

symrise 

Sun Protection

A DEEPER KNOWLEDGE

INTRODUCTION

—
HERE COMES THE

Sun...



The sun is already shining for billions of years. It is responsible for life on earth. It has been worshipped by people for thousands of years – the sun god Helios, the Aztec sun god Nanauatzin, the Brazilian god of the sun Meri, and Amun, the sun god of the ancient Egyptians. Natural sunlight has a major positive effect upon the human psyche – and we see health benefits such as the formation of vitamin D. But the negative effects of too much sun exposure has also been known for over 2000 years; the ancient Egyptians used inorganic clays and minerals to protect their skin, ancient Greek athletes covered their skin with a mixture of oil and sand when training for the Olympic games.

Only a small portion of the sun's radiation reaches the earth's surface. Of this, over half is received as infrared radiation (heat) and around 40% is seen as visible light. A small portion of about 6% is invisible UV radiation with wavelengths from 290 to 400 nm (UVA & UVB). More than 80 years ago, Symrise responded to the then supposed major culprit for skin damage, UV radiation, with the UVB filter Neo Heliopan® Hydro. Since then we have introduced a broad pallet of UV filters into our portfolio. More recently the damaging effects of visible light and infrared radiation have become known and Symrise is working on solutions to protect human skin from the different aspects of solar radiation, satisfying global & regional requirements.

EXPERTISE & 360° SUPPORT

OUR *know-how* AT YOUR SERVICE



SYMRISE, GO-TO-PARTNER

FOR MODERN SUN CARE

With more than 80 years of experience with UV Filters & sun care formulations, Symrise is a leading supplier of sun protection solutions. Symrise is known for its innovation having more than 1000 patents globally, including more than 300 exclusively for cosmetic ingredients.

At Symrise, we believe that offering you a wide variety of solutions for all of your sun application needs is just the beginning. We are also passionate about helping you find the perfect solution to fit your unique requirements.

All our departments, incl. Regulatory Affairs, Consumer Market Insights, Marketing, Product Development / Application Laboratories etc, provide you with the support you need to develop formulations that will be adapted to your specific market.



A romantic couple embracing on a beach at sunset. The man has a beard and is wearing a blue plaid shirt, while the woman has long blonde hair and is wearing a straw hat and a blue plaid dress. They are both smiling broadly. In the background, another couple is embracing; the woman has voluminous curly hair and is wearing sunglasses and a grey tank top, while the man is also smiling. The scene is bathed in warm, golden light from the setting sun, creating a lens flare effect.

UV FILTERS & BEYOND

A MUST FOR *healthy* SKIN!

WIDE RANGE OF SOLUTIONS

FOR BROAD SPECTRUM & OPTIMIZED SUN PROTECTION

UV rays can cause acute and chronic damages to the skin. The type of damages depends on the wavelength: UVB radiation can cause sunburn extending to most severe burning of the skin. UVA rays, although being less energetic than UVB rays, penetrate into deeper layers of the skin where they can accelerate the skin's aging processes. The shorter wave UVA-II radiation additionally contributes to the development of sunburn. Moreover, UVA radiation can trigger phototoxic or photoallergic skin reactions. Very frequent and unprotected irradiation of the skin by sunlight leads to a loss of skin elasticity and to increased development of wrinkles, resulting in premature skin aging. In extreme cases, pathogenic changes in the skin extending to skin cancer are observed.

However, the skin is not only exposed to UV radiation, but also to infrared and visible radiation. Recent research has outlined that the skin is also damaged by excess exposure to these rays and needs protection. These developments coincide with the thoughts of the American dermatologist Christopher Wild with the term "exposome" and has been extrapolated by Professor Jean Krutmann (Member of the Scientific Advisory Board at Symrise) et al. in 2016. They proposed that environmental factors which are part of the skin aging exposome fall into four major categories: sun radiation including ultraviolet radiation, visible light and infrared radiation, air pollution, tobacco smoke, and nutrition and certain others.

* Source: J. Dermatol. Sci (2016), <http://dx.doi.org/10.2016/j>

	Product Name / Code	INCI	Solubility
UVB	Neo Heliopan® 303 600154	Octocrylene	oil-soluble
	Neo Heliopan® OS 131494	Ethylhexyl Salicylate	oil-soluble
	Neo Heliopan® HMS 182573	Homosalate	oil-soluble
	Neo Heliopan® Hydro 103089	Phenylbenzimidazole Sulfonic Acid	water-soluble
	Neo Heliopan® AV 660523	Ethylhexyl Methoxycinnamate	oil-soluble
	Neo Heliopan® E 1000 656083	Isoamyl p-Methoxycinnamate	oil-soluble
	Neo Heliopan® MBC 600266	4-Methylbenzylidene Camphor	oil-soluble
UVA	Neo Heliopan® 357 622501	Butyl Methoxydibenzoylmethane	oil-soluble
	Neo Heliopan® AP 106796	Disodium Phenyl Dibenzimidazole Tetrasulfonate	water-soluble
UVA & UVB	Neo Heliopan® BMT 102814	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	oil-soluble
	Neo Heliopan® BB 116210	Benzophenone-3	oil-soluble
BEYOND	Corapan® TQ 182585	Diethylhexyl 2,6-Naphthalate	oil-soluble
	SymEffect™ Sun 105604	Cera Alba (Bees Wax), Sodium Stearoyl Lactylate	oil-miscible

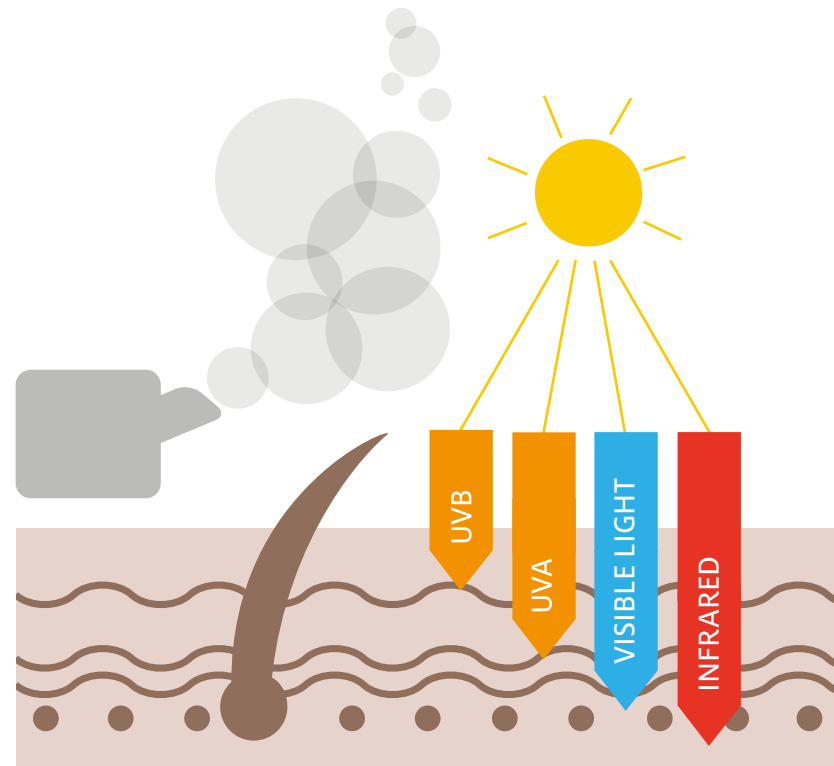
UV FILTERS & BEYOND

360° SUPERIOR SPECTRUM ADVANCED SKIN PROTECTION

THE 7 ELEMENTS OF SKIN AGING



SOLAR RADIATION & POLLUTION ARE TWO IMPORTANT FACTORS IN SKIN AGING



SOLUTIONS FOR SKIN PROTECTION

UVA & UVB

(approx. 6%*)

- UVA: Induces dark spots & uneven skin tone, destroys collagen, contributes to fine lines, wrinkles & skin cancer
- UVB: Contributes to skin barrier destruction, dehydration, inflammation & skin cancer

SOLUTIONS FOR SKIN PROTECTION AGAINST UVA/UVB

- Neo Heliopan® Range

VISIBLE LIGHT

(approx. 42%*)

- Destroys collagen
- Induces oxidative stress
- Reduces skin's radiance
- Induces immediate and persistent hyperpigmentation: dark spots, dull skin, uneven skin tone

SOLUTIONS FOR SKIN PROTECTION AGAINST VISIBLE LIGHT

- SymVital® AR 3040
- SymWhite® 377
- Dragosine®
- SymDetox™ 1711
- SymBright® 2036

POLLUTION

- Airborne particulate matter comes from many different sources, like industrial plants, cigarettes, cars and domestic heating emissions.
- Induces pigmentation disorders, skin inflammation, promotes premature aging, destroys collagen and more.

SOLUTIONS FOR SKIN PROTECTION AGAINST AIR POLLUTION

- SymUrban®
- SymVital® AR 3040
- SymFinity® 1298
- SymBright® 2036
- SymControl® Care
- SymReboot™ L19

* CIE: Solar spectral irradiance, CIE Technical Report No 85,1989, table 4 'Global solar irradiance at sea level'

LEGISLATION

Handling DIFFERENT LEGAL STATUS

PRODUCT / Symrise Product		EU	USA	CANADA	JAPAN			ASEAN [1]	CHINA
					Rinse-off	Leave-on	Mucous membranes		
All values in %									
Neo Heliopan® 303	600154	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Neo Heliopan® OS	131494	5.0	5.0	5.0	10.0	10.0	5.0	5.0	5.0
Neo Heliopan® HMS	182573	10.0	15.0	15.0	10.0	10.0	10.0	10.0	10.0
Neo Heliopan® Hydro	103089	8.0	not allowed [4]	not allowed [4]	3.0	3.0	not allowed	8.0	8.0
Neo Heliopan® AV	660523	10.0	7.5 [3]	7.5	20.0	20.0	8.0	10.0	10.0
Neo Heliopan® E 1000	656083	10.0	not allowed	not allowed	not allowed	not allowed	not allowed	10.0	10.0
Neo Heliopan® MBC	600266	4.0	not allowed	4.0	not allowed	not allowed	not allowed	4.0	4.0
Neo Heliopan® 357	622501	5.0	3.0 [2]	3.0	10.0	10.0	10.0	5.0	5.0
Neo Heliopan® AP	106796	10.0	not allowed	not allowed	not allowed	not allowed	not allowed	10.0	10.0
Neo Heliopan® BMT	102814	10.0	not allowed	not allowed	3.0	3.0	not allowed	10.0	10.0
Neo Heliopan® BB	116210	6.0	6.0 [3]	6.0	100.0	5.0	5.0	10.0	10.0

The use of UV filters in sun care preparations is highly regulated in many regions in the world as they are considered as active ingredients! Sunscreen products in some countries and regions are regulated as cosmetics via a positive listing as in the EU and Japan.

In other countries they are legislated as over the counter (OTC) drugs as in the USA, Canada and Australia.

It is advised to check the legal status of each UV filter for each country the finished formulation will be sold in before formulation work starts. This is especially important if global formulations are required.

Please find below the maximum allowed dosages in different regions / countries:

PRODUCT / Symrise Product		TAIWAN	SOUTH KOREA	AUSTRALIA	MERCOSUR [5]	MEXICO	SOUTH AFRICA
All values in %							
Neo Heliopan® 303	600154	10.0	10.0	10.0	10.0	10.0	10.0
Neo Heliopan® OS	131494	5.0	5.0	5.0	5.0	5.0	5.0
Neo Heliopan® HMS	182573	10.0	10.0	15.0	15.0	10.0	10.0
Neo Heliopan® Hydro	103089	4.0	4.0	not allowed [4]	8.0	8.0	8.0
Neo Heliopan® AV	660523	10.0	7.5	10.0	10.0	10.0	10.0
Neo Heliopan® E 1000	656083	10.0	10.0	10.0	10.0	10.0	10.0
Neo Heliopan® MBC	600266	4.0	4.0	4.0	4.0	4.0	4.0
Neo Heliopan® 357	622501	5.0	5.0	5.0	5.0	5.0	5.0
Neo Heliopan® AP	106796	10.0	10.0	10.0	10.0	10.0	10.0
Neo Heliopan® BMT	179840	10.0	10.0	10.0	10.0	10.0	10.0
Neo Heliopan® BB	116210	6.0	5.0	10.0	10.0	10.0	10.0

[1] ASEAN = Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

[2] Allowed to be used alone or in combination with Ethylhexyl Methoxycinnamate, Cinoxate, Benzophenone-3 and -4, Ethylhexyl Salicylate, Octocrylene, Homosalate, Dioxybenzone and TEA Salicylate

[3] In the future not allowed in sunscreen products in the state of Hawaii, USA from January 1, 2021

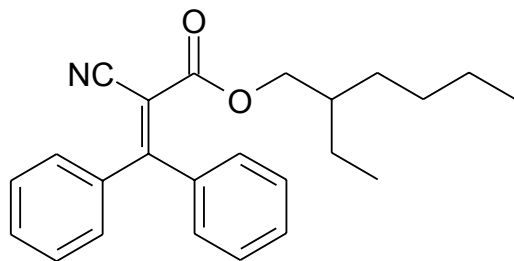
[4] PBSA is allowed but not our Neo Heliopan® Hydro as it is only EFCI cosmetic GMP

[5] Mercosur = Argentina, Brazil, Paraguay, Uruguay, Venezuela

Neo Heliopan® 303

UVB ABSORBER

Product No.	600154
CAS No.	6197-30-4
EINECS	228-250-8
UVB absorber	oil-soluble
Molecular Weight	361.5 g/mol
INCI name	Octocrylene
USAN	Octocrylene
Chemical names	2-Ethylhexyl-2-cyano-3,3-diphenyl-2-propenoate 2-Ethylhexyl-2-cyano-3,3-diphenyl acrylate
Empirical Formula	C ₂₄ H ₂₇ NO ₂



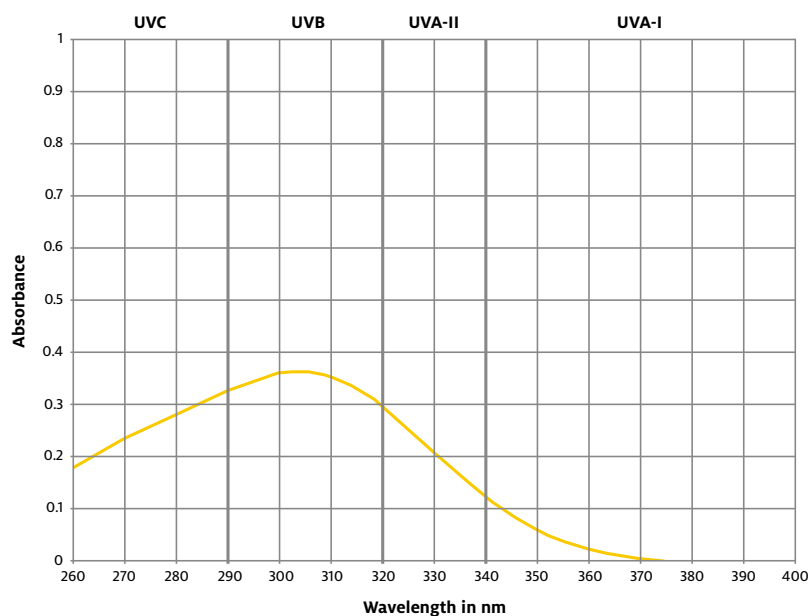
GENERAL DESCRIPTION

Appearance / Condition at 20°C	clear, light yellow to yellow viscous liquid
Odor	faint odor (comparable to standard)

ANALYTICAL DATA

Assay (GLC) %	min. 98
Single impurity >0.5%	not detectable
Sum of impurities >2.0%	not detectable
Relative density (D25/25)	1.045 – 1.055
Relative density (D20/4)	1.046 – 1.056
Refractive Index (n ₂₀ /D)	1.561 – 1.571
Specific extinction E _{1%} ^{1cm} , in methanol λ max. 303 nm	340 – 369
Solubility at 20°C	Readily soluble in most cosmetic oils except mineral oil and glycols
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE $E_{1\%}^{1\text{cm}}$ IN METHANOL



SOLUBILITY OF SOLID UV ABSORBERS IN Neo Heliopan® 303

Neo Heliopan® 357	approx. 27%
Neo Heliopan® BMT	33%
Neo Heliopan® BB	32%
Neo Heliopan® MBC	25%
Ethylhexyl Triazone	23%
Diethylamino Hydroxybenzoyl Hexyl Benzoate	49%

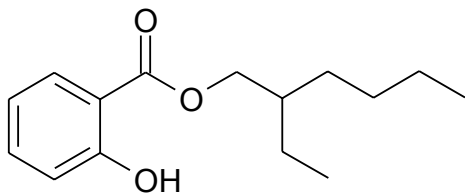
THE BENEFITS

- Neo Heliopan® 303 is an effective oil-soluble and liquid UVB absorber which shows significant protection in the shorter UVA-II range (320 to 340 nm). Maximum absorption is at around 303 nm with an UV absorbance ($E_{1\%}^{1\text{cm}}$) of min. 340
- Neo Heliopan® 303 has an excellent photostability itself and can improve the *in vitro* photostability of Butyl Methoxydibenzoylmethane
- It is easy to incorporate into emulsions and suitable for a wide variety of cosmetic applications. Cold processing of sunscreen products is possible
- Neo Heliopan® 303 is used in combination with other UVB absorbers to formulate high SPF sunscreen products
- The oil-soluble UVB filter is ideal to formulate water resistant sunscreen products because of its very high resistance to water wash-off
- Neo Heliopan® 303 is an excellent solvent for crystalline and oil-soluble UV absorbers and cosmetic ingredients
- Approved worldwide. Concentration maximum varies according to local legislation
- Neo Heliopan® 303 is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® OS

UVB ABSORBER

Product No.	131494
CAS No.	118-60-5
EINECS	204-263-4
UVB absorber	oil-soluble
Molecular Weight	250.37 g/mol
INCI name	Ethylhexyl Salicylate
USAN	Octisalate
Chemical names	2-Ethylhexyl salicylate
Empirical Formula	C ₁₅ H ₂₂ O ₃



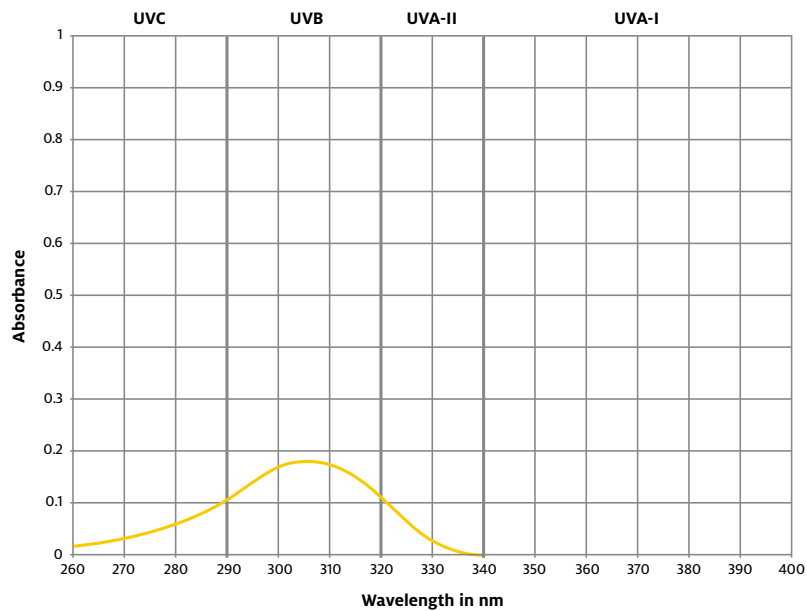
GENERAL DESCRIPTION

Appearance / Condition at 20°C	clear, colorless to pale yellow liquid
Odor	slightly floral (comparable to standard)

ANALYTICAL DATA

Assay (GLC) %	min. 99
Single impurity >0.5%	not detectable
Sum of impurities >2.0%	not detectable
Relative density (D25/25)	1.011 – 1.016
Relative density (D20/4)	1.012 – 1.017
Refractive Index (n ₂₀ /D)	1.500 – 1.503
Specific extinction E _{1cm} ^{1%} , in methanol λ max. 305 nm	165 – 185
Solubility at 20°C	Readily soluble in most cosmetic oils except glycols
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE $E_{1\text{cm}}^{1\%}$ IN METHANOL



SOLUBILITY OF SOLID UV ABSORBERS IN Neo Heliopan® OS

Neo Heliopan® 357	approx. 18%
Neo Heliopan® BMT	27%
Neo Heliopan® BB	17%
Neo Heliopan® MBC	25%
Ethylhexyl Triazone	12%

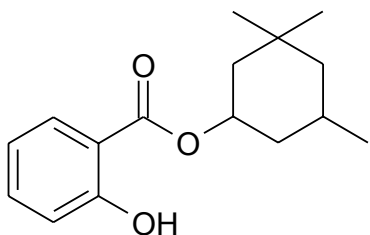
THE BENEFITS

- Neo Heliopan® OS is an effective UVB absorber with an UV absorbance ($E_{1\text{cm}}^{1\%}$) of min. 165 at around 305 nm for various applications
- It is used for products with low and – in combination with other UV filters – high sun protection factors
- It is easy to incorporate into emulsions and suitable for a wide variety of cosmetic applications. Cold processing of sunscreen products is possible
- Neo Heliopan® OS is an effective solubilizer for crystalline UV absorbers such as Neo Heliopan® 357, BMT, BB, MBC as well as Ethylhexyl Triazone, Diethylhexyl Butamido Triazone and Diethylamino Hydroxybenzoyl Hexyl Benzoate
- Neo Heliopan® OS is oil-soluble and can therefore be used in water-resistant sunscreens
- Approved worldwide. Concentration maximum varies according to local legislation
- Neo Heliopan® OS is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan[®] HMS

UVB ABSORBER

Product No.	182573
CAS No.	118-56-9
EINECS	204-260-8
UVB absorber	oil-soluble
Molecular Weight	262.2 g/mol
INCI name	Homosalate
USAN	Homosalate
Chemical names	3,3,5-Trimethylcyclohexylsalicylate, Homomenthyl salicylate
Empirical Formula	C ₁₆ H ₂₂ O ₃



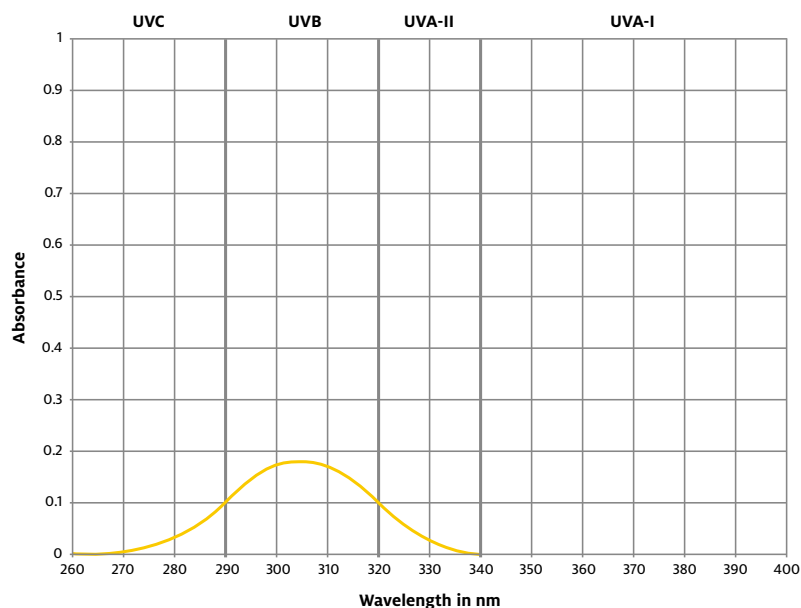
GENERAL DESCRIPTION

Appearance / Condition at 20°C	clear, colorless to light yellow liquid
Odor	slight minty odor (comparable to standard)

ANALYTICAL DATA

Assay (GLC) %	min. 98
Relative density (D25/25)	1.049 – 1.053
Relative density (D20/4)	1.050 – 1.053
Refractive Index (n ₂₀ /D)	1.516 – 1.519
Specific extinction E _{1cm} ^{1%} , in methanol λ max. 305 nm	170 – 180
Solubility at 20°C	Readily soluble in most cosmetic oils except glycols
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE $E_{1cm}^{1\%}$ IN METHANOL



SOLUBILITY OF SOLID UV ABSORBERS IN Neo Heliopan® HMS

Neo Heliopan® 357	approx. 20%
Neo Heliopan® BMT	30%
Neo Heliopan® BB	19%
Neo Heliopan® MBC	46%
Ethylhexyl Triazone	11%

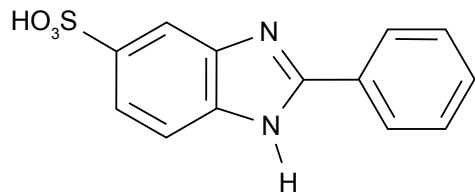
THE BENEFITS

- Neo Heliopan® HMS is an effective UVB absorber with an UV absorbance ($E_{1cm}^{1\%}$) of min. 170 at 305 nm for various applications
- It is used for products with low and – in combination with other UV filters – high sun protection factors
- It is easy to incorporate into emulsions and suitable for a wide variety of cosmetic applications. Cold processing of sunscreen products is possible
- Neo Heliopan® HMS is an effective solubilizer for crystalline UV absorbers such as Neo Heliopan® 357, BMT, BB, MBC as well as Ethylhexyl Triazone, Diethylhexyl Butamido Triazone and Diethylamino Hydroxybenzoyl Hexyl Benzoate
- Neo Heliopan® HMS is oil-soluble and can therefore be used in water-resistant sunscreens
- Approved worldwide. Concentration maximum varies according to local legislation
- Neo Heliopan® HMS is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

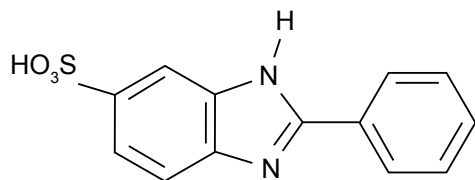
Neo Heliopan® Hydro

UVB ABSORBER

Product No.	103089
CAS No.	27503-81-7
EINECS	248-502-0
UVB absorber	water-soluble
Molecular Weight	274.3 g/mol
INCI name	Phenylbenzimidazole Sulfonic Acid
USAN	Ensulizole
Chemical names	2-Phenylbenzimidazole- 5-sulfonic acid
Empirical Formula	$C_{13}H_{10}N_2O_3S$



The two tautomeric forms of the Neo Heliopan® Hydro molecule may lead to differences in the solid IR spectrum.



GENERAL DESCRIPTION

Appearance / Condition at 20°C	white to light beige powder
Odor	neutral (comparable to standard)

ANALYTICAL DATA

Assay (USP/NF) %	98 – 102
Loss on drying %	max. 2
Melting point °C	>300
Specific extinction $E_{1\%}^{1\text{cm}}$, in water as sodium salt at λ max. 302 nm	920 – 990

Solubility of Neo Heliopan® Hydro as sodium or triethanolamine salt at 20°C in

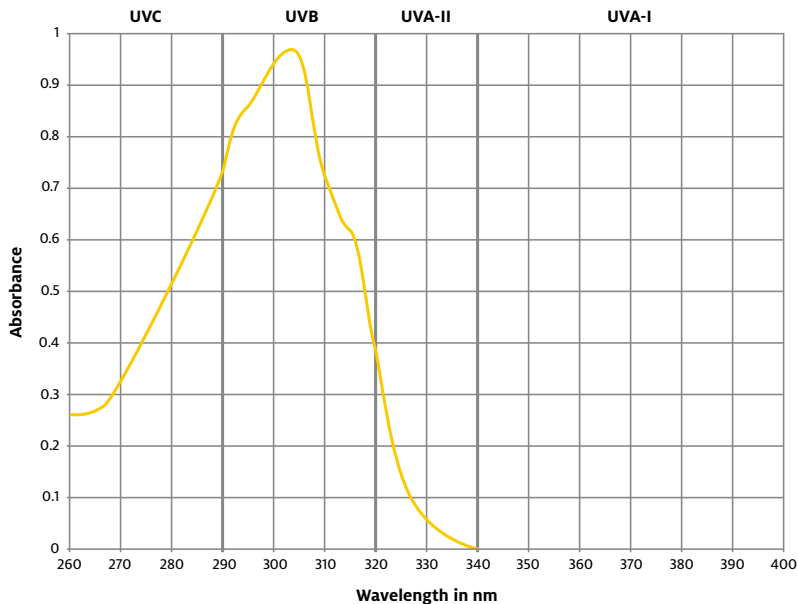
Ethanol / Isopropanol	miscible
Water	< 30%
Water / Ethanol (10 – 50%)	< 20%
Water / Isopropanol (10 – 50%)	< 20%
not soluble in oil	

Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C
-----------------------------------	--

IMPORTANT ADVICE FOR FORMULATIONS

Neo Heliopan® Hydro is a fine crystalline powder. The water solubility of the free acid is extremely small. By the addition of a base such as sodium hydroxide or triethanolamine water-soluble salts will be formed. In general formulations containing Neo Heliopan® Hydro should have a pH value between 7.2 and 7.5 when neutralized with sodium hydroxide, triethanolamine and potassium hydroxide as at pH values below 7 Neo Heliopan® Hydro may revert to its acid form and crystallization could result. A pH value > 6.0 is possible if L-Arginine is used as neutralization agent. (Symrise patent EP 2178493 B). Neo Heliopan® Hydro can be added non-neutralized to the aqueous phase of the formulation, addition of a neutralization base with vigorous stirring will form the salt which then dissolves into the aqueous phase. Neo Heliopan® Hydro can be also added as aqueous pre-mix.

UV ABSORBANCE $E_{1\%}^{1\text{cm}}$ IN WATER AS SODIUM SALT



PREPARATION OF NEUTRALIZED AQUEOUS SOLUTIONS

Mix approx. two thirds of the neutralization agent with water and add Neo Heliopan® Hydro. Disperse the Neo Heliopan® Hydro while stirring. Neutralize the dispersion up to the needed pH value while stirring thoroughly. At the end of the neutralizing process add the base slowly, as solubilizing of residual Neo Heliopan® Hydro may take some time. The neutralized solution must be nearly clear. Add the rest of needed water for the final percentage, stir until homogeneous.

*In the final formulation, the pH value preventing recrystallization of Neo Heliopan® Hydro vary with the used neutralization agent:

Biotive® L- Arginine: 6.2 – 6.8

Triethanolamine: 7.0 – 7.8

Sodium Hydroxide: 7.0 – 7.8

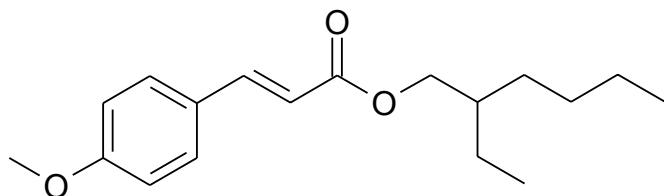
THE BENEFITS

- Neo Heliopan® Hydro is a highly effective UVB absorber with an UV absorbance ($E_{1\%}^{1\text{cm}}$) of min. 920 at around 302 nm which forms water-soluble salts with the addition of a base
- It is practically odorless, has an excellent stability and is compatible with other ingredients and packaging
- Neo Heliopan® Hydro has an excellent photostability and safety profile
- A large SPF increase could be reached by combining Hydro with oil soluble UV filters in sunscreen products. Only a minimum of concentration of these combinations is necessary to achieve the desired SPF
- Neo Heliopan® Hydro is very suitable for water-based transparent sunscreen products such as gels or sprays
- It is possible to formulate water-resistant sunscreen products with Hydro
- Recommended pH value for finished products containing Neo Heliopan® Hydro: 7.0 to 7.5 for TEA, NaOH, KOH and > 6.0 for L-Arginine
- Approved worldwide. Concentration maximum varies according to local legislation
- Neo Heliopan® Hydro is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® AV

UVB ABSORBER

Product No.	660523
CAS No.7	83834-59-7
EINECS	226-775-7
UVB absorber	oil-soluble
Molecular Weight	290.44 g/mol
INCI name	Ethylhexyl Methoxycinnamate
USAN	Octinoxate
Chemical names	2-Ethylhexyl p-Methoxycinnamate
Empirical Formula	$C_{18}H_{26}O_3$



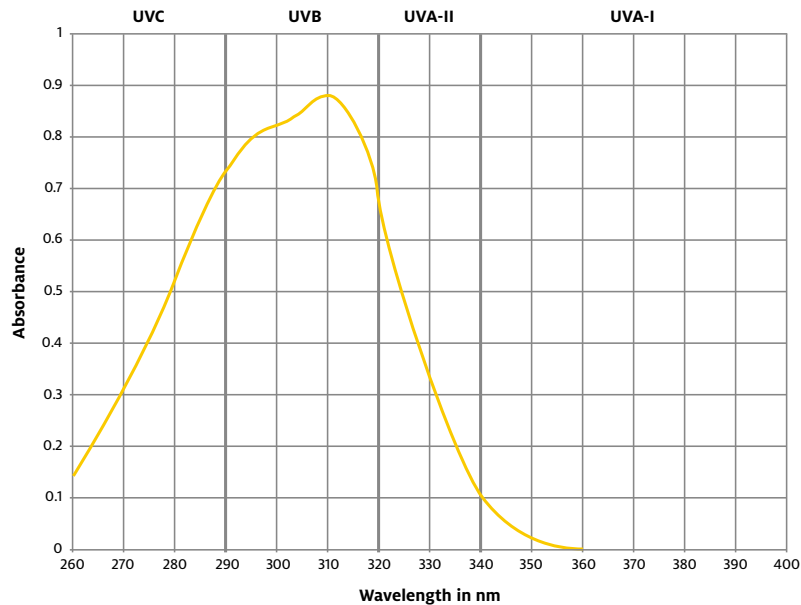
GENERAL DESCRIPTION

Appearance / Condition at 20°C	clear, colorless to light yellow liquid
Odor	practically odorless (comparable to standard)

ANALYTICAL DATA

Assay (GLC) %	min. 98
Single impurity >0.5%	not detectable
Sum of impurities >2.0%	not detectable
Butylhydroxytoluene (BHT) %	0.05 – 0.10
Relative density (D25/25)	1.005 – 1.013
Relative density (D20/4)	1.007 – 1.014
Refractive Index (n ₂₀ /D)	1.543 – 1.547
Specific extinction $E_{1cm}^{1\%}$, in methanol λ max. 307/308 nm	830 – 900
Solubility at 20°C	Readily soluble in most cosmetic oils except glycols
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE $E_{1\text{cm}}^{1\%}$ IN METHANOL



SOLUBILITY OF SOLID UV ABSORBERS IN Neo Heliopan® AV

Neo Heliopan® 357	approx. 17%
Neo Heliopan® BMT	19%
Neo Heliopan® BB	24%
Neo Heliopan® MBC	24%
Ethylhexyl Triazone	24%

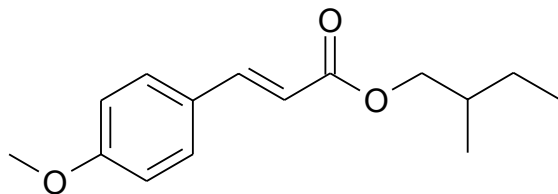
THE BENEFITS

- Neo Heliopan® AV is a highly effective UVB absorber with a specific extinction ($E_{1\text{cm}}^{1\%}$) of min. 830 at around 308 nm in methanol and has additional absorption in the shorter UVA-II range (320 to 340 nm)
- It is oil-soluble and virtually odorless and suitable for a wide variety of cosmetic applications
- Neo Heliopan® AV is an excellent absorber for UV broad spectrum protection and also for water resistant products
- The absorber has an excellent compatibility with cosmetic ingredients and can be easily incorporated into emulsions; cold processing is possible
- Neo Heliopan® AV is an excellent solvent for crystalline and oil-soluble UV absorbers
- It has a moderate photostability, but when used at 2% together with 5% Neo Heliopan® 357 and other UVB filters both filters are relatively photostable
- Approved worldwide. Concentration maximum varies according to local legislation
- Neo Heliopan® AV is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® E 1000

UVB ABSORBER

Product No.	656083
CAS No.	71617-10-2
EINECS	275-702-5
UVB absorber	oil-soluble
Molecular Weight	248.35 g/mol
INCI name	Isoamyl p-Methoxycinnamate
Chemical names	Isoamyl p-Methoxycinnamate Isoamyl 2-(4-Methoxy-phenyl)-2-Propenoate
Empirical Formula	C ₁₅ H ₂₀ O ₃



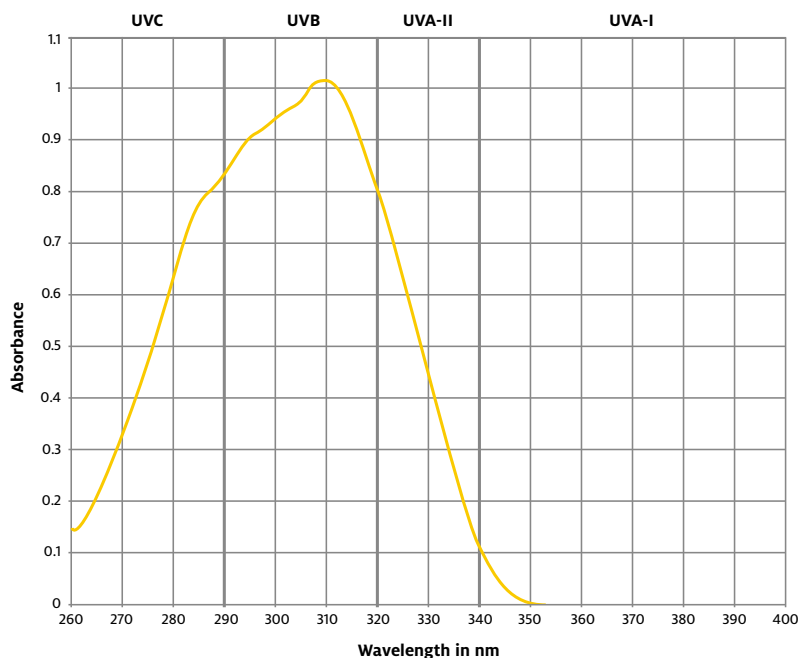
GENERAL DESCRIPTION

Appearance / Condition at 20°C	clear, colorless to pale yellow liquid
Odor	slight odor, no effect on the finished product (comparable to standard)

ANALYTICAL DATA

Assay (GLC) %	min. 98
Relative density (D ₂₀ /4)	1.038 – 1.042
Refractive Index (n ₂₀ /D)	1.556 – 1.560
Specific extinction E _{1cm} ^{1%} , in methanol λ max. 307/308 nm	min 980
Solubility at 20°C	Readily soluble in most cosmetic oils except glycols
Shelf life and storage conditions	30 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE $E_{1\text{cm}}^{1\%}$ IN METHANOL



SOLUBILITY OF SOLID UV ABSORBERS IN Neo Heliopan® E 1000

Neo Heliopan® 357	approx. 20%
Neo Heliopan® BMT	35%
Neo Heliopan® BB	26%
Neo Heliopan® MBC	25%
Ethylhexyl Triazone	34%

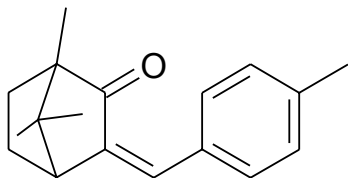
THE BENEFITS

- Neo Heliopan® E 1000 is a highly effective UVB absorber with a specific extinction ($E_{1\text{cm}}^{1\%}$) of min. 980 at around 308 nm in methanol and has additional absorption in the shorter UVA-II range (320 to 340 nm)
- It is oil-soluble and virtually odorless and suitable for a wide variety of cosmetic applications
- Neo Heliopan® E 1000 is an excellent absorber for UV broad spectrum protection and also for water resistant products
- The absorber has an excellent compatibility with cosmetic ingredients and can be easily incorporated into emulsions; cold processing is possible
- Neo Heliopan® E 1000 is an excellent solvent for crystalline and oil-soluble UV absorbers
- It has a moderate photostability, but when used at 2% together with 5% Neo Heliopan® 357 and other UVB filters both filters are relatively photostable
- Approved up to 10% in: Europe, Australia, Mercosur, Mexico, ASEAN states, China, Taiwan, South Korea and South Africa (further information under the legislation part page 8/9)
- Neo Heliopan® E 1000 is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® MBC

UVB ABSORBER

Product No.	600266
CAS No.	36861-47-9
EINECS	253-242-6
UVB absorber	oil-soluble
Molecular Weight	254.4 g/mol
INCI name	4-Methylbenzylidene Camphor
Chemical names	3-(4'-Methyl) benzyline- bornan-2-one
Empirical Formula	C ₁₈ H ₂₂ O



GENERAL DESCRIPTION

Appearance / Condition at 20°C	pale white to white crystals
Odor	slight odor, no effect on the finished product (comparable to standard)

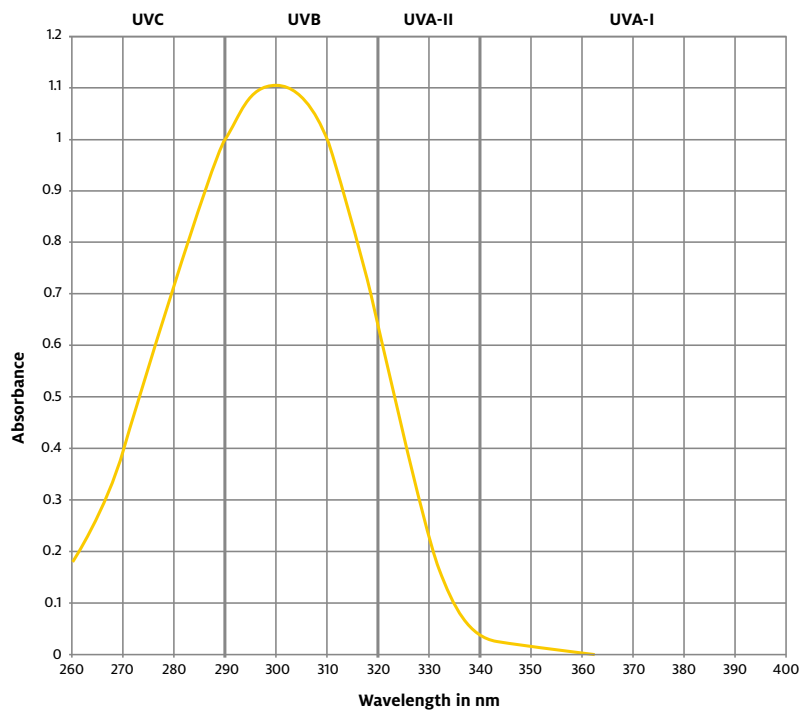
ANALYTICAL DATA

Assay (GLC) %	min. 99.5
Camphor (GLC) %	max. 0.02
4-Methylbenzaldehyd (GLC) %	max. 0.1
Melting point °C	min. 66
Specific extinction E _{1cm} ^{1%} , in methanol λ max. 299 nm	min 930
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 10 to 30°C

SOLUBILITY IN LIQUID UV ABSORBERS AND SOLVENTS / EMOLLIENTS AT 20°C

	approx.
Neo Heliopan® AV	24%
Neo Heliopan® E 1000	25%
Neo Heliopan® 303	25%
Neo Heliopan® OS	25%
Neo Heliopan® HMS	46%
C12-15 Alkyl Benzoate	25%
Caprylic/Capric Triglyceride	16%
Corapan® TQ	22%
SymMollient® PDCC	23%
Diisopropyl Adipate	22%
Mineral Oil	9%
Ethanol (96 vol%)	23%
Isopropanol	25%
Water	immiscible

UV ABSORBANCE $E_{1\text{cm}}^{1\%}$ IN METHANOL



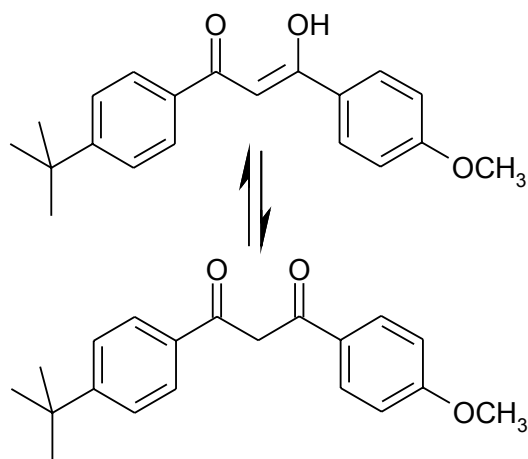
THE BENEFITS

- Neo Heliopan[®] MBC is a highly effective UVB absorber with a specific extinction ($E_{1\text{cm}}^{1\%}$) of min. 930 at around 299 nm in methanol and has additional absorption in the shorter UVA-II range (320 to 340 nm)
- It has a faint odor which has no effect on the finished product
- Neo Heliopan[®] MBC is an oil-soluble, white crystalline powder. Adequate solubility in the formulation must be ensured in order to avoid recrystallization of the Neo Heliopan[®] MBC. The UV filters Neo Heliopan[®] AV, E 1000, 303, OS, HMS and certain emollients are excellent solvents
- Neo Heliopan[®] MBC is an excellent absorber for UV-broadband protection and also for water resistant products
- Neo Heliopan[®] MBC can improve the *in vitro* photostability of Butyl Methoxydibenzoylmethane
- The absorber has an excellent compatibility with cosmetic ingredients and can be easily incorporated into emulsions; cold processing is possible
- Approved up to 4% in: Europe, Australia, Mercosur, Mexico, South Africa, China, Taiwan, South Korea and the ASEAN states (further information under the legislation part page 8/9)
- Neo Heliopan[®] MBC is a safe and effective UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® 357

UVA ABSORBER

Product No.	622501
CAS No.	70356-09-1
EINECS	274-581-6
UVA absorber	oil-soluble
Molecular Weight	310.4 g/mol
INCI name	Butyl Methoxydibenzoyl- methane
USAN	Avobenzone
Chemical names	1-(4-Methoxyphenyl)-3- (4-tert.-butyl phenyl) propan-1,3-dione
Empirical Formula	$C_{20}H_{22}O_3$



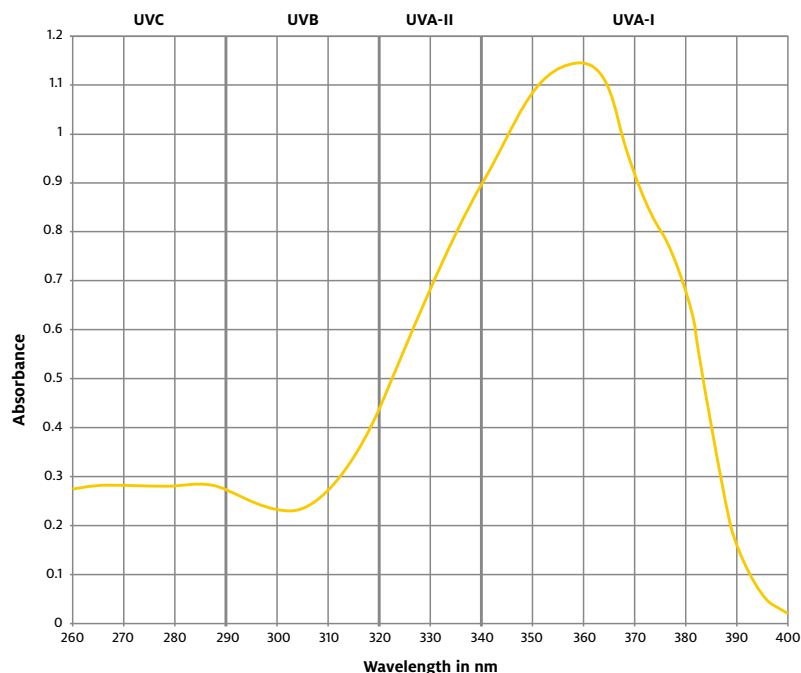
GENERAL DESCRIPTION

Appearance / Condition at 20°C	white to pale yellow powder
Odor	weakly aromatic, no effect on finished product (comparable to standard)

ANALYTICAL DATA

Assay (GLC) %	95.0 – 100.0
Single impurity >3.0%	not detectable
Sum of impurities >4.5%	not detectable
Loss on drying (USP)%	max. 0.5
Melting point °C	81.0 – 86.0
Specific extinction $E_{1\%}^{1\text{cm}}$, in methanol λ max. 357 nm	1100.0 – 1210.0
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE E_{1cm}^{1%} IN METHANOL



SOLUBILITY IN LIQUID UV ABSORBERS AND SOLVENTS/ EMOLLIENTS AT 20°C

Component	approx.	Component	approx.
Neo Heliopan® AV	17%	C12-15 Alkyl Benzoate	14%
Neo Heliopan® E 1000	20%	Caprylic/Capric Triglyceride	14%
Neo Heliopan® 303	27%	Corapan® TQ	15%
Neo Heliopan® OS	18%	SymMollient® PDCC	14%
Neo Heliopan® HMS	20%	Diisopropyl Adipate	16%
		Mineral Oil	<1%
		Ethanol (96 vol%)	2%
		Isopropanol	2%
		Water	immiscible

THE BENEFITS

- The most important UVA filter in the world
- Highly effective with a maximum absorption at 357 nm with a specific extinction (E_{1cm}^{1%}) of about 1100 and with additional absorbing properties in the UVA-II spectrum
- Neo Heliopan® 357 is an oil-soluble, crystalline powder with a slight aromatic odor. Adequate solubility in the formulation must be ensured in order to avoid recrystallization of the Neo Heliopan® 357. The UV filters Neo Heliopan® AV, E 1000, 303, OS, HMS and certain emollients are excellent solvents
- Neo Heliopan® 357 should be used in association with effective UVB absorbers to achieve formulations with broad-spectrum protection
- In combination with the water-soluble UVA-II absorber Neo Heliopan® AP very broad spectrum UVA protection products can be formulated
- Approved worldwide. Concentration maximum varies according to local legislation
- Neo Heliopan® 357 is a safe and effective UVA absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

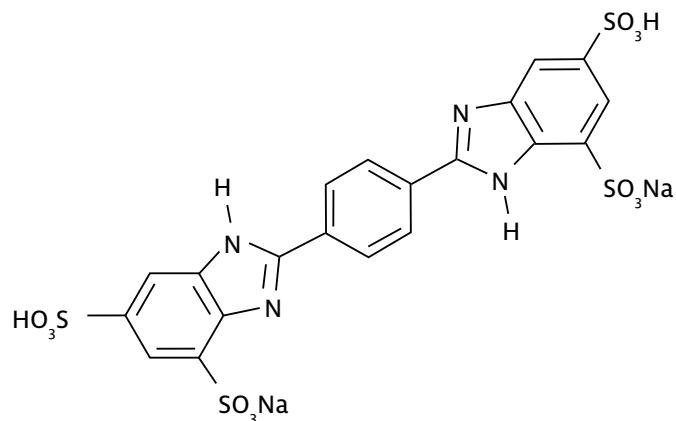
IMPORTANT ADVICE FOR FORMULATIONS

When formulating with Neo Heliopan® 357 a chelating agent should be added to the oil phase of the emulsion to avoid the formation of colored complexes with free metal ions such as iron. The use of formaldehyde donating preservative systems, or preservation systems with reactive methylene groups, should be avoided since these species react with Neo Heliopan® 357 at temperatures above 30°C. This results in loss of preservation in the formulation. The combination of Neo Heliopan® 357 and Zinc Oxide can interact to form a complex which may precipitate out. Neo Heliopan® 303, Neo Heliopan® BMT and Corapan TQ® (Diethylhexyl 2,6-Naphthalate) can improve the photostability of Neo Heliopan® 357.

Neo Heliopan® AP

UVA ABSORBER

Product No.	106796
CAS No.	180898-37-7
ELINCS	429-750-0
UVA absorber	water-soluble
Molecular Weight	674.59 g/mol
INCI name	Disodium Phenyl Dibenzimidazole Tetrasulfonate
Chemical names	2,2'-(1,4-Phenylene) bis- [1H-benzimidazole-4, 6- disulfonic acid], disodium salt
Empirical Formula	$C_{20}H_{12}N_4Na_2O_{12}S_4$



GENERAL DESCRIPTION

Appearance / Condition at 20°C	yellow to dark yellow powder
Odor	practically odorless (comparable to standard)

ANALYTICAL DATA

Assay (HPLC; Sum of 3 isomers) %	min. 96.0
Non volatile residue %	min. 97.0
Flash point °C	<100
Specific extinction $E_{1\%}^{1cm}$, in water as sodium salt at λ max. 335 nm	min. 770

Solubility of Neo Heliopan®
AP at 20°C in

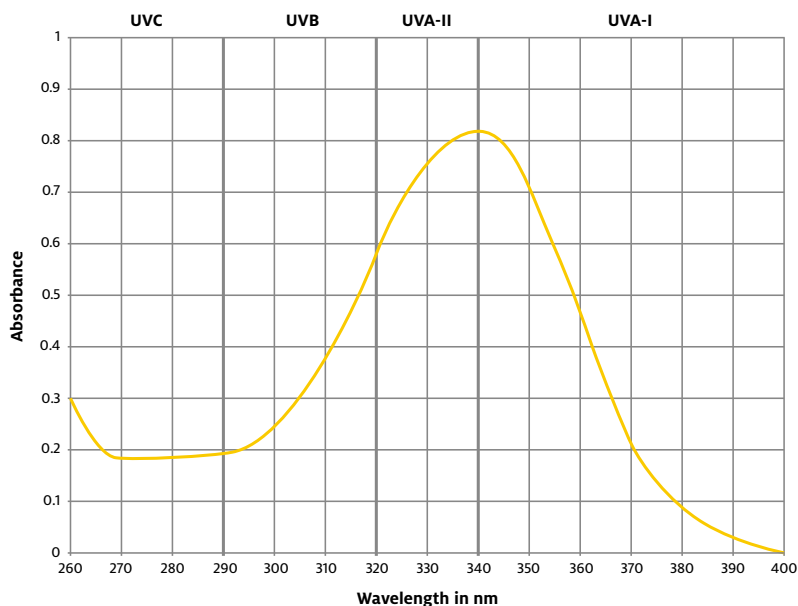
Ethanol 96 Vol%	<0.1%
Water (as free acid)	1%
Water (as Arginine salt)	15%
Water (as sodium salt)	12%
not soluble in oil	

Shelf life and storage conditions	36 months in the original, unopened container, at 5 to 40°C
-----------------------------------	---

IMPORTANT ADVICE FOR FORMULATIONS

Neo Heliopan® AP is a fine yellow powder. The free acid is virtually insoluble in water. By the addition of a base such as sodium hydroxide, potassium hydroxide or triethanolamine the water-soluble salts will be formed. Neo Heliopan® AP can be added non-neutralized to the aqueous phase of the formulation, addition of a neutralization base with vigorous stirring will form the salt which then dissolves into the aqueous phase. Neo Heliopan® AP can be also added as aqueous pre-mix. In finished formulations Neo Heliopan® AP is stable in a wide pH range (5.0 – 9.0) without incurring the risk of crystallization. Care has to be taken when Neo Heliopan® AP is used in the presence of quaternary ammonium salts since complexes may form. Tocopherol is known to incur discoloration problems in a number of formulations; therefore we recommend the usage of tocopheryl acetate when formulating with Neo Heliopan® AP. Neo Heliopan® AP is an electrolyte and therefore will have an effect upon the viscosity of carbomer-thickened emulsions or gels. The addition of a non-carbomer derived thickening agent such as xanthan gum and its derivatives will increase the viscosity of the formulation. If Neo Heliopan® AP is combined with Zinc Oxide we recommend to disperse Neo Heliopan® AP directly into the aqueous phase and then dissolve it by adding the neutralizing agent until a pH of about 5 is reached.

UV ABSORBANCE $E_{1\%}^{1\text{cm}}$ IN WATER AS SODIUM SALT



PREPARATION OF NEUTRALIZED AQUEOUS SOLUTIONS

Disperse Neo Heliopan® AP in water with stirring. The amount of water used in this step may not exceed 2/3 of the residual scheduled quantity. Neutralize the dispersion up to the needed pH value while stirring thoroughly, at the end of the neutralizing process add the base slowly, as solubilizing of residual Neo Heliopan® AP may take some time.

The neutralized solution must be nearly clear. Fill up to 100% with water and stir until homogeneous.

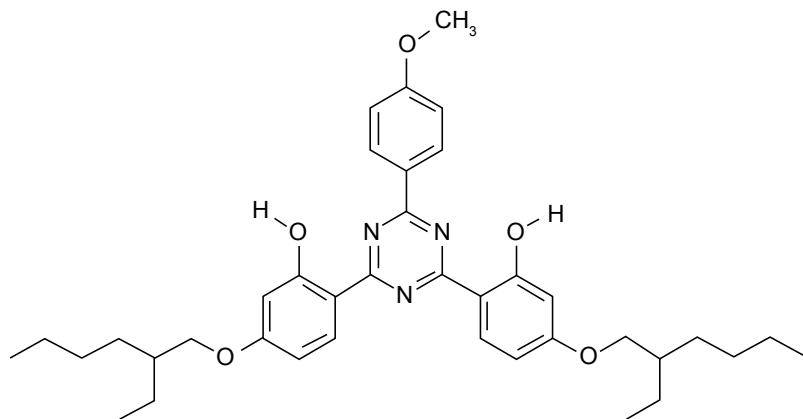
THE BENEFITS

- Neo Heliopan® AP is a highly effective and photostable UVA-II absorber with an UV absorbance ($E_{1\text{cm}}^{1\%}$) of min 770 at around 335 nm which forms water-soluble salts with the addition of a base
- Neo Heliopan® AP is practically odorless, has an excellent stability and is compatible with other ingredients and packaging
- In sun care formulations it shows synergistic effects with oil-soluble UVB filters
- In combination with the UVA-I absorber Neo Heliopan® 357 very broad spectrum UVA protection products can be formulated
- It has an excellent safety profile including extremely low skin penetration
- Suitable for water-based transparent sunscreen products such as gels or clear sprays
- Water-resistant sunscreens can be formulated
- It is fluorescent on exposure to UV light but this can be quenched by the application of Troxerutin (Symrise patent EP2185126 and equivalents)
- Approved up to 10% in: Europe, Australia, Mercosur, Mexico, South Africa, China, Taiwan, South Korea and the ASEAN states (further information under the legislation part page 8/9)
- Neo Heliopan® AP is a safe and effective UVA absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® BMT

UVA/UVB BROAD SPECTRUM ABSORBER

Product No.	102814
CAS No.	187393-00-6
ELINCS	425-950-7
UVA/UVB absorber	oil-soluble
Molecular Weight	627.8 g/mol
INCI name	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine
Chemical names	2,2'-[6-(4-methoxyphenyl)- -1,3,5-triazine-2,4-diyl] bis{5-[(2-ethylhexyl)oxy] phenol}
Empirical Formula	$C_{38}H_{49}N_3O_5$



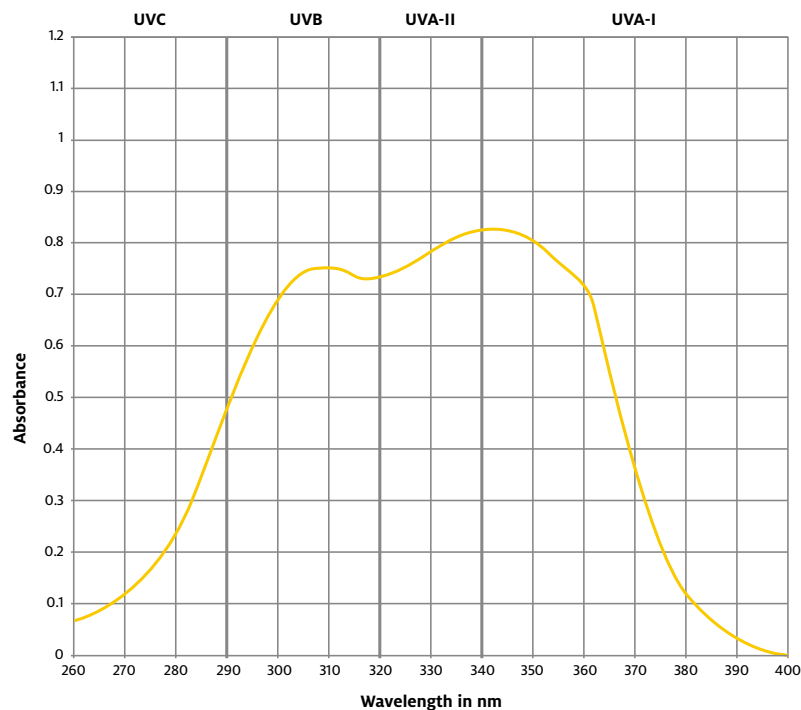
GENERAL DESCRIPTION

Appearance / Condition at 20°C	light yellow to yellow powder
Odor	slight aromatic (comparable to standard)

ANALYTICAL DATA

Assay (HPLC) %	min. 98.0
Sum of impurities %	max. 2.0
Specific extinction $E_{1cm}^{1\%}$, in isopropanol λ max. 337 - 343 nm λ max. 307 - 313 nm	min. 790 min. 720
Shelf life and storage conditions	24 months in the original, unopened container, dry, at 5 to 40°C

UV ABSORBANCE E_{1%}^{1cm} IN ISOPROPANOL



SOLUBILITY IN LIQUID UV ABSORBERS AND SOLVENTS / EMOLLIENTS AT 20°C

	approx.
Neo Heliopan® AV	19%
Neo Heliopan® E 1000	35%
Neo Heliopan® 303	33%
Neo Heliopan® OS	27%
Neo Heliopan® HMS	30%
Dragoxat® 89	6%
Isodragol®	6%
PCL-Liquid® 100	7%

C12-15 Alkyl Benzoate	20%
Caprylic/Capric Triglyceride	11%
Corapan® TQ	35%
SymMollient® PDCC	10%
Diisopropyl Adipate:	9%
Mineral Oil	<1%
Ethanol (96 vol%)	<1%
Water	immiscible

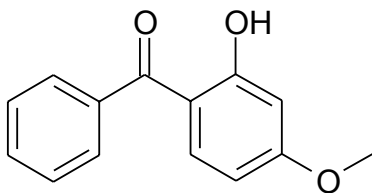
THE BENEFITS

- Neo Heliopan® BMT is a very effective and photostable broad spectrum absorber for a wide range of applications
- Maximum absorbances in isopropanol are at 310 nm, with a minimum specific extinction of 720 and at 340 nm, with a minimum specific extinction of 790 respectively
- Neo Heliopan® BMT is an oil-soluble, crystalline powder with a slight aromatic odor. Adequate solubility in the formulation must be ensured in order to avoid recrystallization of the Neo Heliopan® BMT. The UV filters Neo Heliopan® E 1000, 303, OS, HMS and certain emollients e.g. Corapan® TQ (Diethylhexyl 2,6-Naphthalate) are excellent solvents
- Neo Heliopan® BMT has a synergistic effect with UVB and UVA filters (SPF booster) and is especially recommended for formulating sunscreens which shall meet the requirements of UVA/UVB Balance due to its broad spectrum absorption
- Approved to be used up to 10% in Europe, Switzerland, Australia, Mexico, Mercosur, ASEAN states, China, India, Taiwan and South Korea. Approved in Japan up to 3% in rinse-off and leave-on products. Not approved for use in USA and Canada
- Neo Heliopan® BMT is a safe and effective UVA/UVB broad spectrum absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Neo Heliopan® BB

UVA/UVB BROAD SPECTRUM ABSORBER

Product No.	116210
CAS No.	131-57-7
EINECS	205-031-5
UVA/UVB absorber	oil-soluble
Molecular Weight	228.26 g/mol
INCI name	Benzophenone-3
USAN	Oxybenzone
Chemical names	2-Hydroxy-4-methoxybenzo phenone $C_{14}H_{12}O_3$



GENERAL DESCRIPTION

Appearance / Condition at 20°C	light yellow to yellow powder
Odor	practically odorless (comparable to standard)

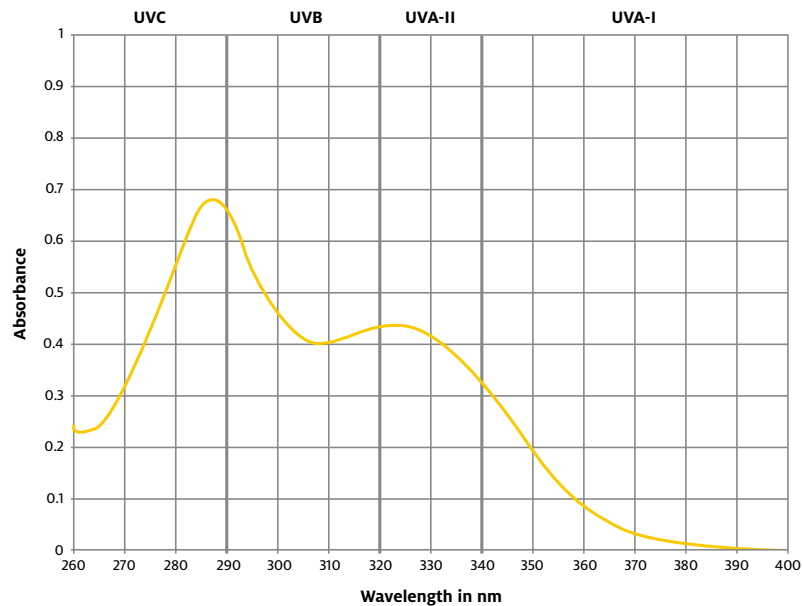
ANALYTICAL DATA

Assay (HPLC) %	97.0 – 103.0
Solidification point °C	min 62.0
Melting point °C	min. 62.5
Loss on drying %	max. 2.0
Specific extinction $E_{1cm}^{1\%}$, in methanol λ max. 321 - 327 nm	min. 400
Shelf life and storage conditions	36 months in the original, unopened container, dry, at 5 to 40°C

SOLUBILITY IN LIQUID UV ABSORBERS AND SOLVENTS / EMOLLIENTS AT 20°C

	approx.
Neo Heliopan® AV	24%
Neo Heliopan® E 1000	26%
Neo Heliopan® 303	32%
Neo Heliopan® OS	17%
Neo Heliopan® HMS	19%
C12-15 Alkyl Benzoate	10%
Caprylic/Capric Triglyceride	12%
Corapan® TQ	15%
SymMollient® PDCC	20%
Diisopropyl Adipate	18%
Mineral Oil	2%
Ethanol (96 vol%)	6%
Isopropanol	10%
Water	immiscible

UV ABSORBANCE E_{1%}^{1cm} IN METHANOL



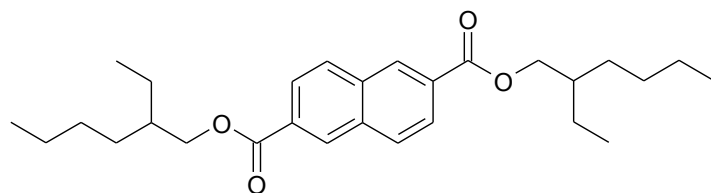
THE BENEFITS

- Neo Heliopan® BB is an effective broad spectrum absorber with max. protection in the short-wave UVB and UVA spectra (UVB at approx. 285 nm, UVA at approx. 325 nm)
- Neo Heliopan® BB is an oil-soluble, fine-crystalline powder and practically odorless. Adequate solubility in the formulation must be ensured in order to avoid recrystallization of the Neo Heliopan® BB. The UV filters Neo Heliopan® AV, E 1000, 303, OS, HMS and certain emollients are excellent solvents
- Excellent co-absorber in combination with specific UVB absorbers (Neo Heliopan® AV, E 1000, OS, HMS, MBC or Hydro)
- In the USA often used in combination with Neo Heliopan® AV, HMS and OS to achieve high SPFs
- Neo Heliopan® BB can be used up to 0.5% as a light stabilizer for cosmetic formulations
- Approved worldwide. Concentration maximum varies according to local legislation
- Please note that formulations containing more than 0.5% Benzophenone-3 in the EU and in ASEAN states need to have the inscription “contains Oxybenzone” on the label
- Neo Heliopan® BB is a safe and effective UVA/UVB absorber. Safety and efficacy studies are available on request
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

Corapan® TQ

CONFERS PHOTOSTABILITY TO BUTYL METHOXYDIBENZOYLMETHANE (BMDM) IN SUN CARE FORMULATIONS

Product No.	182585
CAS No.	127474-91-3
EINECS	127474-91-3
INCI name	Diethylhexyl 2,6-Naphthalate
Empirical Formula	$C_{28}H_{40}O_4$

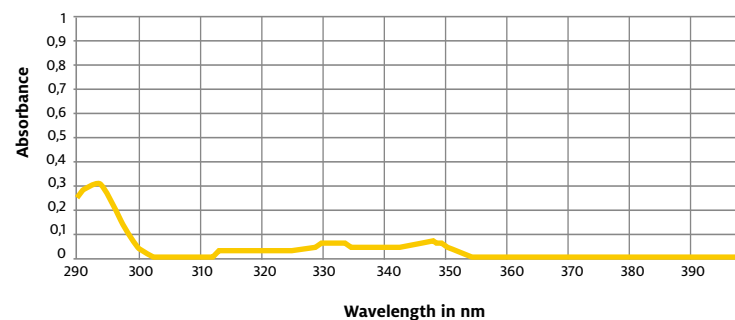


GENERAL DESCRIPTION

- Clear, practically odorless, very pale yellow liquid
- Specific gravity @ 25°C of approx. 1.0202
- Acid value of < 1.0
- Purity (GLC) of 97% minimum
- Miscible with many cosmetic oils (including cyclomethicone (DC 345) >20%), immiscible in glycerin and water

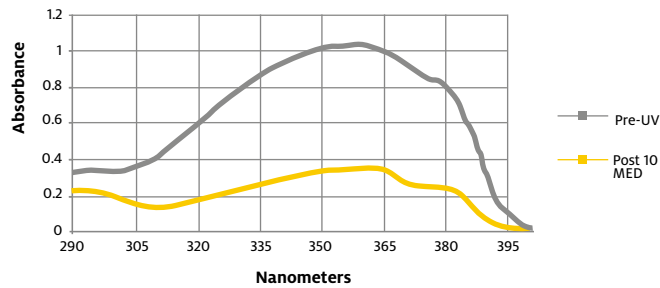
UV ABSORBANCE OF Corapan® TQ @ 10 mg/L IN CYCLOHEXANE

Corapan® TQ shows no relevant absorption between 290 nm and 400 nm.

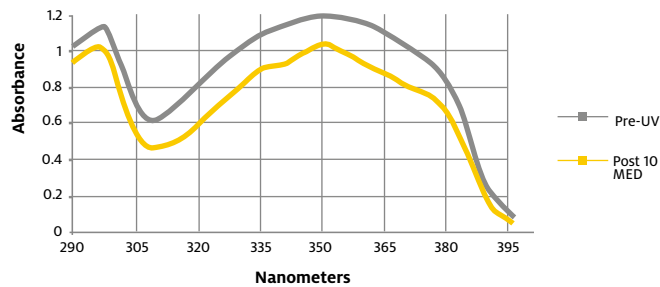


PHOTOSTABILITY OF 1% BMDM IN O/W FORMULATION

Corapan® TQ enhances the photostability of Butyl Methoxydibenzoylmethane



Without Corapan® TQ
68 % loss @ 360 nm



With 2% Corapan® TQ
16 % loss @ 357 nm

THE BENEFITS

- Corapan® TQ is a safe and effective cosmetic oil that confers photostability to sun care formulations
- By using 2 to 5% in a formulation that contains the UVA filter Butyl Methoxydibenzoylmethane it has been demonstrated there is a dramatic improvement in performance of the system
- Corapan® TQ is an excellent solvent for solid UV filters
- Suitable Vegan according to Symrise policy
- Halal & Kosher status available on request

SOLUBILITY OF SOLID UV ABSORBERS IN Corapan® TQ

Neo Heliopan® 357	18%
Neo Heliopan® BMT	35%
Neo Heliopan® BB	17%
Neo Heliopan® MBC	20%
Ethylhexyl Triazone	>10%
Diethylhexyl Butamido Triazone	15%

SymEffect™ Sun

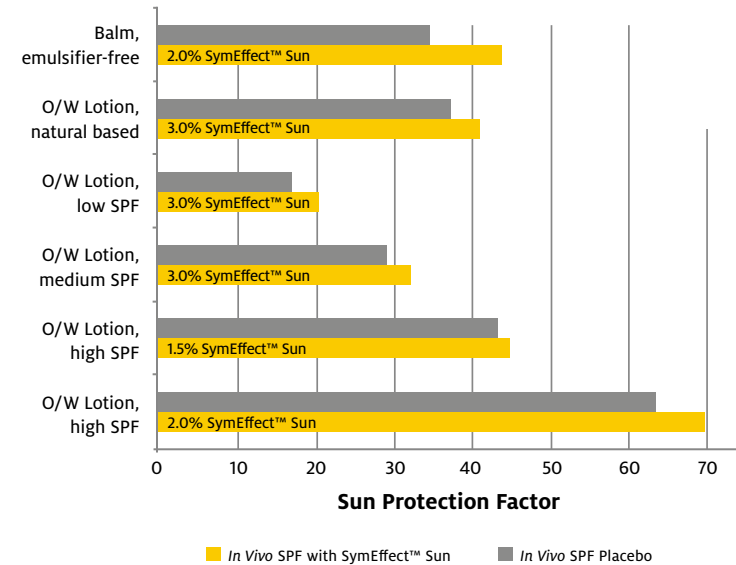
360° APPROACH TO ACHIEVE OPTIMIZED SUNSCREEN FORMULATIONS

Product No.	105604
Description	Multi-functional synergistic blend made from 100% natural derived ingredients
INCI	Cera Alba (Bees Wax), Sodium Stearoyl Lactylate
Appearance	off-white / light yellow pellets
Recommended use level	1.5 – 5 %

- Easy to formulate via incorporation in oil phase
- Can be used in hot/hot and hot/cold processes
- Patent pending
- China compliant
- COSMOS compliant
- Natural Origin Content: 100% (ISO 16128-2)
- Halal & Kosher status available on request

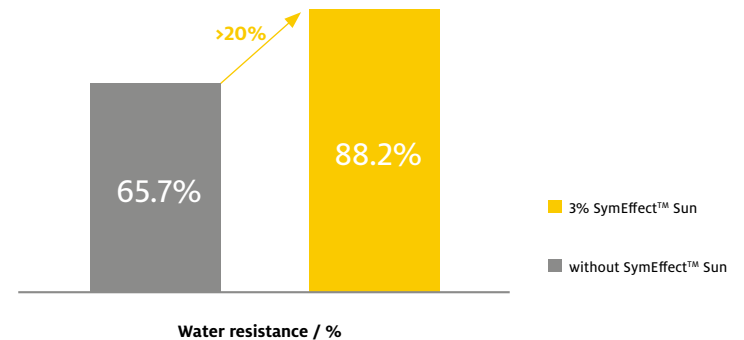
IN VIVO PROVEN PRODUCT PERFORMANCE OF SymEffect™ Sun

EFFICIENCY OF UV FILTERS

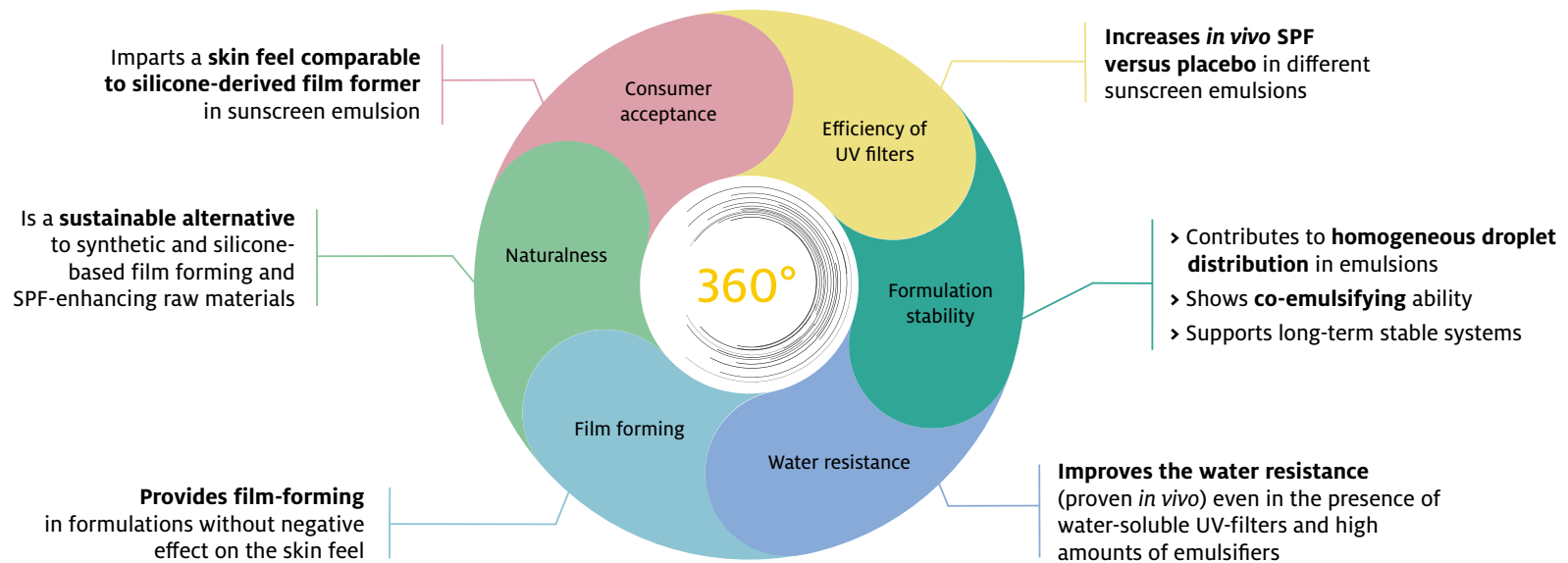


WATER RESISTANCE

O/W emulsion SPF 30 containing 2% water-soluble UV filters



SymEffect™ Sun IS UNIQUE IN ITS NATURAL AND HOLISTIC APPROACH TO THE MULTIPLE CHALLENGES OF MODERN SUNSCREEN EMULSIONS



SymEffect™ Sun IS THE NEXT STEP TOWARDS A HIGH DEGREE OF SUSTAINABILITY AND NATURALNESS IN SUN PROTECTION COSMETICS

- **Sustainable alternative** to synthetic and silicone-based film forming and SPF-enhancing raw materials
- Increases water resistance (proven *in vivo*) in an **environmental-friendly** way
- Stabilizes O/W emulsions and therefore **reduces the overall content of emulsifiers**
- **Compatible with various natural thickeners** helping to avoid thickeners based on micro-plastics
- Provides **contemporary skin feel** with almost no tack and low oiliness in sunscreen emulsions **without using silicone derivatives**
- **Enhances the Natural Origin Content** of sunscreen emulsions by eliminating silicone/synthetic raw materials for different purposes with one natural material

*always
inspiring more ...*



www.symrise.com

Visit www.symselect.com to request samples and discover new ingredients.

DISCLAIMER

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use of our products are beyond our control. Symrise makes no warranties, either expressed or implied, as to the accuracy or appropriateness of this data. Symrise expressly disclaims any implied warranty of fitness for a particular use. We recommend that prospective users determine for themselves the suitability of Symrise materials and suggestions for any use prior to their adoption. We also recommend that prospective users, as required, obtain approval from appropriate regulatory authorities. Suggestions for uses of our products or the inclusion of descriptive material from patents and the citation of specific patents in this publication should not be understood as recommending the use of our products in violation of any patent or as a permission or license to use any patent of Symrise.