EXTRACT OF SALIX ALBA

AN EFFICACIOUS SAFE REMEDY FOR PROBLEM SKIN

Novel functional ingredients for multi-purpose formulations

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CAMPO® Multi-Purpose Cosmetic Base Chemicals & Active Ingredients

CAMPO® Novel Functional Active Cosmetic Ingredient & Raw Materials

INDEX

An Extract of Salix alba
An Efficacious Safe Remedy for Problem Skin

Introduction

Current research has been shown that in their daily fight for survival, plants employ a host of defense mechanisms. An important facet of their immune response involves endogenous signal molecules, many of which have been identified. Salicylic acid has been identified as one of these molecules. It functions directly in the plant defense response to pathogens.

Salix alba, or white Willow, is tree found throughout North America, Asia and Europe. The bark of the tree is the main source of; as well as the flowers and leaves are also sources of Salicylic acid -like ingredients. When added to cosmetic formulation, the extract can increase cell renewal and boost the anti-microbial capabilities of the formulation. Even though the extract is a source of Salicylic acid -like ingredients and is able to contribute effects similar to those seen from Salicylic acid, it has none of the drawbacks associated with synthetic salicylic acid -mainly irritation. The extract is a safe way to get the benefits of a β-hydroxy acid (BHA) without the risk of irritation.

Next generation of skin care for aging skin?

At the **recent American Academy of Dermatology meeting held in San Francisco** (March 1997), (DCI, April 1997) prominent dermatologists confirmed their belief that the beta hydroxy, salicylic acid is the next generation of products for improving the appearance of aging skin. After reviewing comprehensive data, the dermatologists agreed the beta hydroxy, salicylic acid is a superior exfoliant that improves the appearance of aging, sun-damaged skin without all the irritation associated with the popular alpha hydroxy, glycolic acid.

Dr. Albert Kliginan, professor emeritus of dermatology at the University of Pennsylvania School of Medicine, concluded: "Salicylic acid is effective in reducing the appearance of fine lines and wrinkles, and improving overall facial texture because it exfoliates both the skin surface and within pores, without all the iritation commonly associated with the alpha hydroxy, glycolic acid." It has been found that beta hydroxy, salicylic acid is effective with as little as one-fifth the concentration typically found in products containing glycolic acid, the most commonly used alpha hydroxy acid. In a single study comparing a 1.5 percent salicylic acid product and an 8+ percent glycolic acid product, the salicylic acid product was shown to be a more effective exfoliant.
Its superior exfoliation action is thought to he attributed to its lipid- or oil-solubility.
It concentrates its exfoliation action in the lipid-rich outer layers of the skin, where the skin's natural rate of exfoliation reduces with aging, causing a buildup of dry, dull skin flakes.

According to Dr. Kligman, betas also exfoliate with in the pores, a benefit not seen with the glycolic acid product tested. Glycolic acid is water-soluble, which may lead to its localizing more deeply in the skin, possibly accounting for its observed higher level of irritation. "Salicylic acid was preferred by the study participants," commented Kligman. "If women think a product is too strong or too irritating for their skin, they typically won't use it as often as they should or they won't use enough of it, clearly impacting the product's effectiveness."

Materials and Methods

The cell renewal capabilities of Campo Willow Extract and the Campo Liposomal Willow Extract were tested versus the cell renewal capabilities of 1 % salicylic acid. The concentration of the Extracts were 10%, which corresponds to 1% concentration of salicylic acid. A dansyl chloride protocol was followed using twenty –four female panelists. Results are shown in Figure I.

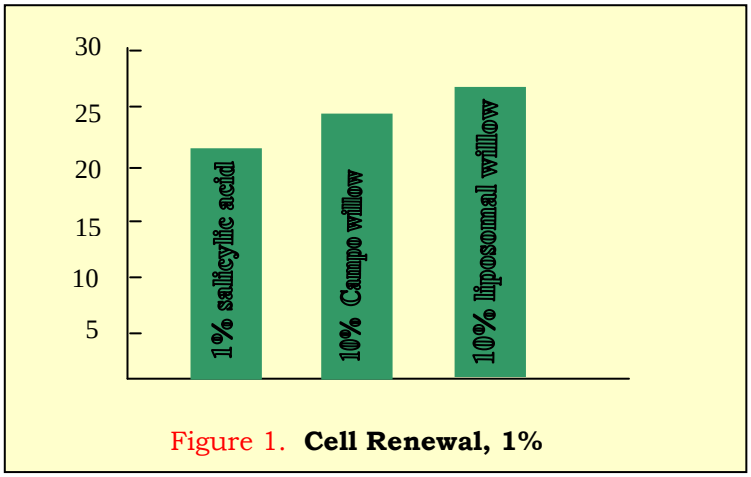

Figure 1. **Cell Renewal, 1%**

The antimicrobial activity of the Campo Willow Extract and the Campo Liposomal Willow Extract tested and compared to the salicylic acid. The Extracts were tested at 100% concentration and the salicylic acid was at 10 % concentration. Zone of Inhibition protocol was followed where the organisms was streaked onto agar allowed to grow to influence. A sterile blank paper disk was placed on the agar and the test material was dispensed onto the disk. The agar plates were incubated and after the appropriate time, the zone of clearance around the paper disks was measured in millimetres. Organisms tested were *Staphylococcus aureus* and *propionibacterum* acnes, two of the skin flora implicated in the formation of acne. Results versus Staphylococcus aureus are shown in Figure II. Results versus *Propionibacterium acnes* are shown in Figure III

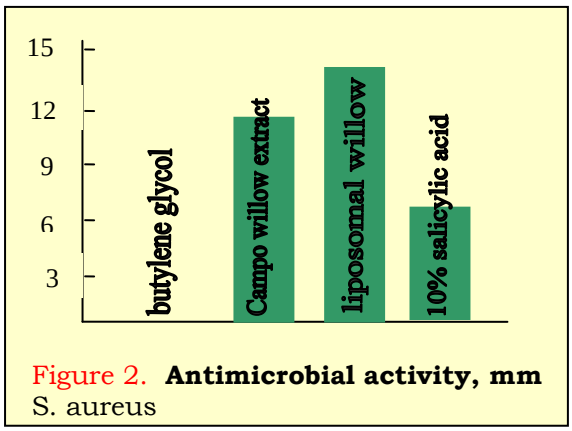

Figure 2. **Antimicrobial activity, mm**
S. aureus

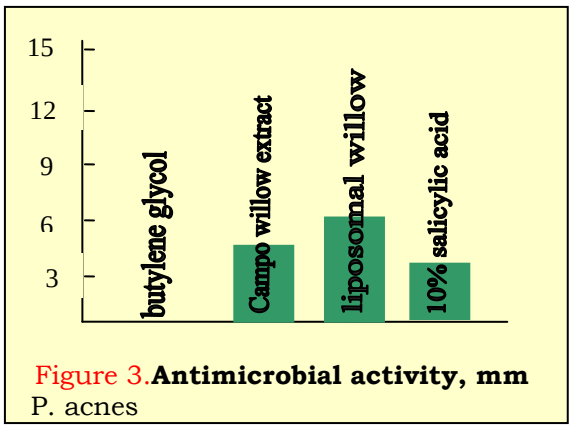

Figure 3.**Antimicrobial activity, mm**
P. acnes

The extracts were also safety tested using a variety of in vivo and vitro protocols . The CAMVA was used to determine irritancy. This in vitro assay determines the iritancy of a test compound based on its ability to induce hemorrhage on the chorioallantoic membrane of a chicken egg. Two other in vitro tests were run on Campo Willow Extract- EpiDerm and Epi-Ocular. EpiDerm is a three - dimensional system composed of human epithelial cells to which the test compound is applied. After incubation, the number of viable cells is measured using the MTT conversion assay.

An ET_{50} is determined, which gives an idea of potential skin toxicity. EpiOcular is a three-dimensional system composed of stratified human keratinocytes to which the test material

is applied. After incubation, the number of viable cells is measured using the MTTconversion assay. An ET_{50} is determined, which gives idea of possible ocular irritation. Results are shown in Figure IV.

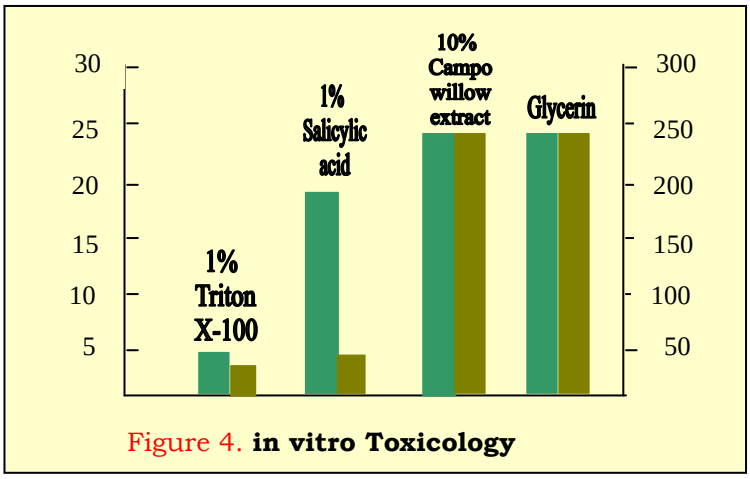

Figure 4. **in vitro Toxicology**

A fifty -person RIPT was run on Campo Liposomal Willow Extract to assess its ability to induce skin irritation and sensitization. The method is modified from the 200 person methodology cited in the reference Appraisal of the Safety of Chemicals in Food, Drugs, and Cosmetics. The material was tested at 100% concentration and underwent nine inductive patchings.

Results

Results from the cell renewal testing are found in Figure I. Campo Willow Liposomal Extract was found to increase stratum corneum turnover more so than salicylic acid - 24 % was opposed to 22 %. The liposomal form of Campo Willow Extract gave a 26.1% increase. Figure II gives results on the antimicrobial activity against *Staphylococcus aureus*. Campo Willow Extract and Campo Liposomal Willow Extract performed the best, giving zones of clearance of 11mm and 13mm respectively, as compared to a 6mm zone of clearance of salicylic acid. Against *Pripionibacterium acnes* (shown in Figure III) , Campo Willow Extract gives a zone of 4mm, Campo Liposomal Willow Extract is 6mm and salicylic acid is 3mm.

The CAMVA gave an RC_{50} value of 28%. This value is indicative of a material that is not a primary irritant. The results for EpiDerm and EpiOcular are detailed in Figure IV. For Campo Willow Extract, the ET_{50} for the EpiDerm was >24 hours and for the EpiOcular it was >240 minutes. In comparison, salicylic acid yielded ET_{50} values of 19.3 hours for EpiDerm and 14.8 minutes for EpiOcular . Campo Willow Extract gave scores similar to the scores of glycerine, whereas salicylic acid scored more closely to Triton X-100, the positive control for the system.

Discussion

The efficacy results given above indicate a material that has cell renewal and antimicrobial activities that are better than salicylic acid. Campo Liposomal Willow Extract and Campo Willow Extract are more better able to increase turnover of the stratum corneum and also have more in vitro antimicrobial activity against *Staphylococcus aureus annd Propionibacterium acnes*. Coupled with this increased efficacy, Campo Wilow Extract and the Campo Lposomal Extract have less irritation potential than salicylic acid. The safety testings done on Campo Willow extract and Campo Liposomal Extract clearly shows this. The EpiDerm and The EpiOcular Assays made actual comparisons between Campo Willow Extract, Campo Liposomal Willow Extract and salicylic acid, and both of the Campo natural extracts proved to be much less irritating.

Conclusion

Campo Willow Extract and Campo Liposomal Willow Extract are safe, efficacious natural extracts for use in a variety of cosmetic formulations.
Many international brand name cosmetics containing BHA can be created by these 2 BHA rich Campo ingredients extracted from Willow Tree such as the Multi-Fruition for which the formulary guide is given below.; and other OIL OF OLAY Age Defying Series; Clinique Turnaround Cream, and Almay Time-Off Revitalizers.
BHA are FDA-approved to remedy Acne and in Acne Prevention Cosmetics up to 2% of BHA levels.

SKIN REVEALING LOTION FOR PROBLEM SKIN

This light textured lotion resembles **Estee Lauder's Fruition . Campo Liposomal Willow Extract ®** works to speed up all cell renewal resulting in a smoother complexion. The MMF 2 ™ binds moisture, reducing the appearance of fine lines. **Hydrin 2 ®; and MMF 2 ®** acts to normalize sebum levels on the skin**. CAMPO WILLOW BARK EXTRACT** is a natural a source of salicins., beta-hydroxy acids, which have a keratolytic effect. **The CAMPO SHAN CHA YAO (CHINESE HAWTHRONE BERRIES) EXTRACT** is an excellent topical antimicrobial which has also anti-oxidant capabilities.

Ingredients	**INCI Nomenclature**	**%**
Deminerlaized Water	Water	67.00
1,3 Butylene Glycol	Butylene Glycol	4.00
Germall 115 (4)	Imidazolidinyl Urea	0.20
Methyl Paraben (7)	Methyl Paraben	0.20
Sepigel 305 (3)	Polyacrylamide & C13-14 Isoparaffin & Laureth-7	6.00
DC Fluid 345 (5)	Cyclomethicone	4.00
Dc Fluid 200, 100 cst (5)	Dimethicone	3.00
Mearlmaid AA (6)	Water & Guanine & Isopropyl Alcohol & Methylcellulose	0.50
Campo Liposomal Willow Extract® Standardized-20%Beta-hydroxy,Salicyclic acid(1)	Willow Bark Extract,(and) Willow Flowers Extract (and), Willow Leaves Extract, (and) Water	5.00
MMF 2 ™(1) (Marine Moisturizing Faxtors 2)	Algae Extract and Water	2.00
Hydrin 2 (1)	Poly-peptides (and) Amino acids	1.00
Campo willow bark (1) Standardized-5%Beta-hydroxy,salicylic acid	Willow bark Extract	5.00
Campo Shan Cha Yao (chinese hawthorne berries) 1	Water & Crataegus Extract	2.00
	Fragrance	0.10

PROCEDURE :

1. Disperse 1/3 of water into the sepigel . Mix well with rapid agitation
2. Add DC 345 Fluid and DC 200 into the batch . Mix well.
3. Premix the preservatives, remainder of batch water , and butylene glycol and add to batch
4. Add remaining ingredients in order, mixing well between additions.

Comments PH = 4.5-5.0

Suppliers

1. Campo Research
2. Any Generic Suppliers
3. Seppic, Inc
4. Sutton Laboratories
5. Dow Corning
6. Mearl Corporation
7. Nipa Laboratories.

White Willow (Salix alba)

Deciduous, fast-growing tree found near rivers and in wetlands, which can measure up to 15 m in height. It is distinctive due to its drawn-out look, with long, thin branches and striate trunk. Its leaves are very narrow and lanceolate in form (up to 8 cm in length) with dentate margins and felted undersides which give them a whitish colour. The tree flowers between February and May and the resulting seeds have a small tuft which helps them disperse with the wind.
The white willow is distributed throughout most of this territory, from sea level up to the subalpine mountain zones, although it is most abundant on low lands. The main requirement for its growth is a nearby watercourse or a sufficiently high ground water level.
The white willow was introduced into the United States form Europe and can be found next to rivers and streams throughout the country. The bark is the part of the willow used, and is easily removed in the spring when the sap begins to flow.
Willows have been used for centuries for pain relief and reduction of fever. The leaves can be chewed, and contain salicylic acid. This compound has been synthesized into acetylsalicylic acid, otherwise known as aspirin.
Natural salicylic acid is nearly as potent as aspirin, however, the compound salicin from willow does not cause gastric or intestinal upset or bleeding as aspirin can, This is because willow does not block prostaglandins in the stomach or intestines.

CAMPO RESEARCH Pte Ltd
TECHNICAL SPECIFICATION

Product Name (Campo Research) Other Trade Names (Campo Research)	CAMPO LIPOSOMAL WILLOW EXTRACT LIPOSOMAL WILLOW EXTRACT
Existing CTFA / INCI Name	Salix Alba (Willow) Bark Extract (and) Salix Alba (Willow) Flower Extract (and) Salix Alba (Willow) Leaf Extract (and) Aqua (Water)
Chinese Translation	白柳（SALIX ALBA）树皮提取物 白柳（SALIX ALBA）花提取物 白柳（SALIX ALBA）叶提取物 水 (Aqua / Water)
CAMPO PRODUCT # HS Code	97.5747-8 1302.19.0000
CTFA Monograph ID	9042 – Salix Alba (Willow) Bark Extract 9413 – Salix Alba (Willow) Flower Extract 9043 – Salix Alba (Willow) Leaf Extract 9423 – Aqua (Water)
CAS# CAS# EU	84082-82-6 – Salix Alba (Willow) Bark Extract 84082-82-6 (EU) – Salix Alba (Willow) Bark Extract N/A – Salix Alba (Willow) Flower Extract 84082-82-6 (EU) – Salix Alba (Willow) Flower Extract 84082-82-6 – Salix Alba (Willow) Leaf Extract 84082-82-6 (EU) – Salix Alba (Willow) Leaf Extract 7732-18-5 – Aqua (Water) 7732-18-5 (EU) – Aqua (Water)
EINECS Numbers and Name EINECS# EU	282-029-0(1) – Salix Alba (Willow) Bark Extract 282-029-0 (EU) – Salix Alba (Willow) Bark Extract N/A – Salix Alba (Willow) Flower Extract 282-029-0 (EU) – Salix Alba (Willow) Flower Extract 282-029-0 (1) – Salix Alba (Willow) Leaf Extract 282-029-0 (EU) – Salix Alba (Willow) Leaf Extract 231-791-2(1) – Aqua (Water) 231-791-2 (EU) – Aqua (Water)
EINECS Number and Name EINECS# EU European Commission–Health & Consumer Cosmetics–Cosing	Salix Alba (Willow) Bark Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80071 Salix Alba (Willow) Bark Extract – 282-029-0 (EU) Salix Alba (Willow) Flower Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80072 Salix Alba (Willow) Flower Extract – 282-029-0 (EU) Salix Alba (Willow) Leaf Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80073 Salix Alba (Willow) Leaf Extract – 282-029-0 (EU) Aqua (Water) http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=31959 Aqua – 231-791-2 (EU)

BATCH / LOT	See COA Batch Lot
SPECIES	Salix alba Syn: Salix Alba (Willlow) Bark, Flower, Leaves Extract Salix Alba Bark, Flower, Leaves Extract
PARTS USED	Leaves, Flowers, Bark
RAW MATERIAL – ORIGIN	North America
CONCENTRATION	-
COMMENTS	Carbon Dioxide Extract of Mugilaneous Fractions of Beta Hydroxy Acids (BHA) of Willow Tree Parts. A Quality Management System, compliant to the International Standard ISO 9001,was used to manufacture and test this material *Please take note that all specifications are liable to changes without prior notice.

Specification Parameter Analysis	**Specification Range**	**Results**	**Methods**
Physical Form	Liquid	Conforms	Visual
Color	Clear, Colorless	Conforms	Visual
Odor	Slight Characteristic	Conforms	Olfactory
Specific Gravity (20°C)	1.020 – 1.080	See COA	USP XXIX/Paar,DMA35
Refractive Index (20°C)	1.340 – 1.400	See COA	USP XXIX/DGF IV C (52)
pH (20°C) (100% Concentrate)	2.00 – 4.50	See COA	USP XXIX/DGF H III (92)
Solvent(S)	-	-	-
Carrier Menstrual (Vehicle) Standardization (%) Beta hydroxy; salicylic acid Water	 20% Min 45 – 65%	 - -	 Campo Method
Water Solubility	Soluble	Conforms	-
Dry Residue (160°C / 2hrs)	> 3%	See COA	Mettler 16J
Preservation	None	Corforms	-
Pesticide Content	None	Conforms	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml – Non-Pathogenic	Conforms	USP XXIX/Ph.Eur.2.6.12(97)
Total Yeast/Mold	<100 Cfu/ml	Conforms	USP XXIX/Ph.Eur.2.6.12(97)
Heavy Metals(Total)As,Pb,Hg	<0.005 ppm	Conforms	USP XXIX/Ph.Eur.2.6.12(97)

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CAMPO RESEARCH s.r.o., Brno, Czech Republic
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CAMPO RESEARCH CANADA LTD, TORONTO, CANADA

MATERIAL SAFETY & CONSUMER SAFETY TESTING LABS.
DIV. OF JTC KAMPOYAKI SINGAPORE
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EMAIL: msds911@campo-research.com

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"(SAFETY DATA SHEET – compliant to GHS)" CONFIRMS TO EC DIRECTIVE 91/155/EEC, EC REGULATION NO#1272/2008, AMENDED EC REGULATION NO#790/2009 and Complies to The EU Cosmetic Products Regulation (Regulation (EC) No 1223/2009) effective on July 2013., and to EU Commission Regulation No.358/2014/9 of 9th April 2014 amending Annexes II and V, to EU Regulation No No.1223/2009 of The European Parliament and of The Council on Cosmetic products, (Effective Date 31st October 2014) AND to US DEPT.OF LABOR-Occupational Safety & Health Admin directives and compliant to Globally Harmonized System of Classification and Labeling of Chemicals (hereinafter referred to as "the GHS")., and Complies and Confirms to the Requirements of State of California Proposition 65.

A Quality Management System, compliant to the International Standard ISO 9001, was used to manufacture and test this material

http://www.osha.gov/dsg/hazcom/ghs.html

http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

http://www.hc-sc.gc.ca/ahc-asc/intactiv/ghs-sgh/index-eng.php

	DATE OF FIRST ISSUE	May 5th 1996-Reviewer - Dr Balasubramaniam PhD
	DATE OF LATEST REVISION	Jan. 20th 1997- Reviewer- Dr Fergus Jes .G.Velasquez Bsc. Med Tech, MD **Mr Jimmy Kee, 30th June 2003** **Mr Teo SH 5th Jan 2004** **Balasubramaniam M,PhD 21st August 2007** **Mr Joshua Teo, 21st Jan 2011** **Februrary 5th 2013 – Reviewer – Dr Balasubramaniam M PhD** **12th February 2015 - Joshua Teo BSc. Chem, Dr Balasubramaniam M. PhD & Oksana Nemchenko MD** **15th May 2016 - Joshua Teo BSc. Chem, Dr Balasubramaniam M. PhD & Oksana Nemchenko MD**
1	**PRODUCT AND COMPANY IDENTIFICATION**	
	COMMERCIAL NAME:	CAMPO LIPOSOMAL WILLOW EXTRACT
	OTHER TRADE NAME:	LIPOSOMAL WILLOW EXTRACT
	LATIN NAME:	*Salix alba*
	CTFA ADOPTED NAME / INCI NAME:	Salix Alba (Willow) Bark Extract (and) Salix Alba (Willow) Flower Extract (and) Salix Alba (Willow) Leaf Extract (and) Aqua (Water)
	CHINESE TRANSLATION:	白柳（SALIX ALBA）树皮提取物 白柳（SALIX ALBA）花提取物 白柳（SALIX ALBA）叶提取物 水 (Aqua / Water)

	INTERNATIONAL CHEMICAL IDENTIFICATION *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009) and Compliant to the GHS*:	Salix Alba (Willow) Bark Extract Salix Alba (Willow) Flower Extract Salix Alba (Willow) Leaf Extract Aqua (Water)
	EPA (USA) GENERIC NAME:	-
	MANUFACTURER: (cGMP MFG. FACILITIES)	CAMPO RESEARCH Pte Ltd Level 30, 6 Battery Road Singapore 049909
	EMERGENCY TELEPHONE NUMBERS:	(+65) 6383 3631 / (+65) 6322 8503 (Singapore)
2	**HAZARDS IDENTIFICATION**	
	NOT CLASSIFIED AS DANGEROUS ACCORDING TO DIRECTIVE 67/548/EEC OR ITS AMENDMENTS.	DIVISION 1.6; NON-HAZARDOUS NO HAZARD STATEMENT
	HAZARD CLASS and CATEGORY CODE(s)	PICTOGRAM : NONE
	HAZARD STATEMENT CODE(s) *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009)* and compliant to the GHS	No GHS Pictogram (Totally Non-Hazardous) Division 1.6; NO HAZARD STATEMENT
	GHS CLASSIFICATION : This material is Non-hazardous according To UN-GHS Criteria.	PICTOGRAM : NONE No GHS Pictogram (Totally Non-Hazardous) Division 1.6; No Hazard Statement.
	GHS LABEL ELEMENTS:	No GHS Pictogram (Totally Non-Hazardous) Division 1.6; No Hazard Statement.
3	**COMPOSITION / INFORMATION ON INGREDIENTS**	
	100 PERCENT CARBON-DIOXIDE GAS EXTRACTED SALIX ALBA PLANT PARTS IN WATER CARRIER MENSTRUM.	Salix alba (Willow) Flower, Leaf and Bark Extract
	CTFA Monograph ID:	9042 – Salix Alba (Willow) Bark Extract 9413 – Salix Alba (Willow) Flower Extract 9043 – Salix Alba (Willow) Leaf Extract 9423 – Aqua (Water)
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	CAS NO# (CAS Name) *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009)and compliant to the GHS*	84082-82-6 – Salix Alba (Willow) Bark Extract 84082-82-6 – Salix Alba (Willow) Flower Extract 84082-82-6 – Salix Alba (Willow) Leaf Extract

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RISK PHRASES SAFETY PHRASES 25-26	None Not Mandatory
GHS CLASSIFICATION : This material is Non-hazardous according To UN-GHS Criteria.	PICTOGRAM : NONE
GHS LABEL ELEMENTS:	No GHS Pictogram (Totally Non-Hazardous) Division 1.6; No Hazard Statement.
4 FIRST AID MEASURES	
EYE CONTACT:	Wash with water or standard eye wash solution. Seek medical advice, if irritation occur and persist.

	ORAL INGESTATION:	If symptoms persist, consult a doctor.
	SKIN CONTACT:	Wash with water or shower
5	**FIRE FIGHTING MEASURES**	
	COMBUSTIBLE BUT PRESENTS NO SPECIAL FIRE HAZARD.	
	EXTINGUISHING MEDIA:	Treat as oil fire when store in HDPE drums with CO_2, dry foam or dry chemical.
	PROTECTIVE EQUIPMENTS FOR FIGHTERS:	Standard Equipments.
6	**ACCIDENTAL RELEASE MEASURES**	
	ABSORB ONTO AN INERT MATERIAL AND SCRAPE UP. REMOVE RESIDUE BY SCRUBBING WITH HOT WATER OR DETERGENT SOLUTION.	
7	**HANDLING AND STORAGE**	
	STORE IN SEALED CONTAINERS UNDER NORMAL COOL, DRY WAREHOUSING CONDITIONS.	
8	**EXPOSURE AND PERSONAL PROTECTION**	
	IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICE AND HANDLING USING STANDARD EYE PROTECTION.	
9	**PHYSICAL AND CHEMICAL PROPERTIES**	
	PHYSICAL FORM:	Liquid
	COLOUR:	Clear, Colorless
	ODOUR:	Slight characteristic
	BOILING POINT:	-
	MELTING POINT:	-
	VISCOSITY:	-
	FLASH POINT:	N/A
	FLAMMABILITY SOLID/GAS:	N/A
	AUTO FLAMMABILITY:	N/A
	SPECIFIC REFRACTIVE:	1.340 – 1.400
	EXPLOSIVE PROPERTIES:	N/A
	pH: (100% Concentrate)	2.00 – 4.50
	OXIDIZING PROPERTIES:	N/A
	VAPOUR PRESSURE:	N/A
	DENSITY:	1.020 – 1.080
	WATER SOLUBILITY:	Total dissolution
	OTHER SOLUBILITY:	In most cosmetic solvents
	BULK DENSITY:	-
	PARTITION COEFFICIENT: (OCTANOL/WATER)	-
	EXPLOSIVE LIMITS:	-
10	**STABILITY AND REACTIVITY**	
	THERMAL DECOMPOSITION:	Stable under normal conditions of use.
11	**TOXICOLOGICAL DATA**	**Animal Tests Last Done 1992, as requirements of the then EC DIRECTIVE 91/155/EEC**
	ORAL:	LD_{50} > 891 MG/KG (Body Wt.) Rat Essentially Non-Toxic and Edible in Small Quantity.
	DERMAL:	Expected To Be Essentially Non Toxic.
	INHALATION:	May cause irritation to the upper repiratory tract.

	SPECIFIC CONCENTRATION LIMITS M-FACTORS *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009)* compliant to the GHS.	891 MG/KG (Body Wt.); CATEGORY 5 Essentially Non-Toxic and Edible in Small Quantity.
	TOXIC EFFECTS:	
	SKIN:	Primarily Irritation Index (PII) = 0.0 (Non-Irritating - Skintex), Not A Primarily Irritant. Non-irritant / Non-sensitizer as per Repeated Patch Insult Test on 50 Human volunteers. Human Repeated Patch Test 48 hours: 50/50 completely non-irritating / non-erythema causing ingredient at 10% concentrate in water on 50 human volunteers
	EYE:	Very Mild/Minimal-not A Transient Conjunctival Irritant at 1% concentrate in water (Eyetex Classification). *Summarized toxicological data as shown here are formation bounded under Non-Disclosure Agreement with various clients as when these Toxicological Data were established or their exclusive uses.*
12	**ECOLOGICAL INFORMATION**	
	BIODEGRATION:	Expected To Be Ultimately Biodegradable.
	FISH TOXICITY:	No Data
	BACTERIAL & VIRAL TOXICITY:	Very harmful to bacterial and viral micro-organism.
	WGK CLASS:	WGK (Self Classification)
13	**DISPOSAL CONDITIONS**	
	DISPOSE OFF ACCORDING TO A RECOGNISED METHOD OF CHEMICAL WASTE DISPOSAL.	
14	**TRANSPORT INFORMATION**	
	UN NUMBER# :	N/A
	UN NAME:	Not Assigned
	IMDG CODE/CLASS:	Not Hazardous
	IMDG CODE PAGE NO.	N/A
	ICAO/IATA AIR CLASS:	Non-Hazardous
	ICAO/IATA AIR CLASS PACKING GROUP:	N/A
	RID/ADR CLASS:	Non-Hazardous
	ADNR CLASS:	Non-Hazardous
	LABELLING: *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009) and compliant to the GHS.*	
	PICTOGRAM SIGNAL WORD CODE(s):	No GHS Pictograms (Totally Non-Hazardous)
	HAZARD STATEMENT CODE(s):	Division 1.6; No Hazard Statement
	SUPPLEMENTARY HAZARD STATEMENT CODE(s):	Similar Division 1.6; No Hazard Statement
15	**REGULATORY INFORMATION**	
	OCCUPATIONAL EXPOSURE LIMITS:	N/A
	U.S. State of California Proposition 65 INGREDIENTS Presence	None (Exempted from CA Prop 65 Register)
	EU Commission Regulation No.358/2014/9 of 9th April 2014 amending Annexes II and V, to EU	"Contains No Parabens and nor contains any Branched Chain Parabens".(EU Regulation

	Regulation No No.1223/2009 of The European Parliament and of The Council on Cosmetic products	No.358/2014/9 of 9th April 2014)
16	**OTHER INFORMATION**	
	USES AS A COSMETIC ADDITIVE	1.0 – 10.0 %
	This format and information is compiled by Kampoyaki Novel Natural Product Chemistry/ Novel Drug Discovery cGMP Labs Kobe, Japan; for Campo Research, Kyoto and Singapore.	*Please take note that all specifications are liable to changes without prior notice.

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CAMPO RESEARCH Pte Ltd
TECHNICAL SPECIFICATION

Product Name (Campo Research) Other Trade Names (Campo Research)	CAMPO WILLOW EXTRACT WILLOW EXTRACT
Existing CTFA / INCI Name	Salix Alba (Willow) Bark Extract (and) Salix Alba (Willow) Flower Extract (and) Salix Alba (Willow) Leaf Extract (and) Aqua (Water)
Chinese Translation	白柳（SALIX ALBA）树皮提取物 白柳（SALIX ALBA）花提取物 白柳（SALIX ALBA）叶提取物 水 (Aqua / Water)
CAMPO PRODUCT # HS Code	97.5747-9 1302.19.0000
CTFA Monograph ID	9042 – Salix Alba (Willow) Bark Extract 9413 – Salix Alba (Willow) Flower Extract 9043 – Salix Alba (Willow) Leaf Extract 9423 – Aqua (Water)
CAS# CAS# EU	84082-82-6 – Salix Alba (Willow) Bark Extract 84082-82-6 (EU) – Salix Alba (Willow) Bark Extract N/A – Salix Alba (Willow) Flower Extract 84082-82-6 (EU) – Salix Alba (Willow) Flower Extract 84082-82-6 – Salix Alba (Willow) Leaf Extract 84082-82-6 (EU) – Salix Alba (Willow) Leaf Extract 7732-18-5 – Aqua (Water) 7732-18-5 (EU) – Aqua (Water)
EINECS Numbers and Name EINECS# EU	282-029-0(1) – Salix Alba (Willow) Bark Extract 282-029-0 (EU) – Salix Alba (Willow) Bark Extract N/A – Salix Alba (Willow) Flower Extract 282-029-0 (EU) – Salix Alba (Willow) Flower Extract 282-029-0 (1) – Salix Alba (Willow) Leaf Extract 282-029-0 (EU) – Salix Alba (Willow) Leaf Extract 231-791-2(1) – Aqua (Water) 231-791-2 (EU) – Aqua (Water)
EINECS Number and Name EINECS# EU European Commission–Health & Consumer Cosmetics–Cosing	Salix Alba (Willow) Bark Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80071 Salix Alba (Willow) Bark Extract – 282-029-0 (EU) Salix Alba (Willow) Flower Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80072 Salix Alba (Willow) Flower Extract – 282-029-0 (EU) Salix Alba (Willow) Leaf Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80073 Salix Alba (Willow) Leaf Extract – 282-029-0 (EU) Aqua (Water) http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=31959 Aqua – 231-791-2 (EU)

BATCH / LOT	See COA Batch Lot
SPECIES	Salix alba Syn: Salix Alba (Willlow) Bark, Flower, Leaves Extract Salix Alba Bark, Flower, Leaves Extract
PARTS USED	Leaves, Flowers, Bark
RAW MATERIAL – ORIGIN	North America
CONCENTRATION	-
COMMENTS	Carbon Dioxide Extract of Mugilaneous Fractions of Beta Hydroxy Acids (BHA) of Willow Tree Parts. A Quality Management System, compliant to the International Standard ISO 9001,was used to manufacture and test this material *Please take note that all specifications are liable to changes without prior notice.

Specification Parameter Analysis	**Specification Range**	**Results**	**Methods**
Physical Form	Liquid	Conforms	Visual
Color	Reddish brown	Conforms	Visual
Odor	Slight Characteristic	Conforms	Olfactory
Specific Gravity (20°C)	1.020 – 1.090	See COA	USP XXIX/Paar,DMA35
Refractive Index (20°C)	1.330 – 1.400	See COA	USP XXIX/DGF IV C (52)
pH (20°C) (100% Concentrate)	1.50 – 4.50	See COA	USP XXIX/DGF H III (92)
Solvent(S)	-	-	-
Carrier Menstrual (Vehicle) Standardization (%) Beta hydroxy; salicylic acid Water	 5% Min 45 – 55%	 - -	 Campo Method
Water Solubility	Soluble	Conforms	-
Dry Residue (160°C / 2hrs)	> 15%	See COA	Mettler 16J
Preservation	None	Corforms	-
Pesticide Content	None	Conforms	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml – Non-Pathogenic	Conforms	USP XXIX/Ph.Eur.2.6.12(97)
Total Yeast/Mold	<100 Cfu/ml	Conforms	USP XXIX/Ph.Eur.2.6.12(97)
Heavy Metals(Total)As,Pb,Hg	<0.005 ppm	Conforms	USP XXIX/Ph.Eur.2.6.12(97)

CAMPO RESEARCH Pte. Ltd, SINGAPORE
CAMPO RESEARCH USA, INC SAN DEIGO CA 92111, & Manhattan, New York City, USA
CAMPO RESEARCH s.r.o., Brno, Czech Republic
CAMPO RESEARCH Pvt. Ltd, CHENNAI , INDIA
CAMPO RESEARCH CANADA LTD, TORONTO, CANADA

MATERIAL SAFETY & CONSUMER SAFETY TESTING LABS.
DIV. OF JTC KAMPOYAKI SINGAPORE
EMERGENCY MATERIAL SAFETY / ACCIDENTAL RELEASE CENTER Contact:
Emergency Tel.no: +(65)-63833202/63833631(24hours) /63228551/63228503
Emergency Fax No: +(65)-63833632(24hours),63824680, 63228558
EMAIL: msds911@campo-research.com

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"(SAFETY DATA SHEET – compliant to GHS)" CONFIRMS TO EC DIRECTIVE 91/155/EEC, EC REGULATION NO#1272/2008, AMENDED EC REGULATION NO#790/2009 and Complies to The EU Cosmetic Products Regulation (Regulation (EC) No 1223/2009) effective on July 2013., and to EU Commission Regulation No.358/2014/9 of 9th April 2014 amending Annexes II and V, to EU Regulation No No.1223/2009 of The European Parliament and of The Council on Cosmetic products, (Effective Date 31st October 2014) AND to US DEPT.OF LABOR-Occupational Safety & Health Admin directives and compliant to Globally Harmonized System of Classification and Labeling of Chemicals (hereinafter referred to as "the GHS")., and Complies and Confirms to the Requirements of State of California Proposition 65.

A Quality Management System, compliant to the International Standard ISO 9001, was used to manufacture and test this material

http://www.osha.gov/dsg/hazcom/ghs.html

http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

http://www.hc-sc.gc.ca/ahc-asc/intactiv/ghs-sgh/index-eng.php

	DATE OF FIRST ISSUE	May 5th 1996-Reviewer - Dr Balasubramaniam PhD
	DATE OF LATEST REVISION	Jan. 20th 1997- Reviewer- Dr Fergus Jes .G.Velasquez Bsc. Med Tech, MD **Mr Jimmy Kee, 30th June 2003** **Mr Teo SH 5th Jan 2004** **Balasubramaniam M,PhD 21st August 2007** **Mr Joshua Teo, 21st Jan 2011** **Februrary 5th 2013 – Reviewer – Dr Balasubramaniam M PhD** **12th February 2015 - Joshua Teo BSc. Chem, Dr Balasubramaniam M. PhD & Oksana Nemchenko MD** **15th May 2016 - Joshua Teo BSc. Chem, Dr Balasubramaniam M. PhD & Oksana Nemchenko MD**
1	**PRODUCT AND COMPANY IDENTIFICATION**	
	COMMERCIAL NAME: OTHER TRADE NAME:	CAMPO WILLOW EXTRACT WILLOW EXTRACT
	LATIN NAME:	*Salix alba*
	CTFA ADOPTED NAME / INCI NAME:	Salix Alba (Willow) Bark Extract (and) Salix Alba (Willow) Flower Extract (and) Salix Alba (Willow) Leaf Extract (and) Aqua (Water)
	CHINESE TRANSLATION:	白柳（SALIX ALBA）树皮提取物 白柳（SALIX ALBA）花提取物 白柳（SALIX ALBA）叶提取物 水 (Aqua / Water)
	INTERNATIONAL CHEMICAL	Salix Alba (Willow) Bark Extract

	IDENTIFICATION *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009) and Compliant to the GHS*:	Salix Alba (Willow) Flower Extract Salix Alba (Willow) Leaf Extract Aqua (Water)
	EPA (USA) GENERIC NAME:	-
	MANUFACTURER: (cGMP MFG. FACILITIES)	CAMPO RESEARCH Pte Ltd Level 30, 6 Battery Road Singapore 049909
	EMERGENCY TELEPHONE NUMBERS:	(+65) 6383 3631 / (+65) 6322 8503 (Singapore)
2	**HAZARDS IDENTIFICATION**	
	NOT CLASSIFIED AS DANGEROUS ACCORDING TO DIRECTIVE 67/548/EEC OR ITS AMENDMENTS.	DIVISION 1.6; NON-HAZARDOUS NO HAZARD STATEMENT
	HAZARD CLASS and CATEGORY CODE(s)	PICTOGRAM : NONE
	HAZARD STATEMENT CODE(s) *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009)* and compliant to the GHS	No GHS Pictogram (Totally Non-Hazardous) Division 1.6; NO HAZARD STATEMENT
	<u>GHS CLASSIFICATION :</u> This material is Non-hazardous according To UN-GHS Criteria.	PICTOGRAM : NONE No GHS Pictogram (Totally Non-Hazardous) Division 1.6; No Hazard Statement.
	<u>GHS LABEL ELEMENTS:</u>	No GHS Pictogram (Totally Non-Hazardous) Division 1.6; No Hazard Statement.
3	**COMPOSITION / INFORMATION ON INGREDIENTS**	
	100 PERCENT CARBON-DIOXIDE GAS EXTRACTED SALIX ALBA PLANT PARTS IN WATER CARRIER MENSTRUM.	Salix alba (Willow) Flower, Leaf and Bark Extract
	CTFA Monograph ID:	9042 – Salix Alba (Willow) Bark Extract 9413 – Salix Alba (Willow) Flower Extract 9043 – Salix Alba (Willow) Leaf Extract 9423 – Aqua (Water)
	CAS# CAS# EU	84082-82-6 – Salix Alba (Willow) Bark Extract 84082-82-6 (EU) – Salix Alba (Willow) Bark Extract N/A – Salix Alba (Willow) Flower Extract 84082-82-6 (EU) – Salix Alba (Willow) Flower Extract 84082-82-6 – Salix Alba (Willow) Leaf Extract 84082-82-6 (EU) – Salix Alba (Willow) Leaf Extract 7732-18-5 – Aqua (Water) 7732-18-5 (EU) – Aqua (Water)
	CAS NO# (CAS Name) *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009)and compliant to the GHS*	84082-82-6 – Salix Alba (Willow) Bark Extract 84082-82-6 – Salix Alba (Willow) Flower Extract 84082-82-6 – Salix Alba (Willow) Leaf Extract 7732-18-5 – Aqua (Water)

	EINECS Numbers and Name EINECS# EU	282-029-0(1) – Salix Alba (Willow) Bark Extract 282-029-0 (EU) – Salix Alba (Willow) Bark Extract N/A – Salix Alba (Willow) Flower Extract 282-029-0 (EU) – Salix Alba (Willow) Flower Extract 282-029-0 (1) – Salix Alba (Willow) Leaf Extract 282-029-0 (EU) – Salix Alba (Willow) Leaf Extract 231-791-2(1) – Aqua (Water) 231-791-2 (EU) – Aqua (Water)
	EINECS# (EINECS Name) *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009) and compliant to the GHS*	282-029-0 – Salix Alba (Willow) Bark Extract 282-029-0 – Salix Alba (Willow) Flower Extract 282-029-0 – Salix Alba (Willow) Leaf Extract 231-791-2 – Aqua (Water)
	EINECS Name and Number EINECS# EU European Commission–Health & Consumer Cosmetics–Cosing	Salix Alba (Willow) Bark Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80071 Salix Alba (Willow) Bark Extract – 282-029-0 (EU) Salix Alba (Willow) Flower Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80072 Salix Alba (Willow) Flower Extract – 282-029-0 (EU) Salix Alba (Willow) Leaf Extract http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=80073 Salix Alba (Willow) Leaf Extract – 282-029-0 (EU) Aqua (Water) http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.details_v2&id=31959 Aqua – 231-791-2 (EU)
	RISK PHRASES SAFETY PHRASES 25-26	None Not Mandatory
	GHS CLASSIFICATION : This material is Non-hazardous according To UN-GHS Criteria.	PICTOGRAM : NONE
	GHS LABEL ELEMENTS:	No GHS Pictogram (Totally Non-Hazardous) Division 1.6; No Hazard Statement.
4	**FIRST AID MEASURES**	
	EYE CONTACT:	Wash with water or standard eye wash solution. Seek medical advice, if irritation occur and persist.
	ORAL INGESTATION:	If symptoms persist, consult a doctor.

	SKIN CONTACT:	Wash with water or shower
5	**FIRE FIGHTING MEASURES**	
	COMBUSTIBLE BUT PRESENTS NO SPECIAL FIRE HAZARD.	
	EXTINGUISHING MEDIA:	Treat as oil fire when store in HDPE drums with CO_2, dry foam or dry chemical.
	PROTECTIVE EQUIPMENTS FOR FIGHTERS:	Standard Equipments.
6	**ACCIDENTAL RELEASE MEASURES**	
	ABSORB ONTO AN INERT MATERIAL AND SCRAPE UP. REMOVE RESIDUE BY SCRUBBING WITH HOT WATER OR DETERGENT SOLUTION.	
7	**HANDLING AND STORAGE**	
	STORE IN SEALED CONTAINERS UNDER NORMAL COOL, DRY WAREHOUSING CONDITIONS.	
8	**EXPOSURE AND PERSONAL PROTECTION**	
	IN ACCORDANCE WITH GOOD INDUSTRIAL PRACTICE AND HANDLING USING STANDARD EYE PROTECTION.	
9	**PHYSICAL AND CHEMICAL PROPERTIES**	
	PHYSICAL FORM:	Liquid
	COLOUR:	Clear, Reddish brown
	ODOUR:	Slight characteristic
	BOILING POINT:	-
	MELTING POINT:	-
	VISCOSITY:	-
	FLASH POINT:	N/A
	FLAMMABILITY SOLID/GAS:	N/A
	AUTO FLAMMABILITY:	N/A
	SPECIFIC REFRACTIVE:	1.330 – 1.400
	EXPLOSIVE PROPERTIES:	N/A
	pH: (100% Concentrate)	1.50 – 4.50
	OXIDIZING PROPERTIES:	N/A
	VAPOUR PRESSURE:	N/A
	DENSITY:	1.020 – 1.090
	WATER SOLUBILITY:	Soluble
	OTHER SOLUBILITY:	In most cosmetic solvents
	BULK DENSITY:	-
	PARTITION COEFFICIENT: (OCTANOL/WATER)	-
	EXPLOSIVE LIMITS:	-
10	**STABILITY AND REACTIVITY**	
	THERMAL DECOMPOSITION:	Stable under normal conditions of use.
11	**TOXICOLOGICAL DATA**	**Animal Tests Last Done 1992, as requirements of the then EC DIRECTIVE 91/155/EEC**
	ORAL:	LD_{50} > 5,800 MG/KG (Body Wt.) Rat Essentially Non-Toxic and Edible in Small Quantity.
	DERMAL:	Expected To Be Essentially Non Toxic.
	INHALATION:	May cause irritation to the upper repiratory tract.
	SPECIFIC CONCENTRATION LIMITS M-FACTORS *(EC REGULATION NO#1272/2008*	5,800 MG/KG (Body Wt.); CATEGORY 5 Essentially Non-Toxic and Edible in Small Quantity.

	AMENDED NO#790/2009) compliant to the GHS.	
	TOXIC EFFECTS:	
	SKIN:	Primarily Irritation Index (PII) = 0.0 (Non-Irritating - Skintex), Not A Primarily Irritant. Non-irritant / Non-sensitizer as per Repeated Patch Insult Test on 50 Human volunteers. Human Repeated Patch Test 48 hours: 50/50 completely non-irritating / non-erythema causing ingredient at 100% concentrate in water on 50 human volunteers
	EYE:	Very Mild/Minimal-not A Transient Conjunctival Irritant at 1% concentrate in water (Eyetex Classification). *Summarized toxicological data as shown here are formation bounded under Non-Disclosure Agreement with various clients as when these Toxicological Data were established or their exclusive uses.*
12	**ECOLOGICAL INFORMATION**	
	BIODEGRATION:	Expected To Be Ultimately Biodegradable.
	FISH TOXICITY:	No Data
	BACTERIAL & VIRAL TOXICITY:	Very harmful to bacterial and viral micro-organism.
	WGK CLASS:	WGK (Self Classification)
13	**DISPOSAL CONDITIONS**	
	DISPOSE OFF ACCORDING TO A RECOGNISED METHOD OF CHEMICAL WASTE DISPOSAL.	
14	**TRANSPORT INFORMATION**	
	UN NUMBER# :	N/A
	UN NAME:	Not Assigned
	IMDG CODE/CLASS:	Not Hazardous
	IMDG CODE PAGE NO.	N/A
	ICAO/IATA AIR CLASS:	Non-Hazardous
	ICAO/IATA AIR CLASS PACKING GROUP:	N/A
	RID/ADR CLASS:	Non-Hazardous
	ADNR CLASS:	Non-Hazardous
	LABELLING: *(EC REGULATION NO#1272/2008 AMENDED NO#790/2009) and compliant to the GHS.*	
	PICTOGRAM SIGNAL WORD CODE(s):	No GHS Pictograms (Totally Non-Hazardous)
	HAZARD STATEMENT CODE(s):	Division 1.6; No Hazard Statement
	SUPPLEMENTARY HAZARD STATEMENT CODE(s):	Similar Division 1.6; No Hazard Statement
15	**REGULATORY INFORMATION**	
	OCCUPATIONAL EXPOSURE LIMITS:	N/A
	U.S. State of California Proposition 65 INGREDIENTS Presence	None (Exempted from CA Prop 65 Register)
	EU Commission Regulation No.358/2014/9 of 9th April 2014 amending Annexes II and V, to EU Regulation No No.1223/2009 of The European Parliament and of The Council on Cosmetic products	"Contains No Parabens and nor contains any Branched Chain Parabens".(EU Regulation No.358/2014/9 of 9th April 2014)

16	OTHER INFORMATION	
	USES AS A COSMETIC ADDITIVE	1.0 – 10.0 %
	This format and information is compiled by Kampoyaki Novel Natural Product Chemistry/ Novel Drug Discovery cGMP Labs Kobe, Japan; for Campo Research, Kyoto and Singapore.	*Please take note that all specifications are liable to changes without prior notice.

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