



DJC

UV Filter Water Soluble and Oil Soluble UV filter



About DJC

A specialized company in developing and manufacturing **cosmetic preservatives, oil thickeners, UV filters, and other cosmetic raw materials**

With more than 30 years of manufacturing experience and expertise, we are proud to have high production capacity among all Korean cosmetic raw material manufacturers.

We operate two factories for mass production and have an advanced equipment to maintain the highest quality.

This allows steady mass production of quantities, and we always do our best to manage the best quality for our customers' success. Moreover, by managing our own R&D center, customizing raw material development is feasible, and we are constantly under researching new products for expansion.

DJC Co., Ltd. will continuously investigate for new products to be a global company in the field of cosmetics raw material manufacturing and strive to create new values in the development of cosmetics market.



What is UV (Ultraviolet Ray)?

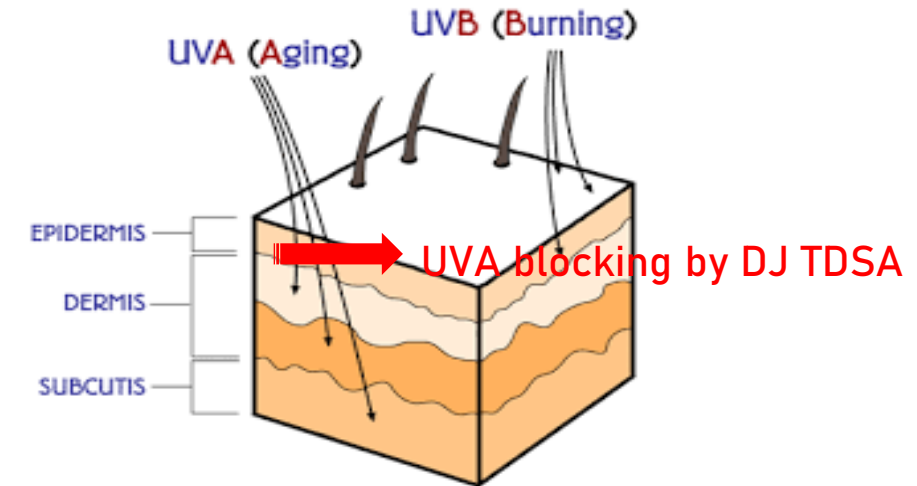
UV stands for Ultraviolet radiation. It is a form of electromagnetic radiation that comes from the sun and has shorter wavelengths than visible light but longer wavelengths than X-rays. UV radiation is classified into three types based on wavelength:



UVA (320-400 nm): UVA rays are the longest wavelength and can penetrate deep into the skin. They are primarily responsible for skin aging and wrinkling. UVA rays are present throughout the day and can penetrate glass.
Causing : skin pigmentation, photo-aging, and skin cancer
PA : UVA blocking index



UVB (280-320 nm): UVB rays have shorter wavelengths and primarily affect the outer layer of the skin (epidermis). They are the main cause of sunburn and are responsible for most skin cancers. UVB rays are strongest between 10 AM and 4 PM and do not penetrate glass as effectively as UVA.
Causing sunburn
SPF: UVB blocking index



Protection against UV radiation is crucial and is typically achieved through sunscreen use, protective clothing (such as hats and sunglasses), seeking shade during peak sun hours, and avoiding indoor tanning beds, which emit harmful UV radiation.

What is UVA?

Known as Diethylamino Hydroxybenzoyl Hexyl Benzoate, DJ UVA is a UV filter with high absorption in the UV-A range and is a chemical compound commonly used in cosmetics and sunscreens for its excellent UV-absorbing properties.

As an organic UV filter, it plays a crucial role in protecting the skin from the harmful effects of UV radiation, particularly UVA and UVB rays, and minimizes the overexposure of human skin to ultraviolet radiation that may lead to acute and chronic photodamage.

While it is generally regarded as safe, concerns have been raised about potential contaminants, highlighting the importance of purity in cosmetic formulations.

DJ UVA’s Applications

In the cosmetic industry, DHHB is highly valued for its exceptional UV-absorbing properties.

Serving as a key component in sunscreen formulations, and offering effective protection against both UVA and UVB radiation, DHHB ensures that cosmetic products provide comprehensive sun protection, preventing sunburn, premature skin aging, and the risk of skin cancer.

Usage Approval Status

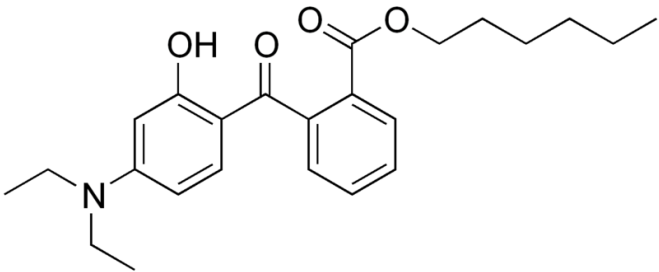
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Japan	10%
Korea	10%
China	10%
Australia	10%

Ingredient information

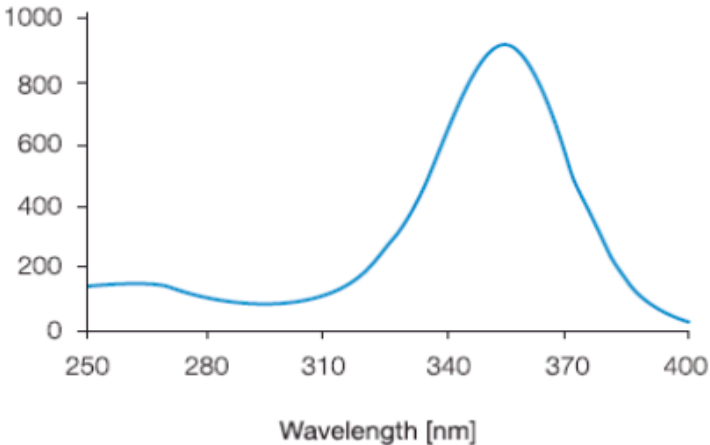
INCI Name	CFDA Name	Content(%)	Source	Origin
Diethylamino Hydroxybenzoyl Hexyl Benzoate	二乙氨基羟苯甲酰基苯甲酸己酯	98%	Synthetic	South Korea

Physical & Chemical Properties and Structure

- Product Name : Diethylamino Hydroxybenzoyl Hexyl Benzoate
- Common Name : Uvinul A Plus
- CAS Number : 302776-68-7
- Formula : C₂₄H₃₁NO₄
- Formula Weight : 397.51 g/mol
- Appearance : White to light yellow powder
- Odor : Characteristic
- Acid Value : 7.57±0.35
- Assay (Titration) : Min. 98%
- Boiling point : 524.8±40.0 °C
- Density : 1.112±0.06 g/cm³
- Water solubility : Soluble in ethanol



< Structure of DJ UVA >



< Absorption spectrum of DJ UVA >

Properties

DJ UVA possesses excellent UV absorption properties, stability under sunlight, and compatibility with cosmetic formulations, making it a valuable ingredient in sun protection products

Type	Properties
UV Absorber	• Highly effective UVA absorber, which can absorb a wide range of UVA bands and provide better sun protection.
Stability	• During storage and use, DHHB exhibits good chemical stability and is not easy to decompose, helping to maintain the long-term effectiveness of the product
Photostability	• Good photostability, which means that it is not easy to decompose in sunlight and can maintain the sunscreen effect for a long time.
Compatibility	• Good compatibility with other sunscreen ingredients • Can be used in combination with other UVB absorbers and UVA absorbers to prepare sunscreen products with comprehensive sunscreen effects



Properties

Broad-spectrum UV Protection:

DHHB is an oil-soluble, white-to-light-salmon colored granular powder, gives sun protection in the whole UVA range (320-400 nm) with peak protection at 354nm.

Photostability

DHHB offers excellent photostability and is considered superior to avobenzone (another popular UVA spectrum sunscreen agent) in this regard and can be used alone or in tandem with other UV absorbers.

Enhanced Sun Protection Factor (SPF)

DHHB is a synthetic sunscreen agent that helps shield skin against UVA rays with peak absorption at 354 nm (the UVA range extends to 400 nm).

Non-irritating and Non-sensitizing

Its allergenic and irritant potential is low, but it is recommended to test cosmetic products on a small area of the body before more extensive use.

Cosmetic Benefits:

DHHB is considered an anti-aging ingredient, as it protects skin from sun damage that could otherwise accelerate visible signs of aging.

Compatibility:

DHHB has excellent photostability and compatibility with other UV absorbers and other cosmetic ingredients.

Water Resistance:

DHHB is oil-soluble, which positively impacts this ingredient's affinity for the epidermis, since this layer of skin contains natural lipids.

What is TDSA?

Terephthalylidene Dicamphor Sulfonic Acid, often abbreviated as TDSA or Mexoryl SX (by L'Oréal), is a chemical compound used as a photostable broad-spectrum UV filter. It is commonly found in sunscreens and other cosmetic products designed to protect the skin from both UVA and UVB radiation.

TDSA is known for its effectiveness in absorbing and dissipating UV rays, thus preventing them from penetrating the skin and causing damage such as premature aging or sunburn.

Its ability to remain stable under sunlight exposure makes it a valuable ingredient in sun protection formulations.

DJ TDSA's Applications

DJ TDSA's primary application is in providing effective and stable UV protection in sunscreen and sun care products, contributing to their efficacy and consumer safety against the harmful effects of UV radiation.

Usage Approval Status

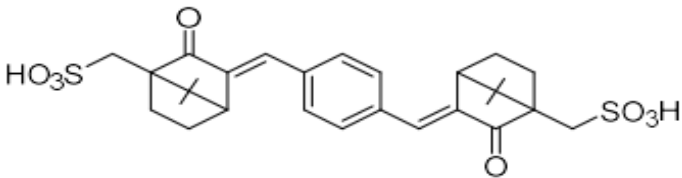
Approved Percentage (%)	
Europe	10%
Japan	10%
Korea	10%

Ingredient information

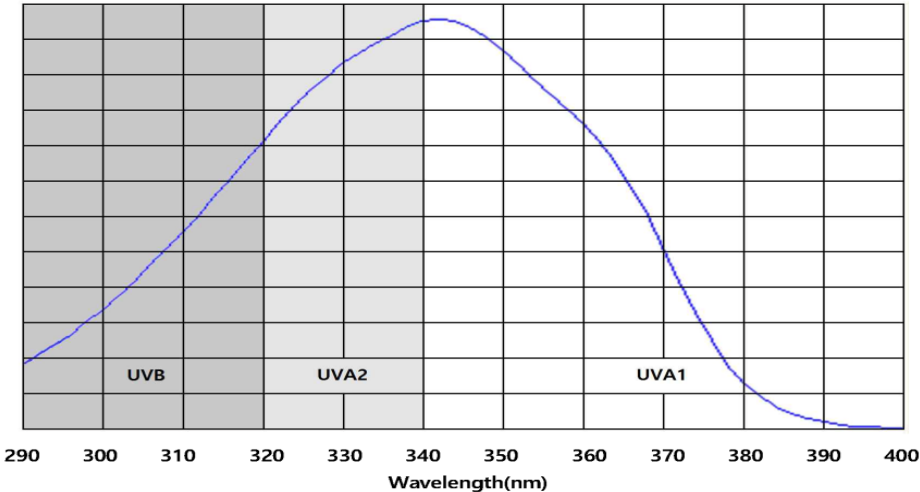
INCI Name	CFDA Name	Content(%)	Source	Origin
Terephthalylidene Dicamphor Sulfonic Acid	对苯二亚甲基二樟脑磺酸	33.0	Synthetic	South Korea

Physical & Chemical Properties and Structure

- Product Name : Terephthalylidene Dicamphor Sulfonic Acid solution
- (33 % water sol.)
- Common Name : Ecamsule, Mexoryl SX by LOREAL
- CAS Number : 92761-26-7
- Formula : C₂₈H₃₄O₈S₂
- Formula Weight : 562.7 g/mol
- Appearance : Brownish
- Odor : practically odorless
- Acid value : 65~70
- Assay (Titration) : 32.6~35.1
- Boiling point : 100 °C (as 33 % aqueous solution)
- Density : 1.12 kg/m³
- Water solubility : Totally soluble
- Fat solubility : 3.71 mg/100 g



< Structure of DJ TDSA >



< Absorption spectrum of DJ TDSA >

Properties

DJ TDSA possesses excellent UV absorption properties, stability under sunlight, and compatibility with cosmetic formulations, making it a valuable ingredient in sun protection products

Type	Properties
UVA Filter	• High performance of protection PA, boosting SPF
Antioxidant	• Optimal protection against UVA-induced oxidative stress
Water Soluble	• Able to make cosmetic more moist feeling, less greasy & unpleasant feeling • Easy to clean after use: waterproof can also be made by W/O formulation • New formulations as water-soluble UV protection agents ex) Sunblock spray mist etc.
Stability	• Photo stable, heat stable, long-term stable



Properties

Broad-spectrum UV Protection:

TDSA provides effective protection against both UVA and UVB rays.

UVA rays can penetrate deeper into the skin and contribute to premature aging, while UVB rays primarily cause sunburns and skin damage.

Photostability

TDSA is photostable, meaning it does not degrade or lose its effectiveness when exposed to sunlight.

This ensures that it continues to protect the skin over extended periods of sun exposure.

Enhanced Sun Protection Factor (SPF)

When combined with other UV filters, TDSA can enhance the overall SPF (Sun Protection Factor) of sunscreen formulations.

This means it contributes to increasing the product's ability to protect the skin from UV radiation.

Non-irritating and Non-sensitizing

TDSA is known for its good tolerability profile. It is non-toxic, non-irritating, and non-sensitizing, making it suitable for sensitive skin types.

Cosmetic Benefits:

In addition to its sun protection properties, TDSA can improve the cosmetic elegance of sunscreen formulations.

It helps to create products that spread easily on the skin, feel lightweight, and do not leave a greasy or heavy residue.

Compatibility:

TDSA is compatible with a wide range of cosmetic ingredients, including both organic and inorganic UV filters.

This allows formulators flexibility in creating effective and stable sunscreen products.

Water Resistance:

TDSA is compatible with water-resistant formulations, enhancing its effectiveness in products designed to withstand water exposure.

Status of Regulations

✿ FDA-approved sun-care ingredients

FDA Monograph Sunscreen Ingredients	Amount of Ray Protection		Chemical (C) or Physical (P)
	UVA	UVB	
Aminobenzoic acid (PABA)	○	●	C
Avobenzone	●	◐	C
Cinoxate	◐	●	C
Dioxybenzone	◐	●	C
Ecamsule	●	◐	C
Homosalate	○	●	C
Menthyl anthranilate	◐	●	C
Octocrylene	◐	●	C
Octyl methoxycinnamate	◐	●	C
Octyl salicylate	○	●	C
Oxybenzone	◐	●	C
Padimate O	○	●	C
Phenylbenzimidazole	○	●	C
Sulisobenzene	◐	●	C
Titanium dioxide	◐	●	P
Trolamine salicylate	○	●	C
Zinc Oxide	●	●	P

TDSA Common
name

Prohibition in
Hawaii

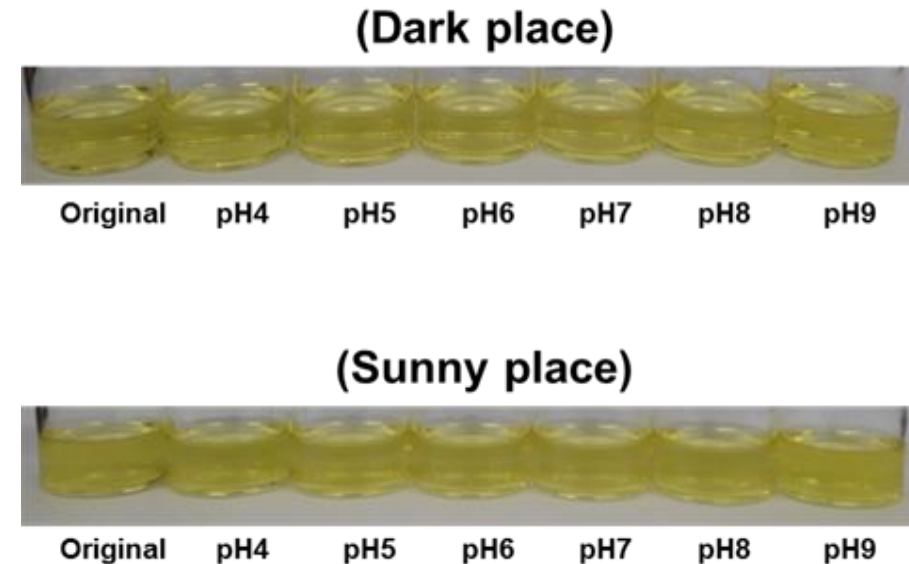
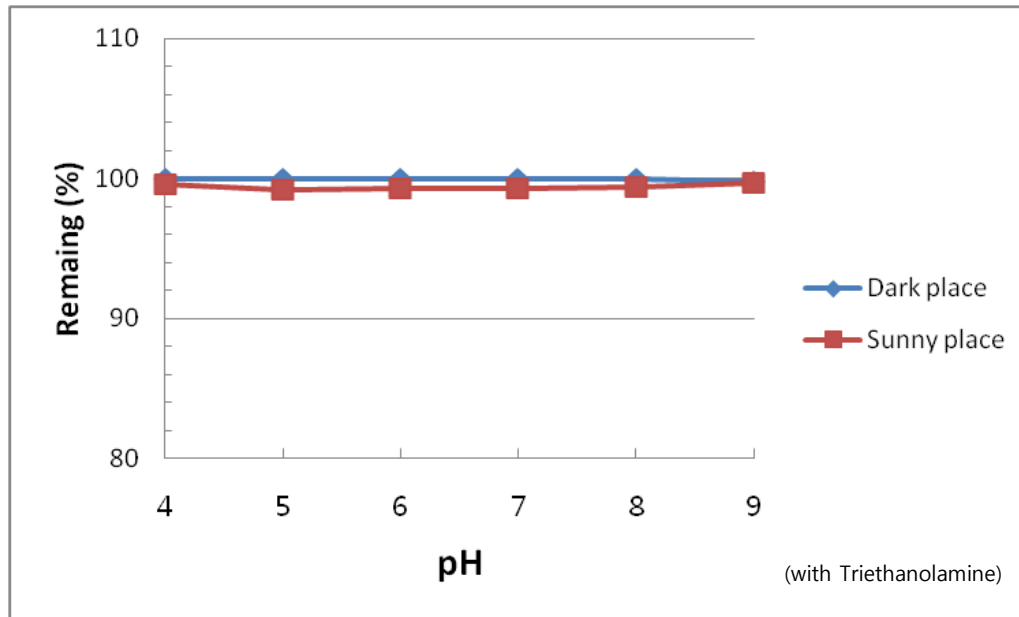
Protection Level: ● = extensive ◐ = considerable ◑ = limited ○ = minimal

✿ Sun- care limit usage is regulated by the country:
To increase to PA++++, new product needs to be added

Product	INCI	Approval Status (max%)			
		EU	JP	US	Kor
Uvinul A Plus	DHHB (Diethylamino hydroxybenzoyl hexyl benzoate)	10	10	-	10
Tinosorb S	BEMT (bis-ethylhexyloxyphenol methoxyphenyl triazine)	10	3	-	10
Parsol 1789	BMDBM	5	10	3	5
Mexoryl XL	Drometrizole trisiloxane	15	15	-	15
DJ TDSA	Terephthalidene dicamphor sulfonic acid	10	10	-	10
Neo helipan AP	Disodium phenyl debenzimidazole tetrasulfonate	10	-	-	10
Zinc Oxide	Zinc Oxide	25	100	25	25

Stability Test

✿ pH & Photostability (Dilution 1 → 10, 6months at room temp.)



To test the photostability of DJ TDSA, an experiment was conducted.

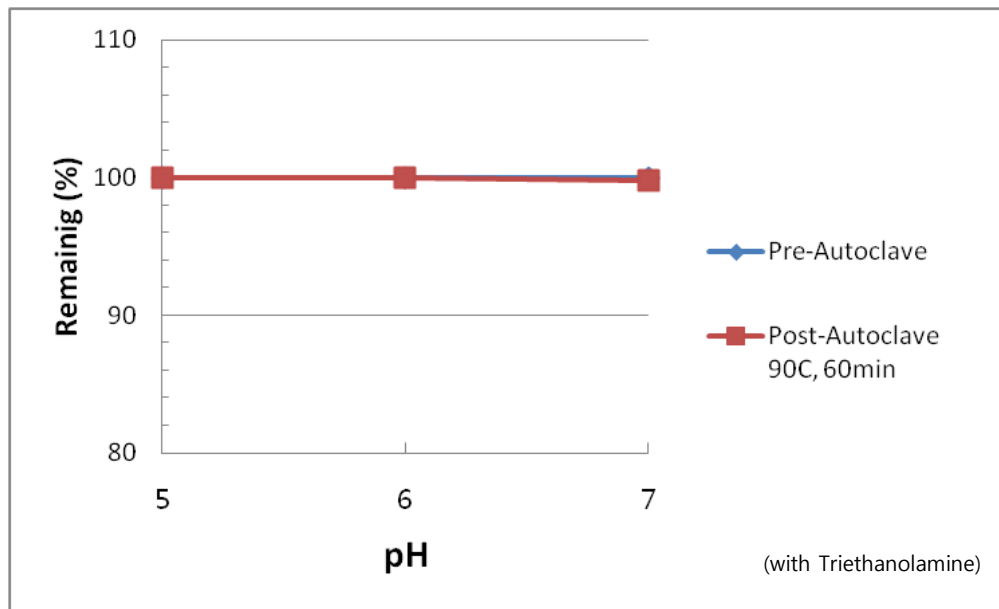
DJ TDSA was diluted to 1/10 and exposed to sunlight at room temperature under various pH conditions for 6 months.

It was confirmed that the diluted DJ TDSA maintained 100% color stability and content, regardless of whether it was stored in dark or bright conditions, after 6 months.

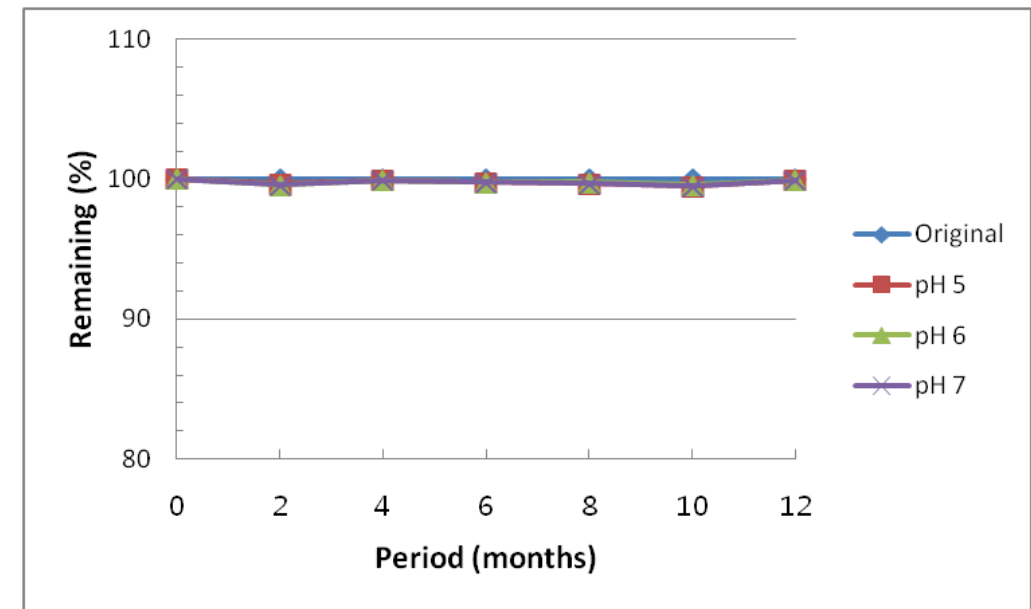
Therefore, DJ TDSA has been proven to have high photostability.

Stability Test

✿ Heat stability (Dilution 1 → 10, at 90°C)



✿ Long-term stability (Dilution 1 → 10, at 45°C)



To test the heat stability and long-term stability of DJ TDSA, an experiment was conducted. DJ TDSA diluted to 1/10 remained unchanged when exposed to 90°C for 60 minutes and 45°C for 12 months under various pH conditions. This indicates that DJ TDSA exhibits thermal stability.

Formulation Guide

- After preparing a *DJ* TDSA solution, pre-neutralize it by using a neutralizing agent, like tromethamine or TEA, before adding it to the water phase formulation.
- Recommended pH Range : pH 5~8 (**DJ TDSA + Neutralizing agent**)

Example of Neutralization Ratio			
	DJ TDSA (%)	Tromethamine (%)	Adjust pH range
Ratio	1	0.146 ~ 0.165	5~8
Example	6.3	0.919 ~ 1.039	5~8

- **Don't use** alkali hydroxides, like sodium hydroxide or potassium hydroxide, because metal salts of TDSA have low water solubility.

What is UVB?

Known as Diethylhexyl Butamido Triazone, DJ UVB is a type of UV filter that provides skin protection against harmful rays of the sun. This ingredient is added to sunscreen products and can provide high SPF at lower concentrations. This filter is oil soluble and particularly effective for water resistant and water repellent formulations.

It protects in the UVB and UVA II range (but not in UVA I) with a peak protection at 310 nm. It's particularly suitable for water-repellent and water-resistant formulations.

DJ UVB’s Applications

DBT is widely used in sunscreens in sunscreens and cosmetics to prevent sunburn and skin damage, or as stabilizers to prevent photodegradation in many commercial products.

It can be used in any cosmetic formulation that contains a suitable lipid phase, either alone or in combination with one or more UV filters and in combination with inorganic UV filters such as zinc oxide and titanium dioxide.

Usage Approval Status

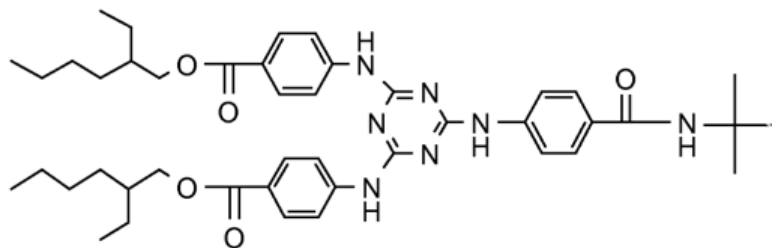
Approved Percentage (%)	
Europe	10%
Korea	10%
China	10%
Australia	10%

Ingredient information

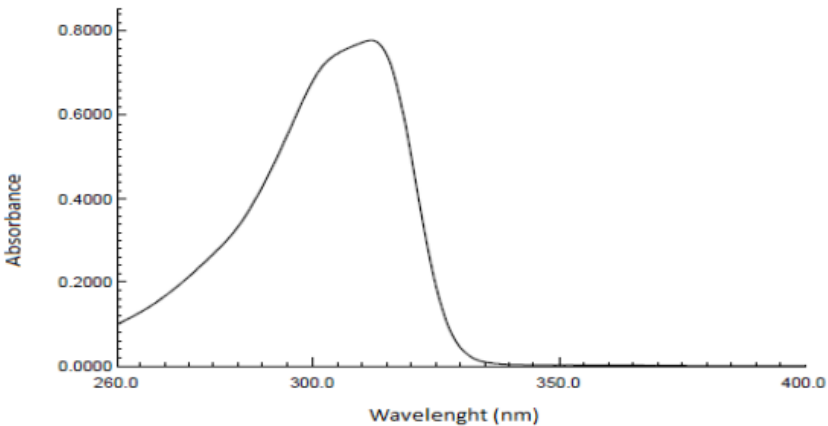
INCI Name	CFDA Name	Content(%)	Source	Origin
Diethylhexyl Butamido Triazone	二乙基己基丁酰胺基三嗪酮	97%	Synthetic	South Korea

Physical & Chemical Properties and Structure

- Product Name : Diethylhexyl Butamido Triazone
- Common Name : Iscotrizinol
- CAS Number : 154702-15-5
- Formula : C₄₄H₅₉N₇O₅
- Formula Weight : 765.98 g/mol
- Appearance : White to light yellow powder
- Odor : Characteristic
- Acid Value : 15.31±0.46
- Assay (Titration) : Min. 97%
- Boiling point : 241-893 °C
- Density : 1.152 g/cm³
- Water solubility : 5µg/L at 20°C
- Fat Solubility : Soluble in oil



< Structure of DJ UVB >



< Absorption spectrum of DJ UVB >

Properties

DJ UVB possesses excellent UV absorption properties, stability under sunlight, and compatibility with cosmetic formulations, making it a valuable ingredient in sun protection products

Type	Properties
UV Filter	• Highly efficient UV light absorber that helps to protect the materials from harmful UV radiation
Oil Soluble	• Particularly suitable for water-repellent and water-resistant formulations
Photostability	• Super photostable. Loses 10% of its SPF protection abilities only in 25 hours when 2 hours counts already as "photostable" in the world of chemical sunscreens.
Safety	• Hardly absorbed by the skin • Rarely leads to irritation • Causes no allergic reactions and there is no evidence of any (geno)toxic or carcinogenic effect



Properties

Broad-spectrum UV Protection:

DBT absorb the energy of the ultraviolet part of the light in the range from approximately 280 to 400 nm.

Photostability

DBT is super photostable. It loses 10% of its SPF protection abilities only in 25 (!!) hours when 2 hours counts already as "photostable" in the world of chemical sunscreens.

Enhanced Sun Protection Factor (SPF)

DBT requires only very small concentrations to achieve a high Sun Protection Factor (SPF).

Non-irritating and Non-sensitizing

DBT is hardly absorbed by the skin, rarely leads to irritation, causes no allergic reactions and there is no evidence of any (geno)toxic or carcinogenic effect.

Cosmetic Benefits:

DBT offers broad-spectrum protection against both UVA and UVB radiation, safeguarding the skin from sunburn and long-term damage like premature aging and skin cancer.

Compatibility:

DBT is very soluble in cosmetic emollients and can readily be incorporated in the oily phase of emulsions and good sunscreen effect.

Water Resistance:

DBT is oil-soluble, which is particularly suitable for water-repellent and water-resistant formulations, often added in sunscreen oil.

What is EHT?

Ethylhexyl Triazone, also known as Octyl Triazone, is a commonly used organic UV filter in cosmetics and sunscreens. This colorless to pale yellow oil is added to personal care products due to its effective UVB and UVA protection properties.

Ethylhexyl Triazone helps prevent sunburn and photoaging by absorbing and dissipating harmful UV rays. It is considered safe for use and is often utilized in combination with other sunscreen ingredients to provide broad-spectrum protection.

Its light weight texture and compatibility with various formulations make it a popular choice in sun protection products.

DJ EHT’s Applications

Ethylhexyl Triazone, an organic UV filter, finds extensive utility in cosmetics and sunscreens. With its ability to absorb and dissipate UVB and UVA rays, it serves as a key ingredient for effective sunburn and photoaging prevention.

Due to its compatibility with different formulations, it is incorporated into creams, lotions, sprays, and more.

Usage Approval Status

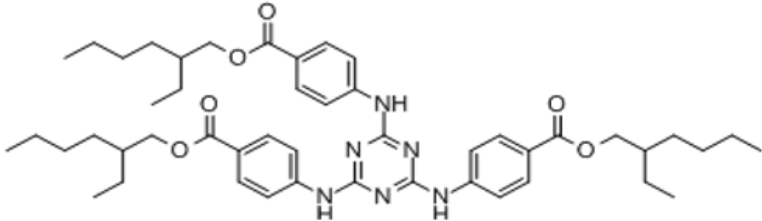
Approved Percentage (%)	
Europe	5%
USA	5%
Australia	5%
Japan	5%
Korea	5%

Ingredient information

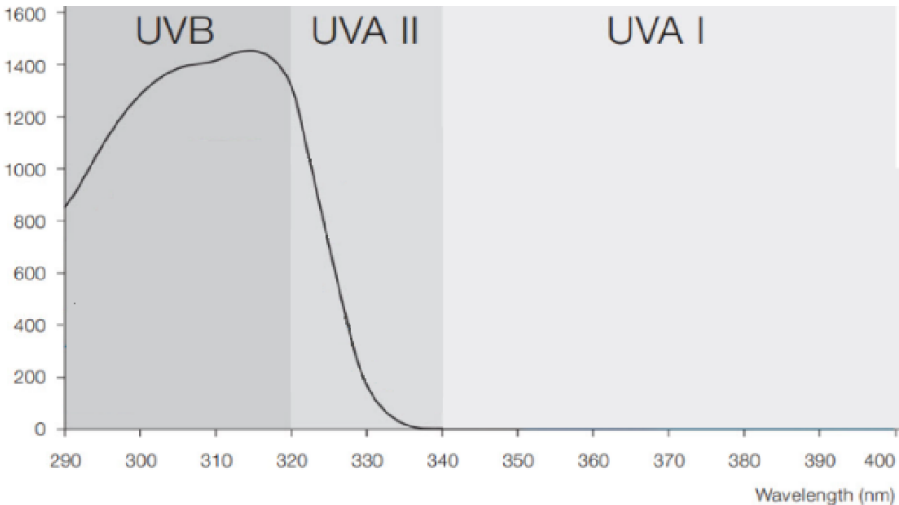
INCI Name	CFDA Name	Content(%)	Source	Origin
Ethylhexyl Triazone	辛基三嗪酮	99%	Synthetic	South Korea

Physical & Chemical Properties and Structure

- Product Name : Ethylhexyl Triazone
- Common Name : Octyl Triazone
- CAS Number : 88122-99-0
- Formula : C₄₈H₆₆N₆O₆
- Formula Weight : 823.1 g/mol
- Appearance : White to light yellow powder
- Odor : Light Characteristic
- Assay (Titration) : Min. 99%
- Boiling point : 128.0-132.0 °C
- Vapor Density : 1.1g/cm³
- Water solubility : Insoluble in water
- Solubility : <0.007 mg/l



< Structure of DJ EHT >



< Absorption spectrum of DJ EHT >

Properties

DJ EHT possesses excellent UV absorption properties, stability under sunlight, and compatibility with cosmetic formulations, making it a valuable ingredient in sun protection products

Type	Properties
UVA Filter	Filters certain UV rays to protect skin or hair from the harmful effects of these rays
UV Absorber	Highly effective UV-B absorber where only small concentrations are needed to achieve a high SPF value
Photostability	Highly photostable, meaning it does not degrade easily under exposure to sunlight, a crucial property for maintaining the effectiveness of sunscreens over time.
Compatibility	Excellent in combination with other UV filters to provide broad UV protection



Properties

Broad-spectrum UV Protection:

EHT absorbs UV-B radiation from approximately 280 to 320 nm.

Photostability

EHT is highly photostable even when exposed to intense UV radiation. It also helps to enhance the photostability of other UV filters.

Enhanced Sun Protection Factor (SPF)

When combined with other UV filters, EHT minimize the undesired effects of UV radiation on the skin.

Non-irritating and Non-sensitizing

EHT is well tolerated: it does not cause any irritations, as well as photosensitisation reactions and is not absorbed by the skin.

Cosmetic Benefits:

By protecting the skin against the dangerous sun radiation, they contribute towards preventing premature light-caused skin ageing and skin cancer.

Compatibility:

It is a soluble organic UV-B filter which could be used in wide range of cosmetic products, such as in sun creams, oils, lotions, lipsticks, etc.

Water Resistance:

It exhibits excellent wash-resistance in sun creams due to the polar nature of its molecule, which forms an affinity with the keratin in the skin.

What is BEMT?

Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine is a broad-spectrum chemical sunscreen agent, which protects the skin against both UV-B and UV-A radiation. Unlike older UV filters, it's very photostable.

It is noted for being highly effective at low concentrations, which is one of the reasons it is a popular choice when high SPF levels are desired. It is also praised for having excellent photostability and is known to help improve the stability of other sunscreen agents.

It hardly deteriorates in the presence of UV light and it's also useful in stabilizing other less stable sunscreen agents, like the famous UVA protector, avobenzone.

DJ BEMT's Applications

BEMT is an oil-soluble, photostable, broad-spectrum UV absorber efficiently covering both the UVA and UVB range.

It primarily used in cosmetics and personal care products as a UV filter to protect the skin against harmful UVA rays.

It can be found in sunscreens and lotions to provide long-lasting sun protection.

Usage Approval Status

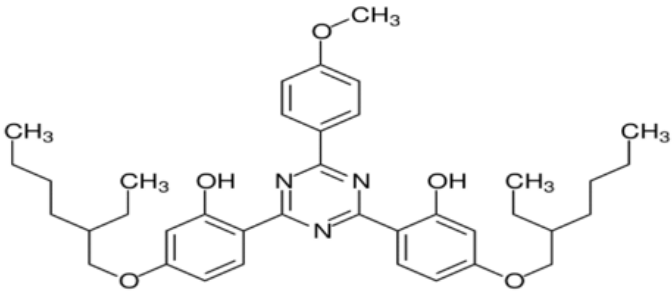
Approved Percentage (%)	
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Canada	5%
Japan	3%
Korea	10%

Ingredient information

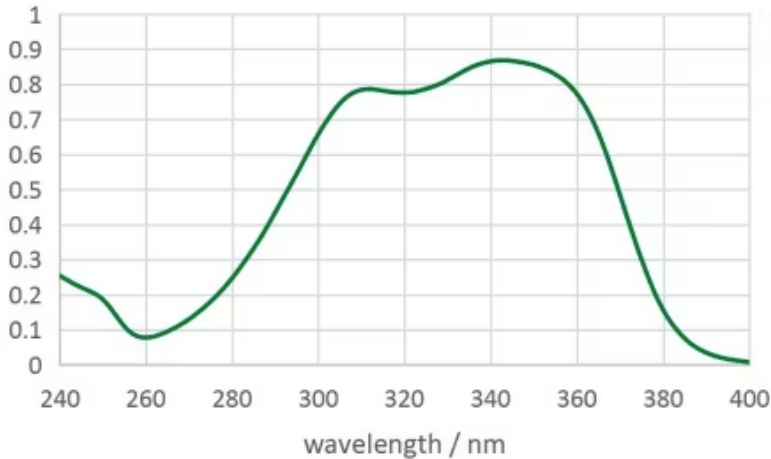
INCI Name	CFDA Name	Content(%)	Source	Origin
Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	双-乙基己氧苯酚甲氧苯基三嗪	99.8%	Synthetic	South Korea

Physical & Chemical Properties and Structure

- Product Name : Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine
- Common Name : Bemotrizinol
- CAS Number : 187393-00-6
- Formula : C₃₈H₄₉N₃O₅
- Formula Weight : 627.80 g/mol
- Appearance : Light yellow powder
- Odor : Characteristic
- Acid Value : 8.08±0.40
- Assay (Titration) : Min. 99.8%
- Boiling point : 782.0±70.0 °C
- Density : 1.109±0.06 g/cm³
- Water solubility : Insoluble in water



< Structure of DJ UVB >



< Absorption spectrum of DJ UVB >

Properties

DJ BEMT possesses excellent UV absorption properties, stability under sunlight, and compatibility with cosmetic formulations, making it a valuable ingredient in sun protection products

Type	Properties
UV Filter	• Synthetic broad-spectrum sunscreen agent that helps defend skin against UVB and UVA rays • Highly effective in small concentrations to achieve a high SPF value
Solubility	• oil soluble for high water resistance
Photoprotective	• Provides protection against UVA and UVB rays by operating through a mechanism of UV light absorption
Compatibility	• Excellent compatible with both organic and inorganic UV filters and is readily compatible with other DJC products.



Properties

Broad-spectrum UV Protection:

BEMT, a new broad-spectrum sunscreen, protects a part of the UVB and most of the UVA, absorption wavelength between 290-370nm.

Photostability

BEMT is the most effective UV absorber available measured by SPF, based on the maximum concentration and has strong synergistic effects on the SPF when formulated with bisoctrizole, ethylhexyl triazone or iscotrizinol.

Enhanced Sun Protection Factor (SPF)

BEMT is not significantly absorbed into the skin, hence, it barely leads to skin irritation and does not appear to have hormonal effects.

Non-irritating and Non-sensitizing

BEMT is not significantly absorbed into the skin, barely leads to skin irritation and does not appear to have hormonal effects.

Cosmetic Benefits:

BEMT has excellent anti-ageing effects as it protects the skin's antioxidant defence system — this is because bemotrizinol prevents the formation of free radicals induced by UV rays.

Compatibility:

BEMT demonstrates excellent compatibility with both organic and inorganic UV filters and is readily compatible with other DJC UV filters.

Water Resistance:

BEMT appears as a crystalline powder that is pale yellow in color, soluble in organic solvents but insoluble in water.

What is DTS?

Drometrizole Trisiloxane, known also by its trade name Mexoryl XL, is a photostable UVA and UVB filter developed and patented by cosmetics company L’Oreal. Since its UVA protection peaks at 340 nanometers, it’s generally best to see this combined with other UV filters whose protection peaks further along the UVA range, which goes up to 400 nanometers.

Drometrizole Trisiloxane is a photostable UVA and UVB light filter. The compound is a lipophilic [benzotriazole](#) derivative marketed as [Meroxyl](#) XL by L’Oreal, although sunscreens with drometrizole trisiloxane are currently only approved for use in the EU, Canada, Australia, and Japan, among other countries.

DJ DTS’s Applications

Drometrizole Trisiloxane is used as an active ingredient in various sunscreens for the indication of protecting the skin by absorbing the damaging UV radiation of sunlight.

It minimizes the undesired effects of UV radiation on the skin.

Usage Approval Status

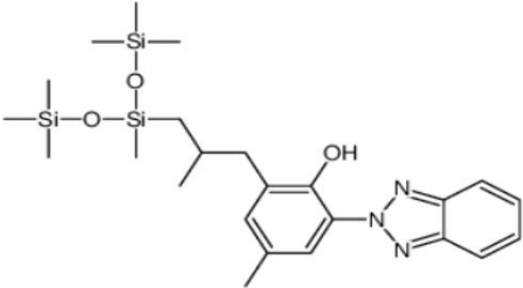
Approved Percentage (%)	
Europe	15%
Japan	15%
Korea	15%

Ingredient information

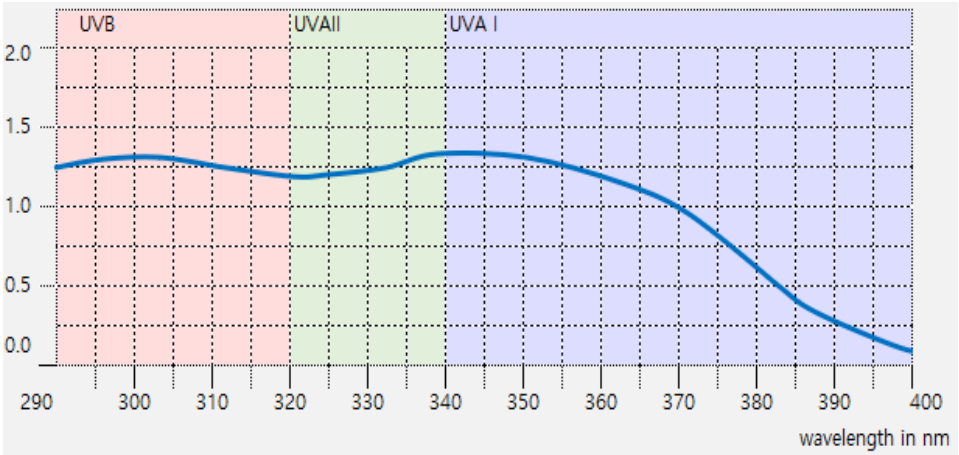
INCI Name	CFDA Name	Content(%)	Source	Origin
Drometrizole Trisiloxane	甲酚曲唑三硅氧烷	98%	Synthetic	South Korea

Physical & Chemical Properties and Structure

- Product Name : Drometrizole Trisiloxane
- Common Name : Mexoryl XL
- CAS Number : 155633-54-8
- Formula : C₂₄H₃₉N₃O₃Si₃
- Formula Weight : 501.84 g/mol
- Appearance : Off-white to light yellow powder
- Odor : Light Characteristic
- Assay (Titration) : Min. 98%
- Boiling point : 81~86 °C
- Melting point : 48~52 °C
- Water solubility : Insoluble in water



< Structure of DJ DTS >



< Absorption spectrum of DJ DTS >

Properties

DJ DTS possesses excellent UV absorption properties, stability under sunlight, and compatibility with cosmetic formulations, making it a valuable ingredient in sun protection products

Type	Properties
UV Filter	• UV ray absorbing agent used in sunscreens to protect skin from UV radiation
Oil Soluble	• Easily integrated into the oily part of suncare products • Particularly suitable for water-resistant formulations
Photostability	• Does not degrade when exposed to UV light, and therefore provides long-lasting protection
Safety	• Well tolerated, hypoallergenic and suitable for sensitive skin • Safe for health and the environment • Have little to no absorption through skin; freely wash off and re-apply if necessary



Properties

Broad-spectrum UV Protection:

DTS is a broad spectrum lipophilic benzotriazole derivative chemical sunscreen that is capable of absorbing UVA and UVB radiation.

Photostability

DTS is also photostable, meaning that it will not degrade in the presence of sunlight.

Enhanced Sun Protection Factor (SPF)

DTS is a photostable, oil-soluble chemical UVB and UVA filter with two absorption peaks, one at 303 nm (UVB) and the other at 344 nm (UVA), providing effective protection against both UVB and UVA rays.

Non-irritating and Non-sensitizing

DTS is reported as having little to no absorption through the skin, which leads most national health agencies that approve its use in sunscreens to consider it safe, given that most of their toxicity studies return little risk of adverse reactions as well.

Cosmetic Benefits:

DTS is a highly effective sunscreen ingredient that excels in photostability, and provide robust protection against both UVA and UVB, effectively safeguarding the skin from sunburn, premature aging, and reducing the risk of skin cancer.

Compatibility:

In combination with other active sunscreen agents like titanium dioxide, avobenzone, and others can ensure the full range protection against as broad spectrum of UVA and UVB radiation

Water Resistance:

DTS blends seamlessly with the oily components of sunscreens, making it highly compatible, particularly in waterproof formulations.

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