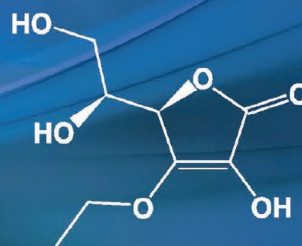


INTERNATIONAL MANUFACTURED PATENT

# COS-VCE<sup>®</sup> (ENB-VCE<sup>®</sup>)

3-O-ETHYL ASCORBIC ACID



COS-VCE (ENB-VCE)

Molecular formula : C<sub>8</sub>H<sub>12</sub>O<sub>6</sub>

Molecular weight : 204.18

CAS No. : 86404-04-8

Vitamin C content : 86.3%



## SPECIFICATION

ITEM	SPECIFICATION
Appearance	White crystals or Crystalline powder
Assay(by HPLC)	95.0 ~ 99.9%
pH(3%)	3.0 ~ 4.5
Melting point	111 ~ 116 °C
Heavy metal	20 ppm max.
Arsenic	2 ppm max.
Loss on drying	0.01 ~ 2.0%

## DESCRIPTION

COS-VCE is white crystal or crystalline powder, odorless or with unique odor characteristic to the material, consisting of a stabilized ethyl L-ascorbic acid. Etherification of ascorbic acid at position 3 protects vitamin C from destruction by oxidation, the L-ascorbic acid molar activity of the ethyl of vitamin C is equivalent to L-ascorbic acid.



**CosMol Co., Ltd.**

Professional company for Vitamin derivatives & Bio Material

1407-2, Hagil-ri, Hyangnam-eup, Hwaseong-si, Gyeonggi-do, Korea

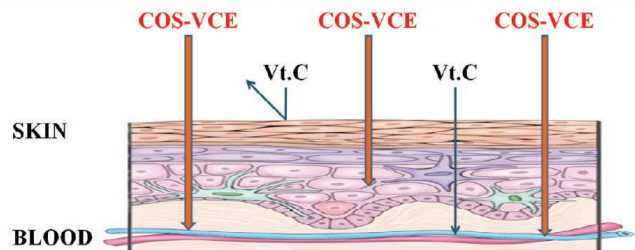
Phone : +82-70-4035-8254 Fax : +82-31-354-5254 www.cosmol.co.kr

## SAFETY and STABILITY

COS-VCE is a product that has solved the structural instability of Vitamin C and is metabolized by the human body in the same manner as Vitamin C. It is safe and stable on weak acid skin surface. COS-VCE proved to be stable in a buffer solution and aqueous solution at 40°C for 90 days. This result was made possible as the en-diol structure of ascorbic acid became stable and was protected from the metal ions by the action of the ethoxy of the 3rd position.

## WHITENING EFFECT

COS-VCE have multiple inhibition effect in melanogenesis. The first is inhibition of tyrosinase activity, the second is inhibition of polymerization of melanin monomers in the melanogenesis pathway. It has proved to be effective for bleaching and brightening as a mixed form into cosmetics by 2%.

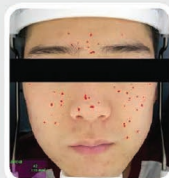


**0.5% EAE**

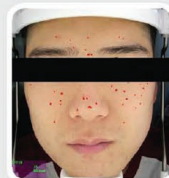
Improvement effect of pigmented skin used



**1.0% EAE**



**2.0% EAE**  
(54% reduced)



## UV-introduced melanization

TESTED SUBSTANCE	CONCENTRATION(%)	Rate of inhibition of DHICA(%)
Ascorbic acid (vitamin-C)	0.1	70
VC – PMG	0.1	20
AA - 2G	0.1	20
<b>COS-VCE</b>	<b>0.1</b>	<b>80</b>

REFERENCE : Journal of Japanese Cosmetic Science Society v.27 no.4 2003 pp.257-268

## EFFICACY

COS-VCE is an antioxidant with a powerful reduction capability. It reduces fatty acid peroxide generated within the cosmetics and prevents deterioration. It also works as an anti-inflammatory when applied to the surface of skin. It suppresses the development of serotonin edema, as shown in results that a dramatic improvement was observed.

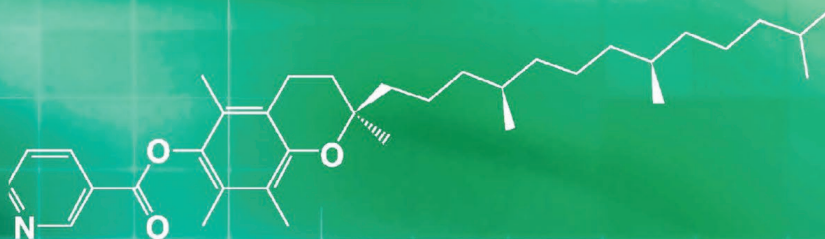


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# COS-EB3

## TOCOPHERYL NICOTINATE



COS-EB3

Molecular Formula :  $C_{35}H_{53}NO_3$

Molecular Weight: 535.80

CAS No. : 43119-47-7, 51898-34-1, 16676-75-8

### DESCRIPTION

This product is white or straw yellow crystal powder. It can dissolve in ethanol and can't dissolve in water. This product can directly act on blood vessel wall and restrain the cholesterol formation. It also can enhance blood circulation and slow down the skin aging process. This product can be added into most of cosmetics, hair, body, hand and moisturizing preparations.

### FUNCTION

Promote metabolism and microcirculation.  
Reduce aging pigment content, keep skin elasticity and brightening  
anti-oxidant, skin conditioning, skin protecting

### SPECIFICATION

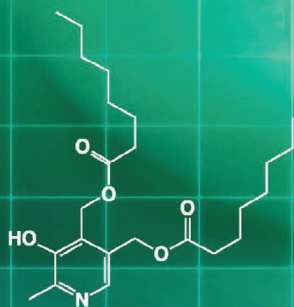
ITEM	SPECIFICATION
Appearance	Yellowish Powder
Odor	Characteristic
Melting Point	40 °C
HPLC	min. 95%
Free tocopherol	max. 2.0%
Heavy metal(ppm)	max. 20
As(ppm)	max. 2



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## COS-PDC

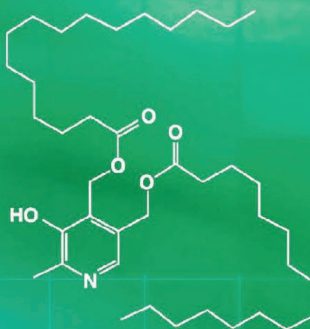
### PYRIDOXINE DICAPRYLATE



Molecular Formula:  $C_{24}H_{39}NO_5$   
Molecular Weight : 421.57  
CAS No. : 106483-04-9

## COS-PDP

### PYRIDOXINE DIPALMITATE



Molecular Formula :  $C_{40}H_{71}NO_5$   
Molecular Weight : 646.01  
CAS No. : 39379-66-3, 635-38-1

### DESCRIPTION

Non-ionic surfactants-esters. Oil soluble vitamin B<sub>6</sub> derivative with improved percutaneous absorption and stability; effective for acne, rough skin, dandruff and sunburn.

Use as dispersing agent, emulsifying agent, emulsion stabilizer.

Conditioning agent, antistatic agent in personal care products. Good conservation effect to skin.

### SPECIFICATION

ITEM	SPECIFICATION
Appearance	White Powder
Purity	97% min.
Loss on Drying	1% max.
Heavy metal(Pb)	20ppm max.
Arsenic(As)	2ppm max.

### APPLICATION

It can be use skin conditioning and hair conditioning products, moisturizing preparations, cleansing products (cold creams, cleansing lotions, liquids and pads), eye lotions, paste masks (mud packs) in personal care.



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# COSMOL GEL series

Glycerine and Glyceryl Acrylate/  
Acrylic Acid Copolymer and Silicones

## DESCRIPTION

It's unique structure of methacrylate, as a superior moisturizer with the function of preventing water release. It's improving the feeling of soft and glossy in the skins. It also keeps your skin moisturized well. It is colorless and transparent. It shows excellent stable structure and easy to be dissolved in water without a certain emulsifying system to dissolve. The most advantage of this product is that it's widely used for humectant and thickener in the personal care markets.

## SPECIFICATION

PRODUCT NAME		PRESERVATIVES	SPECIFICATION	SPINDLE	
COSMOL GEL	CG	D	Paraben	200,000-400,000cps (RI : 1.415-1.435)	#6, 2.5rpm
		F	Phenoxyethanol		
		H	Hexanediol		
	MS	D	Paraben	250,000-350,000cps (RI : 1.380-1.400)	#6, 2.5rpm
		F	Phenoxyethanol		
		H	Hexanediol		
	DV	D	Paraben	900,000-1,200,000cps (RI : 1.380-1.400)	#7, 1rpm
		F	Phenoxyethanol		
		H	Hexanediol		
	D2	D	Paraben	900,000-1,200,000cps (RI : 1.390-1.410)	#7, 1rpm
		F	Phenoxyethanol		
		H	Hexanediol		
	OIL	D	Paraben	500-1,500cps (RI : 1.380-1.410)	#3, 50rpm
		F	Phenoxyethanol		
		H	Hexanediol		
	SIL	D	Paraben	180,000-300,000cps (RI : 1.390-1.410)	#6, 2.5rpm
		F	Phenoxyethanol		
		H	Hexanediol		

## APPLICATIONS

General dosage is 5-50% in cream, lotion, sun screen, skin toner, makeup and other personal care products.



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# Cos-Salicornia Mineral water

Fermented *Salicornia herbacea*

**Flavonoid, Selenium, Germanium,  
Amino acid, Betaine, Saponin  
Polysaccharide, Fiber**

The Salicornia contain a large amount of potassium, magnesium, calcium and rich in essential fatty acids, especially linoleic acid and amino acid abundance.



Dietary fiber-rich, anti-diabetic, anti-cholesterol, anti-hypertensive efficacy as high as bioactive compounds with antioxidant activity and antibacterial ability is that holds the organic material.

Natural fermented Salicornia for five years is rich in minerals, contains many active ingredients in functional food and cosmetic ingredients can be applied.



**EM**  
(Effective Microorganism)



**Fermentation  
for 5 years**



**CosMol Co., Ltd.**

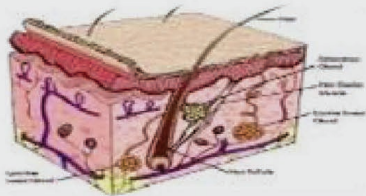
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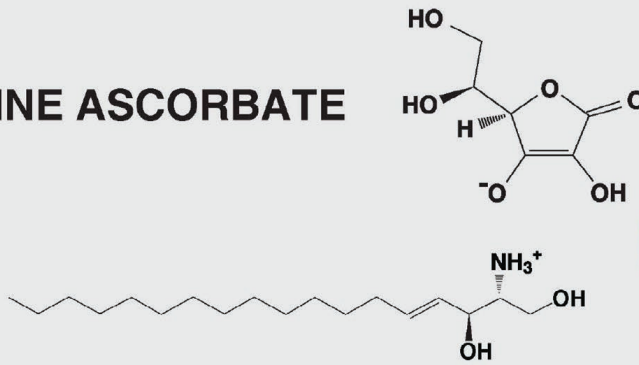
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# SP-VC

## PHYTOSPHINGOSINE ASCORBATE



Sphingosine  
Skin-composing element

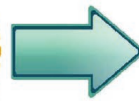


Vitamin C (Ascorbic acid)  
Skin-vitalizing element

SP-VC

Molecular Formula :  $C_{24}H_{47}O_9N$   
Molecular Weight : 493.6  
CTFA file No. : 12335

Analysis of  
acne improvement  
effect of SP-VC



Multiple benefits  
of vitamin C &  
phytosphingosine

Owing to the fact that SP-VC is the composite originated from natural phytosphingosine and Vitamin C.

## SP-VC (Phytosphingosine ascorbate)

### Efficiency

- Multi-effects of phytosphingosine and vitamin C
- Anti-Oxidation effects, anti-Inflammation effects
- Anti-Bacterial effects, anti-acne effects
- Skin barrier recovery effects and wound healing effects, etc.

#### Anti-Oxidation effects

- inhibition of free fatty acid due to acidifying sebum
- control the inflow speed of antibiotic into inflammation part → prevention of skin discoloration

#### Anti-inflammation effect

- inhibition of inflammation in diseased part
- prevention of excessive cornification of skin

#### Anti-bacterium effect

- high anti bacterium effect on *P. acne* / *Staphylococcus*



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## APPLIED CONTENTS

ITEM	MIC	IC 50
<b>SP-VC</b> Efficacy concentration	0.004% (25~40ppm)	0.0006% (6ppm)
<b>SP-VC</b> Applicable concentration	0.04%	0.006%
Recommending concentration	(0.05 ~ 0.1% SP-VC)	(0.0075% SP-VC)

## APPLICATION

Applicable for various skin care products

Primary materials for skin ailment products such as acne and atopic dermatitis

Supplementary materials for anti-aging & whitening, etc.

## SOLUBILITY

in water : <0.02% (40~45°C heating)

in other ingredients: 1,3-BG, PG, Fatty alcohols, Ethanol

Stability of drying powder : stable at room temperature at least 2 years

## STORAGE CONDITION

Cold storage : about 4 ~ 15 degrees

## SPECIFICATION

ITEM	SPECIFICATION
Appearance	White to off white powder
Odor	Practically odorless
Melting Point by DSC	154 ~ 155 °C
HPLC	min. 99%
Loss on Drying	max. 1.0%
Heavy metal(ppm)	max. 20
As(ppm)	max. 2



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