

UV cut dispersion

나노크리스탈 (주)
NANOCRYSTAL CO., LTD.



2020-09-10



NANOCRYSTAL CO., LTD.

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Company Introduction

02

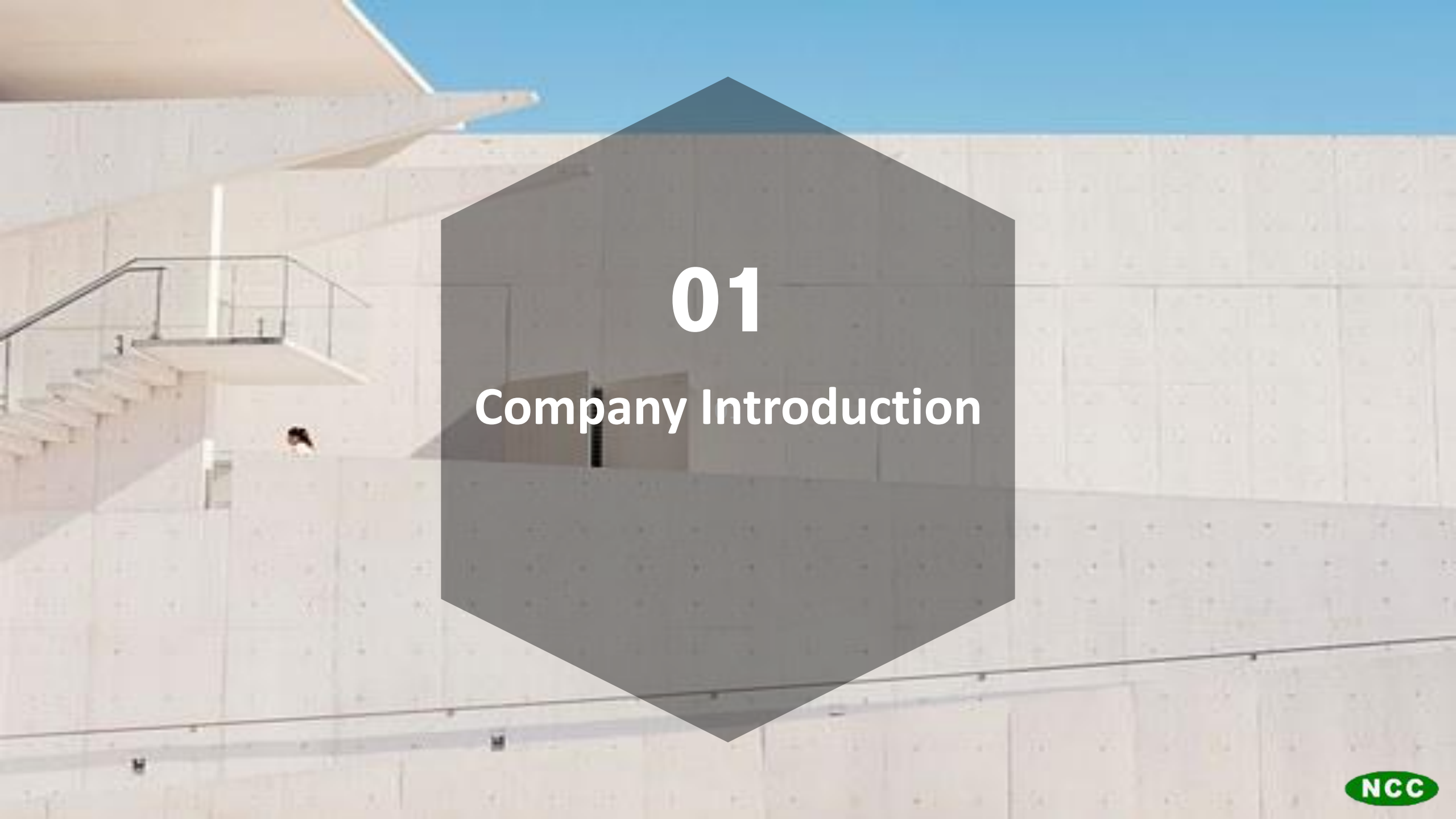
UV Cut Filter

03

TiO₂ Dispersion-NCTI Series

04

ZnO Dispersion-NCZN Series

A photograph of a modern building with a light-colored, textured facade. A large, dark gray hexagonal graphic is centered over the image. The number '01' is written in white inside the hexagon. To the left of the hexagon, there is a balcony with a glass railing and a set of stairs. A person is visible on the balcony. The sky is clear and blue.

01

Company Introduction

About us

Harnessing the science and technology of today for a better beauty tomorrow



Courage to challenge



Creative spirit

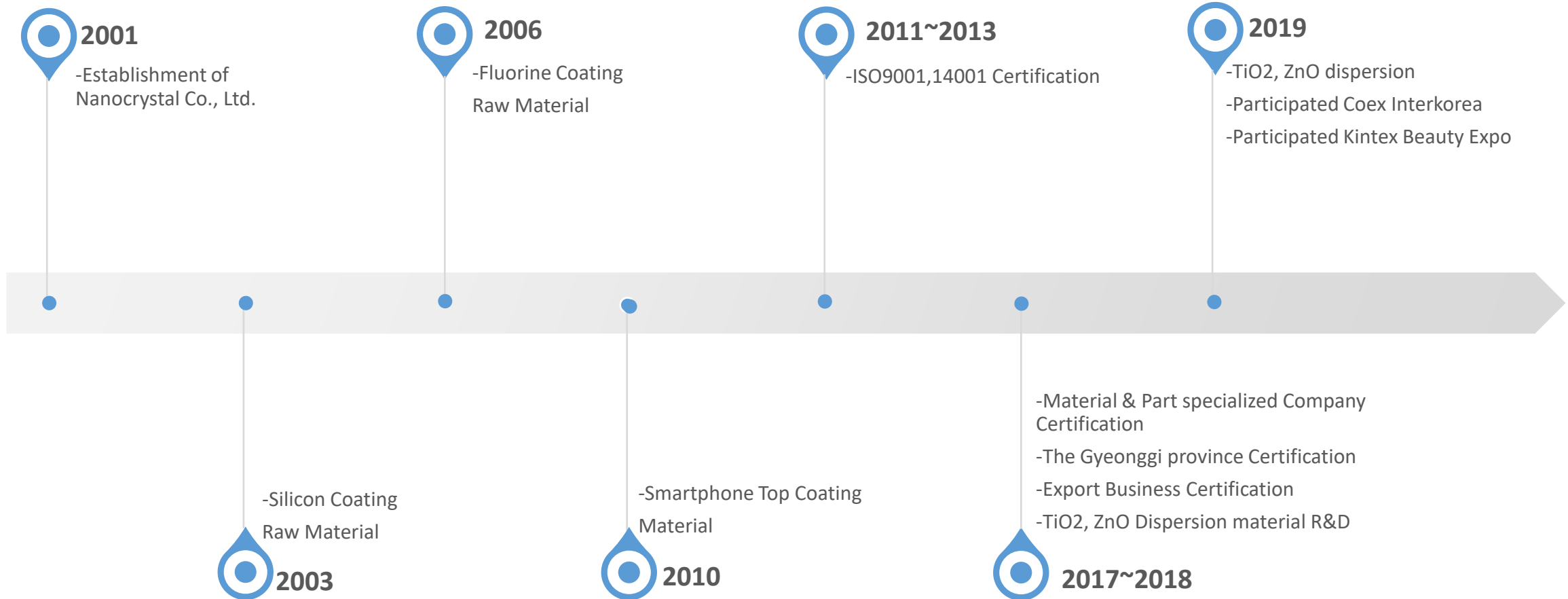


Faith & Trust in Humanity



Honesty

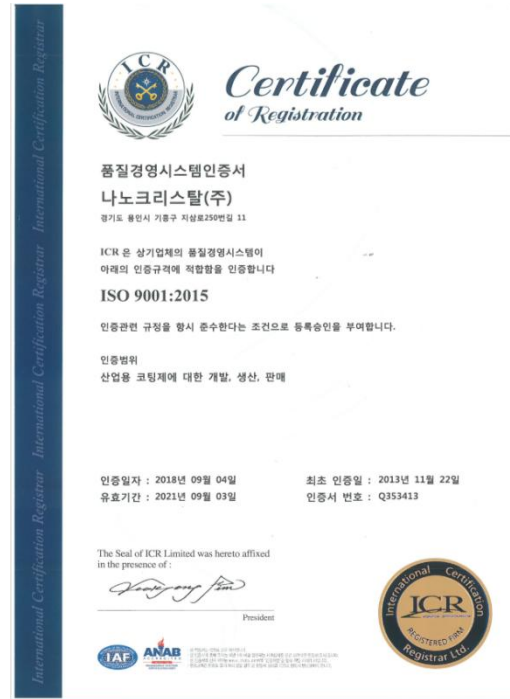
Company History



Patent & Certification



ISO 14001:2015



ISO 001:2015



LAB Certification

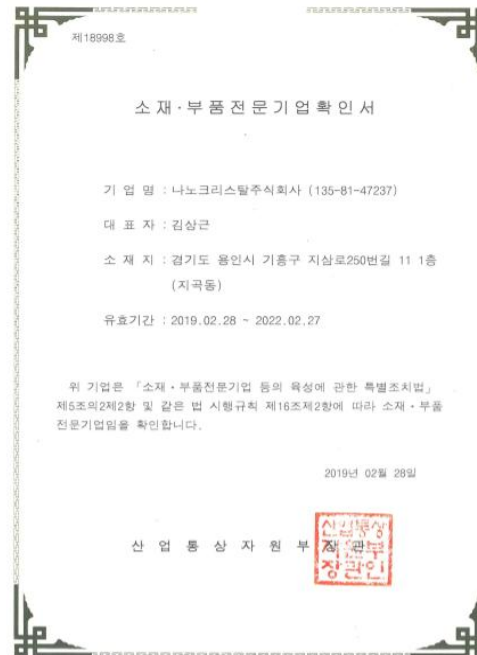


Promising Small &
Medium Business
In Gyeonggi Province

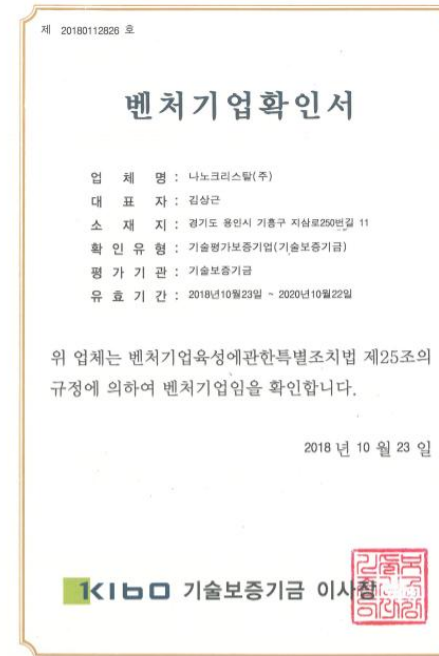
Patent & Certification



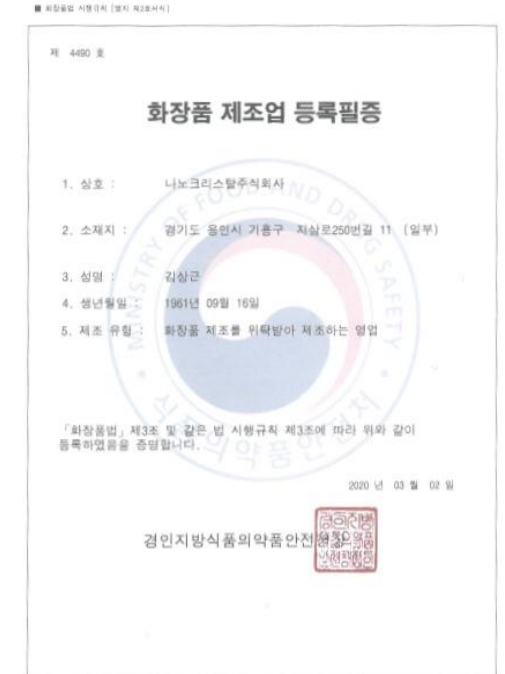
Promising Export Firm



Material Parts
Specialization



Venture business
certificate



Cosmetics
manufacturing license

Equipments

Facility possession status

Equipment	Product	Location	Usage	Standard	Producer
UV-visible	Mega-U600	Laboratory	Measuring instrument	190 ~ 1,100 nm	Scinco
Particle size analyzer	Zetasizer Nano S90	Quality control room	Measuring instrument	0.3~5,000nm	Malvern Panalytical
Colorimeter	CM3600A	Laboratory	Measuring instrument	360nm ~740nm	Konica minolta
HOMOMIXER	Mark II Model2.5	Laboratory	Cosmetic manufacturing	500-12,000rpms	PRIMIX
Viscometer	DVEELVT J0	Laboratory	Measuring instrument	15~2,000,000cp	Blookfield

Equipments

Facility possession status

Equipment	Product	Location	Usage	Standard	Producer
Thermogravimetric analysis	SETESYS TGA	Quality control room	Tremogravimetric analyzer	1750°C	Setaram Instrumentation
Temperature& Humidity Chamber	TH-GU300	Laboratory	Enough experiment	300L	Dongbang Hitech Inc
Microfluidizer	APV2000	Laboratory	Dispersion	2000bar	APV
Nano Disperser	ISA-N-400	Dispersion room	Dispersion	30,000psi	lishin Autoclave
AG-HOMOMIXER	AGITATER	Dispersion Room	Cosmetic manufacturing	50L	Hanyang

Equipments

Facility possession status

Equipment	Product	Location	Usage	Standard	Producer
High shear fluid processor	Mini DeBEE	Dispersion room	Dispersion	1L(45,000psi)	Be International
Clean bench	VS-1400LS	Microbiological laboratory	Aseptic workbench	1300*810*1850m m	Vision SCIENTIFIC
Incubator	HQ-BD 84	Microbiological laboratory	High temperature	84L	HST
BOD Incubator	HQ-BDI 84	Microbiological laboratory	For low temperature	84L	HST
Autoclave	AC-01	Microbiological laboratory	Sterilization	60L	JEIOTECH

Equipments



Mega-U600



ZetasizerNano S90



CM3600A

Equipments



Mark II Model 2.5



DVEELVT J0



SETESYS TGA

Equipments



TH-GU300



APV2000



Nano Disperser ISA-N-400

Equipments



AG-HOMOMIXER



Mini DeBEE

Equipments



Clean bench VS-1400LS



HQ-BD 84



HQ-BDI 84



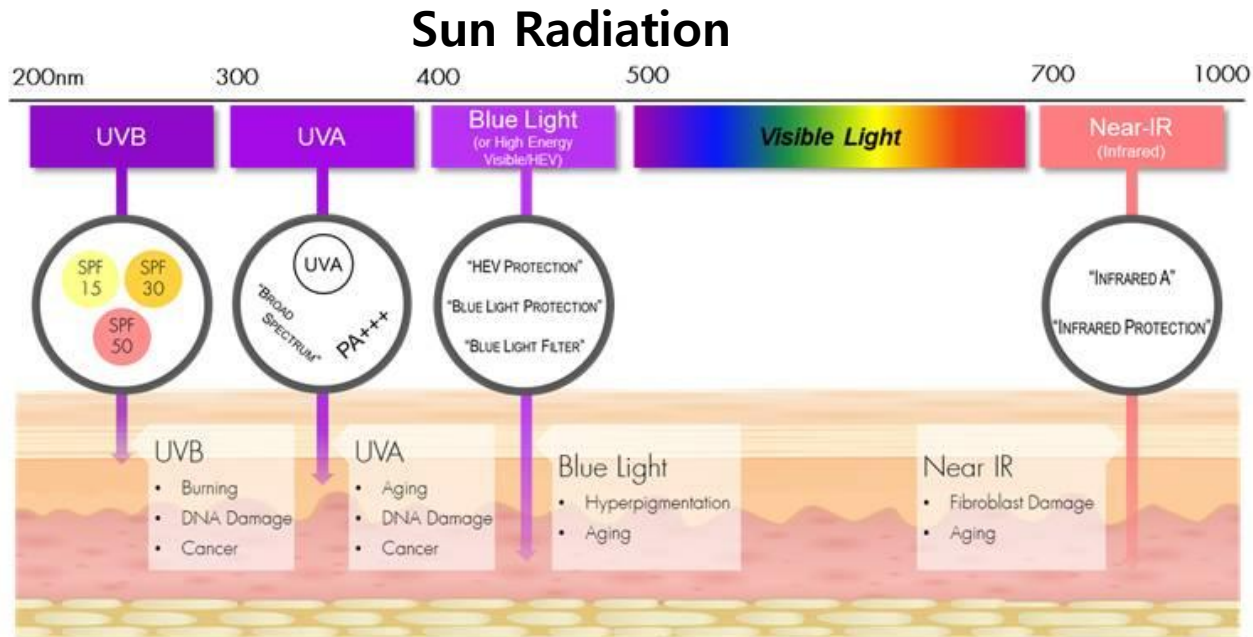
Autoclave AC-01

A pair of dark, tortoiseshell-patterned sunglasses is positioned in the foreground, resting on a light-colored, woven beach mat. The sunglasses are angled slightly to the right. In the background, several closed beach umbrellas are visible against a clear blue sky. A semi-transparent dark blue hexagonal shape is overlaid on the image, containing the text '02' and 'UV Cut Filter'.

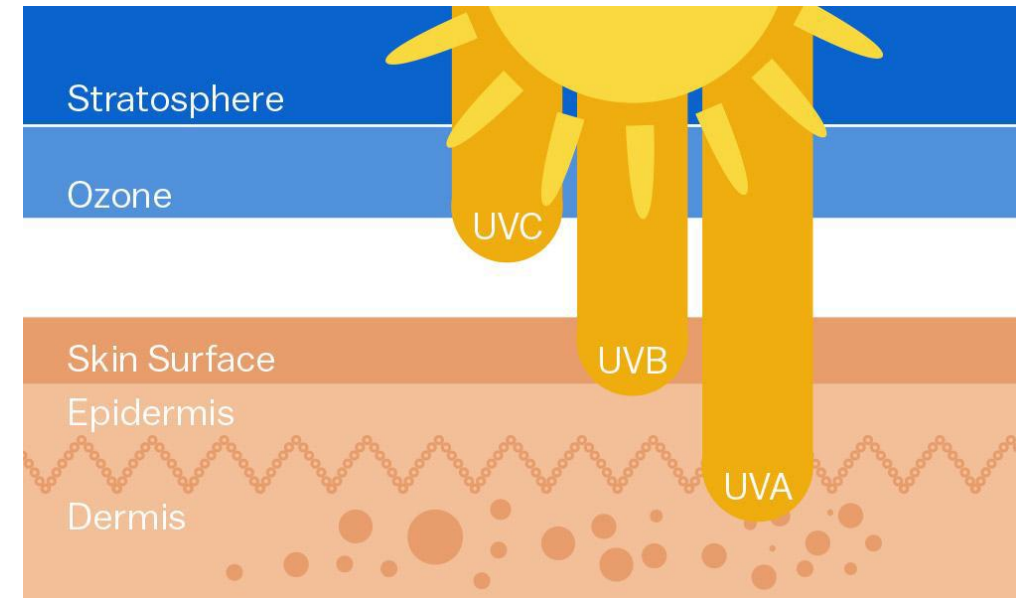
02

UV Cut Filter

Ultra Violet



UV Radiation and skin



Radiation Type	Wavelength	Energy per photon	% of total UV	Effects on Skin
UVC	200 ~ 290 nm	High	< 1%	DNA damage
UVB	290 ~ 320 nm	Medium	5 %	Sunburn, DNA damage Skin cancer
UVA	320 ~ 400 nm	Low	95 %	Tanning, Skin aging DNA damage, Skin cancer

UV Effects (Skin Damage)



Skin aging (Wrinkles)



Sunburns (Freckles)



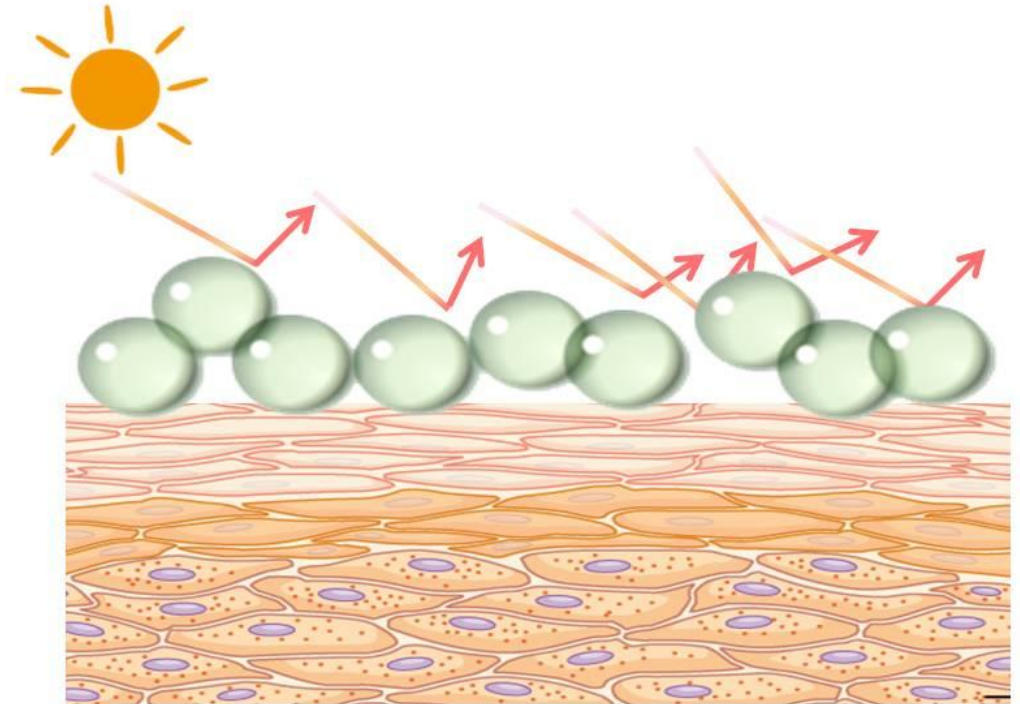
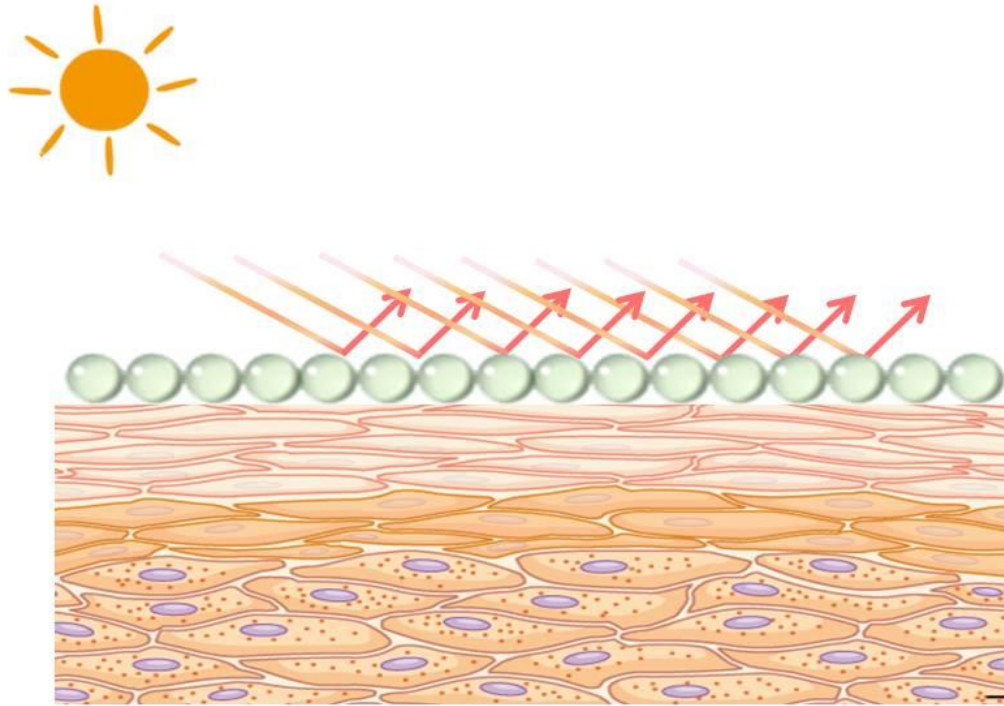
Skin cancer

Unprotected exposure can lead to premature skin aging and wrinkling (photoaging), and suppression of the immune system. UVB rays will usually burn the superficial layers of your skin. It plays a key role in the development of skin cancer.

UV absorber vs UV reflector

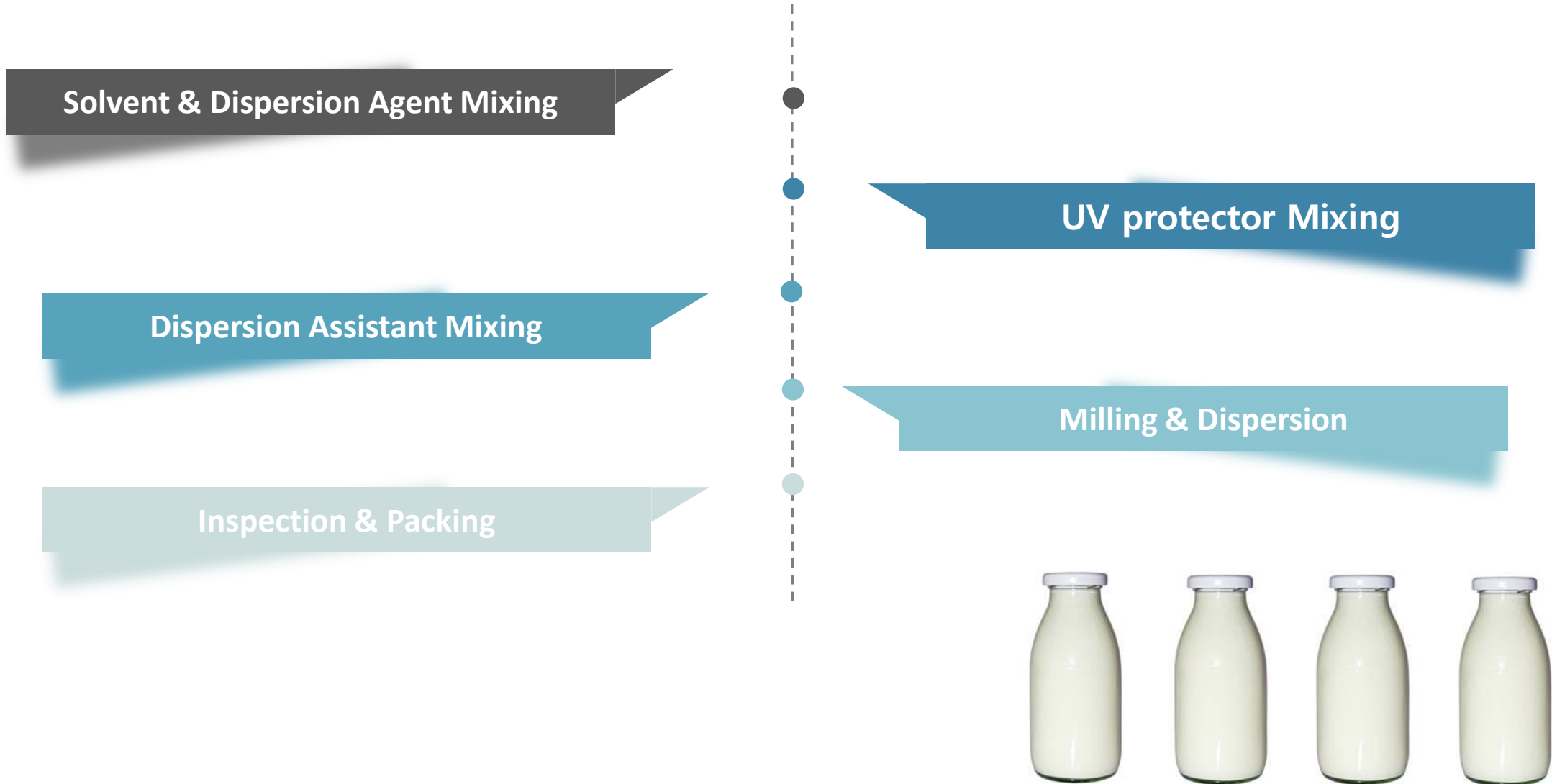
	Chemical Sunscreen (UV absorber)	Physical Sunscreen (UV reflector)
Blocking Principle	UV chemical filters are absorbed by the skin and metabolized by the body	Physical Filters rest on skin's surface reflecting UV rays
Main Ingredient	Ethylhexyl Salicylate, Ethylhexyl Methoxycinnamate etc.	Titanium Dioxide, Zinc Oxide
Features	Apply 30 min beforehand No white cast Possible stinging sensation in eyes/skin	Immediately effective white cast & Thicker texture matte finish that can be drying

Dispersion Benefit



- ✓ Low white cast
- ✓ Expect great effect with small amount of material
- ✓ Excellent skin feel
- ✓ Stable in formulation

Procedure of dispersion





03

Product List NCTI Series

TiO₂ Dispersion

Solvent	Dispersion Agent	Solid Content(%)
Cyclopentasiloxane	PEG-10 Dimethicone	50
	PEG-9 Polydimethylsiloxylethyl Dimethicone	
C12-15 Alkyl Benzoate	Polyglyceryl-6 Polyricinoleate	50
	Polyhydroxystearic Acid	
Caprylic/Capric Triglyceride	Polyglyceryl-3 Polyricinoleate	50
Coco-Caprylate/Caprates	Polyglyceryl-3 Polyricinoleate	60
Water	Polyglyceryl-10 Laurate	20
	Glycerin	
	1,2-Pentanediol	

TiO₂ Dispersion – Silicone Oil

Trade Name	INCI Name	Content(%)
Crystalpro TS50P	Titanium Dioxide	40-50
	Silica & Dimethicone	3-6 / 2-5
	Cyclopentasiloxane	38-45
	PEG-10 Dimethicone	6-10
	PEG-9 Polymethylsiloxyethyl Dimethicone	1-4

UV Cut effect



Transparency



Flowability



TiO₂ Dispersion – Alkyl Benzoate Oil

Trade Name	INCI Name	Content(%)
Crystalpro TE50R	Titanium Dioxide	40-52
	Aluminum Hydroxide / Stearic Acid	3-7 / 1-5
	C12-15 Alkyl Benzoate	35-45
	Polyglyceryl-6 Polyricinoleate	2-5
	Polyhydroxystearic Acid	2-5

UV Cut effect



Transparency



Flowability



TiO₂ Dispersion – Natural Oil

Trade Name	INCI Name	Content(%)
Crystalpro TN50R	Titanium Dioxide	40-52
	Aluminum Hydroxide / Stearic Acid	3-7 / 1-5
	Caprylic/Capric Triglyceride	35-45
	Polyglyceryl-6 Polyricinoleate	2-5
	Polyhydroxystearic Acid	2-5

UV Cut effect



Transparency



Flowability



TiO₂ Dispersion – Coco Ester Oil

Trade Name	INCI Name	Content(%)
Crystalpro TC60R	Titanium Dioxide	50-60
	Aluminum Hydroxide / Stearic Acid	4-7 / 1-3
	Coco-Caprylate/Caprates	30-40
	Polyglyceryl-3 Polyricinoleate	2-7

UV Cut effect					
Transparency					
Flowability					

TiO₂ Dispersion – Water

Trade Name	INCI Name	Content(%)
Crystalpro TW20U	Titanium Dioxide	15-25
	D.I Water	50-60
	Dicaprylryl Carbonate	5-12
	Butylene Glycol	10-18
	1.2-Hexanediol	0-3
	Polyglyceryl-3 Polyricinoleate	0-3
	Polyglyceryl-10 Oleate	0-3
	Aluminium Oxide	0-3
	Dimethicone	0-3

UV Cut effect



Transparency



Flowability



TiO₂ Dispersion Highlights



Dispersion For
General Sun
Protector



Excellent Fluidity
Easy To Use



Keep UV Protect Effect
(Waterproof Function)



Excellent skin feel

The background of the slide features a collection of laboratory glassware, including Erlenmeyer flasks, graduated cylinders, and test tubes, some containing liquids. The glassware has various markings and labels, such as '1000 CM IN 20°C', '25 CM', '600 ml', and 'APPROX'. A dark grey hexagonal overlay is centered on the image, containing the text '04 Product List NCZN Series'.

04

Product List
NCZN Series

ZnO Dispersion

Solvent	Dispersion Agent	Solid Content(%)
Cyclopentasiloxane	PEG-10 Dimethicone	50
	PEG-9 Polydimethylsiloxylethyl Dimethicone	
C12-15 Alkyl Benzoate	Polyhydroxystearic Acid	60
Caprylic/Capric Triglyceride	Polyhydroxystearic Acid	60
Coco-Caprylate/Caprate	Polyglyceryl-3 Polyricinoleate	64

ZnO Dispersion – Silicone Oil

Trade Name	INCI Name	Content(%)
Crystalpro ZS50Q	Zinc Oxide	45-55
	Dimethicone	1-5
	Cyclopentasiloxane	38-48
	PEG-10 Dimethicone	5-10
	PEG-9 Polymethylsiloxyethyl Dimethicone	1-5

UV Cut effect



Transparency



Flowability



ZnO Dispersion – Alkyl Benzoate Oil

Trade Name	INCI Name	Content(%)
Crystalpro ZE60Q	Zinc Oxide	53-63
	Dimethicone	1-5
	C12-15 Alkyl Benzoate	35-45
	Polyhydroxystearic Acid	1-5

UV Cut effect					
Transparency					
Flowability					

ZnO Dispersion – Natural Oil

Trade Name	INCI Name	Content(%)
Crystalpro ZN60Q	Zinc Oxide	53-63
	Dimethicone	1-5
	Caprylic/Capric Triglyceride	35-45
	Polyhydroxystearic Acid	1-5

UV Cut effect					
Transparency					
Flowability					

ZnO Dispersion – Coco Ester Oil

Trade Name	INCI Name	Content(%)
Crystalpro ZC64Q	Zinc Oxide	57-67
	Dimethicone	1-5
	Coco-Caprylate/Caprates	25-35
	Polyglyceryl-3 Polyricinoleate	4-8

UV Cut effect



Transparency



Flowability



ZnO Dispersion Highlights



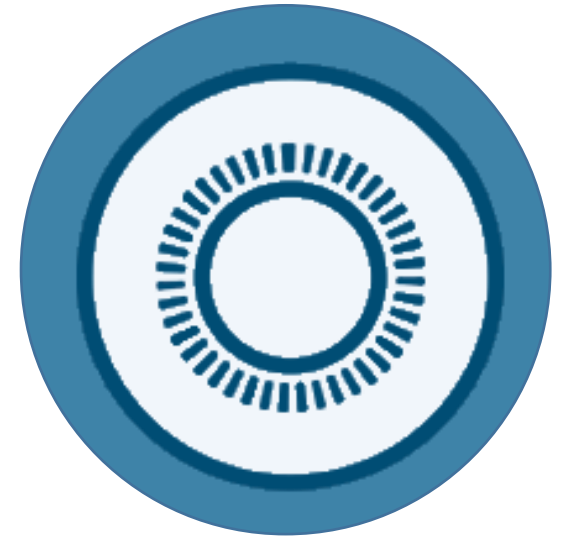
**Excellent
Transparency**



High SPF



**Stable Formulation
Preventing Crystallization
Of UV Absorber**



**Good Dispersibility
And Well Dispersed**

THANKS

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