	Light yellow paste	11500	3-4,uniformity
Squalane	White and bright paste	13000	2-3,uniformity
Mineral oil(26#)	White and bright paste	11000	8-12,uniformity
*Dimethicone(Reshine 100)	White translucent paste	25000	About 15,uniformity

②Renatucare 68 can emulsify products containing sunscreen ingredients well

Experimental formula:

Renatucare 68--5%

Caprylic/capric triglyceride--20%

Sun-screening agent--5%

Preservative--0.2%

Water--69.8%.

Sunscreen	Appearance	Viscosity	Particle size(μm)
*Ethylhexyl Methoxycinnamate(Reachin UVSORB MCX)	White and bright paste	10500	3-4, uniformity
*Butyl Methoxydibenzoylmethane(Reachin UVSORB1789)	White and bright paste	8500	3-4, uniformity
*Titanium Dioxide(Reachin TR 2TS)	White and bright paste	13500	2-3, uniformity



2.Comparison with similar products

Manufacturer	Product Name	Product features
A	M68	25% alkyl glycoside content, easy to form liquid crystal
B	PL68/50	50% alkyl glycoside content, which can form liquid crystal. In many formulations, K12 and other anions SAA need to be compounded due to instability
C	CG90	92% alkyl glycoside content, high water solubility, low viscosity of applied products (HLB = 11), and the most difficult to produce liquid crystals

The product features of **Renatucare 68** and M68 are highly similar

Comparison with similar products (Sample A)

Index comparison

Index	Renatucare 68	Sample A
Appearance(25°C)	White to light yellow flake or granular solid	White to yellowish granules
Color(Gardener) max	1.0	1.0
Hydroxyl value (mg KOH/g)	270-290	270-290
pH(5%aqueous solution)	5.5-7.5	5.5-7.5
melting point(°C)	64-70	61-65
acid value(mg KOH/g)max	1.0	0.5
Moisture(%)max	0.65(Measured value)	1.00
Iodine value	1(Measured value)	≤1



Comparison with similar products (Sample A)- Product application formula

Process:

- Add phase A dissolved and dispersed uniformly at 75 °C into phase B heated to 75 °C , stirred for 10min
- Homogenized at 13000rpm for 8min, stirred and cooled to 45 °C.
- Add phase C, stirred and cooled evenly.

Phase number	Name of raw material	%
A	Mineral oil(26#)	20
	Renatucare 68/Sample A	5
B	Water	To 100
C	Preservative	0.2



Comparison with similar products (Sample A)-Application results

Conclusion:

Emulsifying ability, product appearance and skin feeling are similar

Comparison items	Renatucare 68	Sample A
Appearance	White and bright paste	
Particle size	8-12 μm uniform particles	
pH	6.62	6.68
Skin feeling	Soft and refreshing skin feeling	
Stability (48 °C)	Stable for two months	



Comparison with similar products (Sample A)-Viscosity test comparison

Application formula →

Viscosity test:

Sample	Viscosity(M6V20)
Renatucare 68	24750
SampleA	28000

Conclusion:

In terms of formula consistency, resense 68 has a slightly lower consistency.

Phase number	INCI Name	%
A	Cetearyl alcohol	3.5
	*Cetearyl Alcohol & Cetearyl Glucoside(Renatucare 68/SampleA)	2%
	Glyceryl stearate	0.5
	*PEG-100 Stearate & Glyceryl Stearate(Resense 165A)	1
	Squalane	5
	*Caprylic/capric triglyceride(Regrease GTCC)	5
	*Ethylhexyl palmitate(Regrease OP)	3
	Hydrogenated palm kernel oil	2
	*Dimethicone(Reshine 100)	1
B	Water	To 100
	Glycerin	7
C	*Reanti PCH	0.8



Product application (Sample S) - Application results

Emulsion appearance

Renatucare 68



Sample S



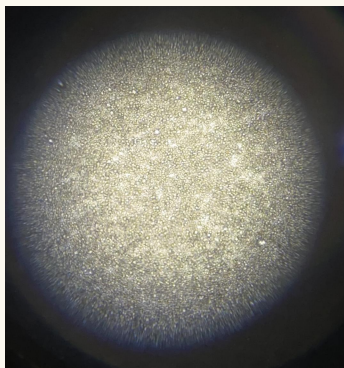
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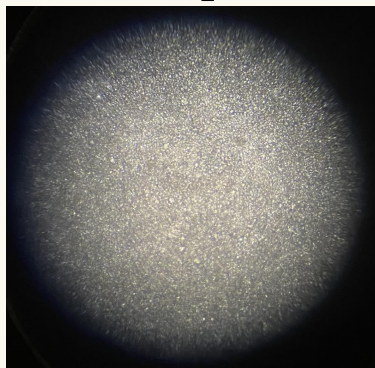
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4

Renatucare 68



Sample S



Electron micrograph of
emulsion particle size

Conclusion: the emulsification particle
size and emulsification appearance are
very close

3.Examples of application in cosmetics

*Because the liquid crystal structure of alkyl glycosides can bring moisturizing, slow-release of functional ingredients, and provide superior skin feeling for products, they are often used in high-end functional products.

Renatucare 68

——Alkyl glycoside
emulsifier



3.Examples of application in cosmetics



Neutrogena Ageless Intensives Anti-Wrinkle Deep Wrinkle Daily Moisturizer

Active Ingredients: Avobenzone (2%), Homosalate (7%), Octisalate (4%), Octocrylene (1.5%), Oxybenzone (2%)

Inactive Ingredients: Water, Glycerin, C12 15 Alkyl Benzoate, **Cetearyl Alcohol**, Silica, Diethylhexyl 2,6 Naphthalate, Glyceryl Stearate, PEG 100 Stearate, Caprylyl Glycol, Erythorbic Acid, Retinol, Polysorbate 20, Sodium Hyaluronate, Dimethicone, **Cetearyl Glucoside**, Benhenyl Alcohol, Arachidyl Glucoside, Acrylates/C10 30 Alkyl Acrylate Crosspolymer, Dipotassium Glycyrrhizate, Triethanolamine, 1,2 Hexanediol, Methylparaben, Methylisothiazolinone, Propylparaben



3.Examples of application in cosmetics



Olay Regenerist Micro-sculpting Cream

Water, Glycerin, Isohexadecane, Niacinamide Isopropyl Isostearate, Aluminum Starch Octenylsuccinate, Nylon 12, Dimethicone, Tocopheryl Acetate Camellia Sinensis Leaf Extract Aloe Barbadensis Leaf Elastin, Allantoin, Stearyl Alcohol, Polyethylene, Cetyl Alcohol, Sodium Acrylates Copolymer, Behenyl Alcohol, Benzyl Alcohol, Caprylic/Capric Triglycerides, Polyacrylamide, Dimethiconol, PEG 100 Stearate, Stearic Acid, Disodium EDTA, **Cetearyl Glucoside, Cetearyl Alcohol**, Citric Acid, C12 13 Pareth 3, Laureth 7, C13 14 Isoparaffin, Sodium Hydroxide, Ammonium Polyacrylate, Phenoxyethanol, Sorbic Acid, Butylparaben, Ethylparaben, Isobutylparaben, Methylparaben, Propylparaben, Sodium Benzoate, Mica, Tin Oxide, Titanium Dioxide, Fragrance



3.Examples of application in cosmetics



CLINIQUE ALL ABOUT EYES RICH

Water, Butyrospermum parkii, **Cetearyl alcohol**, Hydrogenated polyisobutene, Phenyl trimethicone, Dipropylene glycol, Polyglyceryl-3 beeswax, Polybutene, Sucrose, Cetyl esters, Polymethyl methacrylate, **Cetearyl glucoside**, Butylene glycol, Tocopheryl acetate..

Application Introduction

Process:

1. High temperature emulsification:

Emulsification temperature shall reach 75-80 °C

2. Strong energy input:

In order to obtain a fine and uniform emulsion, high speed homogenization is required after emulsification.

3. Slow stirring during cooling:

During the cooling process, the liquid crystal of the system will gradually form, and strong stirring should be avoided

No damage to the ordered structure of liquid crystal.

Application scope:

- Moisturizing lotion and cream
- Sunscreen Products
- Hairdressing products
- Other functional products

Recipe example:

Example 1: refreshing moisturizing lotion

Example 2: refreshing moisturizing cream

Hexapeptide anti-wrinkle cream

	INCI Name	Percentage	Trade Name	Function
A	Water	To 100		Solvent
	Butylene Glycol	3.0		Moisturizer
	Xanthan gum	0.1		Thickener
	* Sodium Polyglutamate	0.05	Reaqua PGA	Moisturizer
	* Sodium Hyaluronate	0.05	Reaqua HA	Moisturizer
	Glycerin	2.0		Moisturizer
B	* Cetearyl Alcohol & Cetearyl Glucoside	2.0	Renatucare 68	Emulsifier
	Cetearyl Alcohol	4.0		Emulsifier
	* Caprylic/capric Triglyceride	5.0	Regrease GTCC	Emollient
	Dicaprylyl carbonate	3.0		Emollient
	Butyrospermum Parkii(shea) butter	1.0		Emollient
	Glyceryl Stearate	1.0		Emulsifier
	* Coco-Caprylate/Caprates	3.0	Regrease 810C	Emollient
C	* Hydroxyethyl Acrylate /Sodium Acryloyldimethyl Taurate Copolymer & Coco-Caprylate/Caprates & Polyglyceryl-10 Laurate	1.0	Repoly 625	Emulsifier
D	* Acetyl hexapeptide-8	3.0	Repeptide AGE	Anti-wrinkle
	Tocopherol	1.0		Antioxidant
	* Beta-Glucan	3.0	Reactive Oat Beta-Glucan	Moisturizer
	Fragrance	0.1		Fragrance
	* Caprylhydroxamic Acid & 1,2-Hexanediol & Propylene Glycol	1.0	ReantiCHP	Preservative
	0.1%Lemon yellow	0.2		Pigment

Trial sheet day cream with SPF-15

	INCI Name	Percentage	Trade Name	Function
A	C12-15 Alkyl Benzoate&Titanium Dioxide&PEG-30 dipolyhydroxystearate	4.0		Chemical sunscreen
	Zinc Oxide&C12-15 Alkyl Benzoate&&Polyglyceryl-6 Polyricinoleate&Triethoxycaprylylsilane	4.3		Chemical sunscreen
	* Phenyl Trimethicone	1.0	Reshine PTM	Emollient
	* Cetearyl Alcohol & Cetearyl Glucoside	1.0	Renatucare 68	Emulsifier
	* PEG-100 Stearate & Glyceryl Stearate	2.0	Resense 165A	Emulsifier
	Cetearyl Alcohol	3.0		Emulsifier
	Isopropyl Myristate	1.0		Emollient
	* Caprylic/capric Triglyceride	3.0	RegreaseGTCC	Emollient
	Dicaprylyl Carbonate	2.5		Emollient
	Hydrogenated wheat germ oil	0.5		Emollient
	Prunus amygdalus dulcis (sweet almond) oil	0.5		Emollient
B	Water	To 100		Solvent
	Glycerin	3		Moisturizer
	Disodium EDTA	0.1		Chelating agent
C	* Polyacrylamide & C13-14 Isoparaffin & Laureth-7	2.0	Repoly 315	Emulsifier
D	Nicotinamide	2.0		Whitening agent
	Panthenol	0.5		Moisturizer
	Sodium Hyaluronate	0.05		Moisturizer
	Tocopherol	0.1		Antioxidant
E	* Phenoxyethanol&Chlorphenesin&Propanediol&Methylparaben&Benzyl Alcohol	0.5	Reanti PCMP	Preservative
	Fragrance	0.3		Fragrance

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The background features a light beige color with a subtle, fine-lined pattern. A large, solid white circle is centered on the page. To the left and right of this central circle are several overlapping circles of varying sizes, each composed of many thin, concentric lines. Two solid black dots are positioned on the left and right edges of the central white circle.

Thanks for watching

If you are interested, please feel free to contact us
