Campo Research

Japanese Mushroom Extract

novel functional ingredients

for cosmetic formulations

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CAMPO® Multi-Purpose Cosmetic Base Chemicals & Active Ingredients

CAMPO® Novel Functional Active Cosmetic Ingredient & Raw Materials

JAPANESE MUSHROOM EXTRACTS

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Glycolic Extracts (1,3-butylene glycol)

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JAPANESE MUSHROOM EXTRACTS

Japanese Medicinal Mushrooms as Cosmetics Ingredients

Introduction

Apart from being served in restaurants sautéed with garlic butter and being the major constructive element in fairy circles, most people know very little about mushrooms. The exception perhaps being the minority who have a fringe interest in those varieties with hallucinogenic properties, the magic mushrooms of the 60's psychedelia generation.

There are today over 1500 varieties of fungi growing in UK ranging from the edible field mushroom, *Agaricus campestris*, the hallucinogenic Fly Agaric, *Amanita muscaria* and *Psilocybe neo-lanceolata*, Liberty Cap, a resident of Hempstead Health, to the deadly poisonous Destroying Angel, *Amanita virosa* and the aptly named Death Cap, *Amanita phalloides*.

Worldwide, over 64,000 have been identified. Fungi are unique amongst the plant kingdom, in that they possess no chlorophyll. Thus they can not take part in photosynthesis for their metabolism and have to resort to other means in order to live. Many enjoy symbiotic or parasitic relationship with other plants whilst others are free growing, generally on decaying matter, from which they derive their nutrients. As they contain no chlorophyll, they do not take in carbon dioxide and give off oxygen as do greenish plants, but respire in the opposite way, similar to animals and are thus net consumers of oxygen.

But as with most plants, animals, minerals of the Earth, the inhabitants of many parts of the World have over the ages thoroughly investigated not only the culinary attributes of fungi, but also their medicinal and cosmetics properties.

There is some debate as to when the penchant for eating mushrooms originated, in fact no one seems to know for sure. Indications are that nomadic hunters as long ago as the last ice age feasted on various local fungi, but it was during classic times that mushrooms came to the fore and their use initially recorded.

In the first century, the physician Nicander eloquently spelled out the dangers of eating the wrong varieties, Dioscorides making similar reference some hundred years later. Greeks and Romans were very partial to mushrooms, and at least one Roman Emperor, the infamous Claudius, succumbed to the toxins of *Amanita caesarea*, albeit with the helping hands of his scheming third wife Agrippina and a local witch Locusta

However, the beneficial medicinal properties of mushrooms were also recognized and recorded by Dioscorides who described Agaricus, actually a *Fomes spp*. as being effective against colds, sores, fractures, asthma etc.

In more modern times, the first serious attempt to classify mushrooms was made by the French botanist Clusius, although the famous herbals written by Gerard and Culpeper hardly give mushrooms a mention. Grieve, on the other hand, in "A Modern Herbal" (1), gives fungi a good airing, referring to medicinal and even pharmaceutical status for several species including the Giant Puff Ball*, Lycoperdon gigantea*, which in addition to being an article of diet for certain native American tribes has been used in England to arrest hemorrhage.

The hallucinogenic properties of mushrooms have been associated with Shamanism in many parts of the world. Nomadic hunters of Northern Europe and Asia have been reported as using Fly Agaric, *Amanita muscaria*, to induce shamanistic trances. The Koryak people of Eastern Siberia, inhabitants of the shores of the Sea of Okhotsk on the Kamchatka Peninsula, believed that the plants were inhabited by spirits known to them as Wapag man.

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These spirits of the woods were believed to have left the fungi for the benefit of mankind to enable them to learn something of the temporal world.

One well reported story relates to times of short supply of the fungus and to a strange kind of pecking order in which the most senior shaman. Apparently, the hallucinogen is quickly absorbed into the bloodstream, and into the urine via the kidneys. It continues to be passed around the group in this fashion. Recycling with a difference !!!

In Central and South America also, the local magic mushroom is utilized for shamanistic purposes. Elderly women of the tribes employ *Psilocybe mexicana*, a relative of our own Hempstead Heath variety, to aid in the prescription of magic and cures. The *Psilocybe* species contain two hallucinogenic alkaloids, psilocybin and psilocin. Although structurally related chemically to LSD they possess only approximately 1% of its psychotropic activity (2).

Nearer to home, it is believed that witches of the middle ages were well aware of the psychotropic effect of certain mushrooms. It is believed that the act of riding on broomsticks is actually a representation of their use of sticks to administer mushroom potions analy, a well-documented route for drugs to enter the bloodstream quickly.

But as with many things botanical, it is the inhabitants of the Pacific rim that seem to have more deeply studied the beneficial properties of these fascinating species. The present article describes the properties of several species from that geographical area in relation to their use in cosmetics formulations.

Perhaps the best-known Japanese mushroom is the **Shiitake**, *Lentinus edodes*, It is cultivated on oak logs with which it enjoys a parasitic relationship. In the Far East it is revered. Foodwise, it is sliced and stir-fried, cooked in soups, canned or pickled. It is nutritious and rich in many essential amino acids.

In both China and Japan, it is considered a revitalizing tonic whilst some consider it to enhance sexual performance. It is prescribed to reduce blood pressure and cholesterol, to treat anemia, diabetes and cancer possibly via a stimulation of the immune system. The chemical lentinan resists carcinogens, an attribute shared by many fungal carbohydrates.

In the Far East, a holistic approach prevails for both health and beauty and a Shiitake mushroom tea is one means used to strengthen, vitalize, energize and tone the body, (3)

The present booklet provides just a brief look at a new, novel source of functional cosmetics ingredients. For a marketing view with a difference, sample the world of fabulous fungi, invoke the magic of mushrooms to your new formulations.

References:

1 Grieve,M, A Modern Herbal, Penguin Books, ISBN 0-14-046440-9

2 Wills, S., The Pharmaceutical Journal, **251**, 227-229, (1993)

3 Michelle D.Leigh, The Japanese Way of Beauty, Thorsons, ISBN 0-7225-2976-7

Other reading:

Jordan, M, Mushroom Magic, Elm Tree Books, London, ISBN 0-241-12844-7

McDonald Encyclopaedia of Mushrooms

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT #230310

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO EBURIKO HYDROGLYCOL EXTRACT
Other Trade Names (Campo Research)	Eburico
CTFA TRADE NAME (Proposed)	CAMPO EBURIKO
Existing CTFA/INCI Name	Fomistopsis officinalis
CAMPO PRODUCT #	230310
CAS#	N/A
EINECS#	N/A
EINECS Name	N/A

Japanese name: Eburico
Other names:

Literature:

Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan

Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988

Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA

Wagner, H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research Academic Press, New York, 1988.

Active substances:	
polyunsaturated fungal lipids	softening action on skin
trans-retinoic acid	healing & moisturising
vitamin E	anti-oxidant
amino acid residues (oil sol.)	moisture regulating action
fungal sterols	circulation stimulant/antiphlogistic
a pentadecanoate	antitumour/surface immunity
organic germanium	skin lightener, SOD anti-oxidants
UVzymes™	UV filter / absorber

Oriental tradition applications and medicinal status:

Tonic foods, seasonal delicacies, skin lightener, hair care topical

Ethnobotany:

Eburiko is the name applied to this food source mushroom, which is also used as a general tonic, and as a natural anti-oxidant and anti-germicide/bactericide. The belt of waxes from around the mushroom margin is used to extract a rich mushroom oil, which is used sparingly in the seasoning of foods. The oils is also used to treat slow healing wounds, smoothing dry, coarse and chapped skin, as a novel source of gamma-linoleic acid, (GLA), all-trans Retinoic acid and fungal Ω-3- polyunsaturated fatty acids and other polyunsaturated fungal lipids used in the repair of skin tissues and wound healing, eczema, psoriasis and phlebitis.

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Applications and dosage recommendations:

Eburiko is recommended for incorporation in sensitive skin care products, facial tonics and creams, hair shampoos, liquid soap preparations and rinse off products (skin and hair care preparations).

Usage levels: 10 - 25 %

Applications code:

SPECIES	Fomistopsis officinalis Syn: Fomistopsis officinalis
PARTS USED	Fruiting bodies
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 50.00 kg Eburiko (fresh)

Specification Parameter Analysis	**Specification Range**	**Methods**
Physical Form	Liquid	Visual
Colour	Clear, Pale Golden Yellow	Visual
Odour	Odorless to very slight faint	Oil Factory
Specific Gravity(20deg.C)	0.875 - 0.945	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.390 - 1.490	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	5.5 - 7.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	45 - 60%	-
1,3-butylene Glycol	40 - 50%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.10 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

NOT FOR DRUG USE

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT #2119

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO KAWARATAKE HYDROGLYCOL EXTRACT
Other Trade Names (Campo Research)	Kawaratake, Turkey tail mushroom
CTFA TRADE NAME (Proposed)	CAMPO KAWARATAKE
Existing CTFA/INCI Name	Coriolus versicolor
CAMPO PRODUCT #	2119
CAS#	N/A
EINECS#	N/A
EINECS Name	N/A

Japanese name: Kawaratake
Other names: Turkey tail mushroom (UK)

Literature: Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan

Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988

Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA Wagner,

H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research Academic Press, New York,1988.

Active substances:	coriolin	antibiotic action and anti-tumor inhibitory action
	protein bound PS-K	cytotoxic effect on skin & other cancer cells
	organic germanium-complexed with Ge132-dependent SOD enzyme	skin-lightening, anti-oxidants
	UVzymes™	UV filter / absorber

Oriental tradition applications and medicinal status:

Tonic food, Skin lightening topical, After sun topical

Ethnobotany:

Kawaratake is drunk in the form of a tea for the treatment of flu, colds, asthma, and bronchitis and is much sought after for the treatment of general debility. It is used in many food delicacies, which are particularly consumed in the Autumn and Winter.

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Cosmetically, Kawaratake is used in the Far East for the treatment of body zones with weak connective tissue, in massage formulations and the treatment of acne and on irritated erythema due to sunburn.

Applications and dosage recommendations:

Mirroring its traditional cosmetics application, Kawaratake is recommended for incorporation in massage formulations, after-shave, after-sun products, anti-acne products, anti-aging and anti-cellulite formulations.

Usage levels: 5 - 10 %

Applications code:

SPECIES	Coriolus versicolor Syn: Trametes versicolor
PARTS USED	Mycelium
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 200.00 kg Karawatake (fresh)

Specification Parameter Analysis	Specification Range	Methods
Physical Form	Liquid	Visual
Colour	Clear Yellowish Brown	Visual
Odour	Characteristic	Oil Factory
Specific Gravity(20deg.C)	1.035 - 1.055	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.415 - 1.435	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.0 - 8.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	45 - 60%	-
1,3-butylene Glycol	40 - 50%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germ	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT #2109

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO MAGOJAKUSHI HYDROGLYCOL EXTRACT
Other Trade Names(CampoResearch)	Magojakushi, Ganoderma mushroom
CTFA TRADE NAME (proposed)	CAMPO MAGOJAKUSHI
Existing CTFA/INCI Name	Ganoderma neo-japanicum
CAMPO PRODUCT #	2109
CAS#	N/A
EINECS#	N/A
EINECS Name	N/A

Japanese name: Magojakushi
Other names: Ganoderma mushroom (UK)

Literature: Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan

Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988

Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA Wagner,

H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research Academic Press, New York, 1988.

Active substances:		
	ganodermenonol	anti-histamine actions on surface skin cells
	ganodermadiol	cytotoxic effect on skin cancer cells
	ganodermatriol	free radical scavenging and anti-aging action on surface skin cells
	organic germanium--complexed with Ge132 SOD enzyme	skin lightener, SOD anti-oxidant
	UVzymes™	UV filter / absorber

Oriental tradition applications and medicinal status:

Tonic food, Skin lightener, anti-aging, UV absorber (sun-protection)

Ethnobotany:
This magical mushroom is much sought after delicacy, and is also known as the *panacea-polypore*. This mystical panacea is used in the highest class of tonics in the Far East and is often substituted now by the Reishi mushroom in Japan.

Applications and dosage recommendations:
Magojakushi is recommended for that incorporation in sensitive facial lotions, moisturizing products, sensitive skin care products, and hair care preparations.

Usage levels: 2 - 8 %

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Applications code:

SPECIES	Ganoderma neo-japonicum Syn: Ganoderma neo-japanicum
PARTS USED	Mycelium
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 150.00 kg Magojakushi (dried)

Specification Parameter Analysis	Specification Range	Methods
Physical Form	Liquid	Visual
Colour	Clear, Dark red	Visual
Odour	Characteristic, light Acid	Oil Factory
Specific Gravity(20deg.C)	1.030 - 1.065	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.425 - 1.450	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	3.0 - 6.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	10 - 20%	-
1,3-butylene Glycol	75% - 95%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

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This material has not been animal tested for efficiency, bioavailability or therapeutic content

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT# 23030A

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO MANNENTAKE HYDROGLYCOL EXTRACT
Other Trade Names (Campo Research)	Artist Conk Fungus (USA)
CTFA TRADE NAME(Proposed)	CAMPO MANNENTAKE
Existing CTFA/INCI Name	Ganoderma lucidum
CAMPO PRODUCT #	23030A
CAS#	N/A
EINECS#	N/A
EINECS Name	N/A

Japanese name: Mannentake, Reishi
Other names: Artist conk fungus (USA)

Literature:

Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, Tokyo, Japan

Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988

Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA

Wagner, H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research Academic Press, New York, 1988.

Active substances:	
Ganodermenonol	anti-histamine actions on skin
unsat C_{14} - C_{18} fatty acids	moisturising / caring
amino acids	moisture regulating action
vegetable sterols	circulation stimulant / antiphlogistic
an octadecanoate	antitumour / surface immunity
organic germanium	SOD anti-oxidants
UVzymes	UV filter / absorber

oriental tradition applications and medicinal status :

Tonic foods, anti-cold remedies, skin lighteners, moisturizer, dry & peeling skin topical

Ethnobotany:

Mannentake is the name applied to this food source mushroom whilst for medicinal applications it is known as Reishi. Specific uses are a general debility tonic, and as a natural anti-biotic etc. The rich mushroom oil extracted from the waxes affords a fatty oil, which is used sparingly in the seasoning of food. Medicinally, it is used as a treatment for removal of warts, swellings and the smoothing of dry, coarse and chapped skin.

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Applications and dosage recommendations:

Mannentake is recommended for incorporation in moisturising products, day and night creams, lotions, cleansing milk, liquid soap preparations etc.

Usage levels: 5 - 10 %

Applications code:

SPECIES	Ganoderma lucidum Syn: Ganoderma lucidum
PARTS USED	Fruiting bodies
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 750.00 kg Mannentake (fresh)

Specification Parameter Analysis	**Specification Range**	**Methods**
Physical Form	Liquid	Visual
Colour	Clear light yellow	Visual
Odour	Characteristic, faint	Oil Factory
Specific Gravity(20deg.C)	0.925 - 0.955	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.430 - 1.460	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.0 - 6.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	55 - 80%	-
1,3-butylene Glycol	30 - 40%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT PD#0001

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO MATSUTAKE HYDROGLYCOL EXTRACT
Other Trade Names(CampoResearch)	Song-Yi, Korean Red Pine mushroom
CTFA TRADE NAME(Proposed)	CAMPO MATSUTAKE
Existing CTFA/INCI Name	Tricholoma matsutake (S. Ito et Imai) Singer
CAMPO PRODUCT #	Pd#0001
CAS#	N/A
EINECS#	N/A
EINECS Name	N/A

Japanese name: Matsutake
Other names: Song - Yi (Korea), Korean Red pine mushroom (English)

Literature:

Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan
Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988
Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA
Wagner, H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research Academic Press, New York, 1988.
Kaji,J.et al., Bioscience, Biotechnology and Biochemistry, 1993,57,(3), (Mar), 363-366
Iwase, K., Canad. J. of Botany, 1992, 70, (6) (Jun), 1234-1238
Yokoyama, R. et al., Trans of the Mycological Soc. Jap., 1987,28, (3), 331-338
Kim,C.H., J. Korean Forestry Soc., 1986, (64), 33-41
Abe, M., Agri & Biological Chemistry, 1982,46, (7), 1955-1957
Lee, T.S., Wood Science & Technology, Korea, 1986, 11, (6), 37-44
Magaja, Colorado University J Agricultural & Food Chem., 1981,29,1-4
Pyo,M.Y., Korean J Nutrition, 1975, 18, (1), 47-59
Brian, P.W., Trans. of the British Mycological Soc, 1972,58, (3), 359-375

Active substances:		
	S-matsutake alcohol	stimulating fragrance
	2-octen-1-ol	circulatory stimulant / bacteriostatic moisturising
	amino acids	moisture retainer
	methyl cis-α-methylcinnamate	stimulating fragrance
	α- and β-pinene	stimulating fragrance
	cembrenes	
	organic germanium coupled--Ge132 SOD enzyme (EC: 1.15.1.11)	skin lightener, SOD anti-oxidant
	UVzymes™	UV filter / absorber

Oriental traditional applications and medicinal status:
Tonic food, Skin lightener & whitener, anti-aging, after sun topical

Ethnobotany:
This edible fungus is much sought after in Japan due to its unique fragrance, a sweet earthy pine-like mushroom odour. As such it provides a natural flavouring and fragrance to festive season delicacies where it is used as the main ingredient.

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Cosmetically, it is used as a decoction, normally steeped overnight in water, the solution then being used as a facial wash, generally in Autumn, to remove summer sun darkened facial spots and for the tightening of facial wrinkles**.**

Applications and dosage recommendations:

Matsutake is recommended for incorporation in sensitive facial lotions, moisturising products, sensitive skin care products, hair care preparations and bath and shower products.

Usage levels: 10 - 15 %

Applications code:

SPECIES	Tricholoma matsutake (S. Ito et Imai) Singer Syn: Armillaria matsutake S.Ito et Imai
PARTS USED	Mycelium
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 80 .00kg Matsutake

Specification Parameter Analysis	**Specification Range**	**Methods**
Physical Form	Liquid	Visual
Colour	Brown	Visual
Odour	Characteristic, sweet earthy pine/mushroom	Oil Factory
Specific Gravity(20deg.C)	1.000 - 1.020	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.400 - 1.520	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.- 0 - 8.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	30 - 50%	-
1,3-butylene Glycol	50 - 80%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml – **Non Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:
Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

NOT FOR DRUG USE

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT #2401

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO RAIGANKIN HYDROGLYCOL EXTRACT
Other Trade Names (Campo Research)	Raigankin
CTFA TRADE NAME(Proposed)	CAMPO RAIGANKIN
Existing CTFA/INCI Name	Polyporus mylittae
CAMPO PRODUCT #	2401
CAS#	N/A
EINECS#	N/A
EINECS Name:	N/A

Japanese name: Raigankin
Other names:

Literature:
Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan
Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988
Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA Wagner,
H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher
Plants, in Economic and Medicinal Plant Research
Academic Press, New York, 1988.

Active substances:	
fungal bio-sulphur	anti-mycotic
fungal salicylic acid	keralytic effect
organic oils	astringent
volatile oils	scalp stimulant
bioavailable pure organic germanium	hair strengthening
UVzymes™	UV filter / absorber

Oriental tradition applications and medicinal status:

Tonic food, anti-dandruff and hair growth aid topical, skin lightener, UV & sun protection for hair

Ethnobotany:

Raigankin is traditionally used extensively in food preparations. It is also used in hair dressing and for the treatment of dandruff. This specific functionality may be ascribed to the presence of sulfur, which exhibits anti-mycotic activity and salicylic acid derivatives, which elicit keralytic effects, both actions resulting in effective dandruff control.

Applications and dosage recommendations:
The properties of Raigankin suggest applicants in all hair care products, especially those products designed for the treatment of dandruff.

In hair care products, 5 - 10 %

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Applications code:

SPECIES	Polyporus mylittae Syn: Polyporus mylittae
PARTS USED	Fruiting bodies
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 30 .00kg Polyporus mylittae(fresh)

Specification Parameter Analysis	Specification Range	Methods
Physical Form	Liquid	Visual
Colour	Dark brown viscous	Visual
Odour	Characteristic	Oil Factory
Specific Gravity(20deg.C)	1.010 - 1.125	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.400 - 1.485	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	2.0 - 4.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	10 - 60%	-
1,3 -butylene Glycol	10 - 60%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.001 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT #21010

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO SEMITAKE HYDROGLYCOL EXTRACT
Other Trade Names (Campo Research)	Deer Mushroom (USA)
CTFA TRADE NAME(Proposed)	CAMPO SEMITAKE
Existing CTFA/INCI Name	Cordyceps sabolifera
CAMPO PRODUCT #	21010
CAS#	N/A
EINECS#	N/A
EINECS Name:	N/A

Japanese name: Semitake
Other names: Deer Mushroom (USA)
Literature:
Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan
Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley,CA, 1988
Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA Wagner,
H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher
Plants, in Economic and Medicinal Plant Research
Academic Press, New York, 1988.

Active substances:		
	polysaccharide co-1	acts on peripheral blood circulation
	ophiocordin	anti-fungal/surface immune stimulant
	amino acids	moisture regulation on skin surface
	sesquiterpenes	anti-phlogistic / bacteriostatic
	resinoids	anti-viral action
	organic germanium -coupled with Ge132	skin-lightener, SOD anti-oxidants
	SOD enzyme	
	UVzymes™	UV filter / absorber

Oriental tradition applications and medicinal status :

tonic food, skin lightener, anti-cold remedy, and hair growth aid topical

Ethnobotany:

Semitake is traditionally used extensively as a medicinal food mushroom and is used for the treatment of general debility, post-partum debility and as a natural antibiotic. As a food, it is incorporated in rich mushroom spicy cream stock for soups and broths, and also as a mushroom spice.

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Applications and dosage recommendations:

The properties of Semitake suggest applicants in cooling preparations, refreshing facial lotions, moisturising preparations and after-bath skin care products.

In hair care products, 2-5 %

Applications code:

SPECIES	Cordyceps sabolifera Syn: Cordyceps ophioglossioides
PALNT PARTS USED	Mycelium (tissue cultured)
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 18 .00kg Semitake (fresh)

Specification Parameter Analysis	**Specification Range**	**Methods**
Physical Form	Liquid	Visual
Colour	Clear, yellow	Visual
Odour	Characteristic faint	Oil Factory
Specific Gravity(20deg.C)	1.025 - 1.050	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.365 - 1.395	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.5 - 6.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	45 - 65%	-
1,3-Butylene Glycol	30 - 45%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

NOT FOR DRUG USE
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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT #23030A/B

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO TSUGAROMOSHIKAKE HYDROGLYCOL EXTRACT
Other Trade Names(CampoResearch)	Red-belted polyspore (USA)
CTFA TRADE NAME(Proposed)	CAMPO TSUGAROMOSHIKAKE
Existing CTFA/INCI Name	Fomistopsis Pinicola
CAMPO PRODUCT #	23030 A / B
CAS#	N/A
EINECS#	N/A
EINECS Name:	N/A

Japanese name: Tsugasaromoshikake
Other names: red- belted polyspore (USA)

Literature:
Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, Tokyo, Japan
Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988
Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA
Wagner,
H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research
Academic Press, New York, 1988.

Active substances:	
vitamin H (linoleic)	softening action on skin
unsat C_{14} - C_{18} fatty acids	moisturising / caring
amino acids	moisture regulating action
fungal sterols	circulation stimulant/ antiphlogistic
a pentadecanoate	antitumour /surface immunity
organic germanium	SOD anti-oxidants
UVzymes	UV filter / absorber

Ethnobotany:

Tsugarunoshikake is the name applied to this food source mushroom, which is also used as a general tonic, and as a natural anti-oxidant and anti-germicide/bactericide. The belt of waxes from around the mushroom margin is used to extract a rich mushroom oil, which is used sparingly in the seasoning of foods. The oils is also used to treat slow healing wounds, smoothing dry, coarse and chapped skin and as an oil soluble red dye.

Applications and dosage recommendations:

Eburiko is recommended for incorporation in sensitive skin care products, facial tonics and creams, hair shampoo, liquid soap preparations and rinse off products and as a natural red dye.

Usage levels: 2- 8 %

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Applications code:

SPECIES	Fomistopsis Pinicola Syn: Fomistopsis Pinicola
PARTS USED	Fruiting bodies
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 50 .00kg Tsugaromoshikake (fresh)

Specification Parameter Analysis	Specification Range	Methods
Physical Form	Liquid	Visual
Colour	dark red	Visual
Odour	Odorless to very slight faint	Oil Factory
Specific Gravity(20deg.C)	0.920 - 0.955	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.420 - 1.460	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.0 - 5.5	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	50 - 75%	-
1,3-butylene Glycol	35 - 45%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:

Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract

This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

NOT FOR DRUG USE

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT# 2400

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO TSURIGANEDAKE HYDROGLYCOL EXTRACT
Other Trade Names (Campo Research)	Tsuriganedake; Amadou
CTFA TRADE NAME (Proposed)	CAMPO TSURIGANEDAKE
Existing CTFA/INCI Name	Fomes fometarius
CAMPO PRODUCT #	2400
CAS#	N/A
EINECS#	N/A
EINECS Name:	N/A

Japanese name: Tsuriganedake
Other names: Amada (USA)

Literature:
Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan
Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988
Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA
Wagner, H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research
Academic Press, New York, 1988.

Active substances:		
	c-AMP	prevents early aging of skin cells
	polysaccharides	moisturising
	saponins	antiphlogistic action
	flavonoids	radical scavenging
	organic acids	astringent
	organic germanium	skin lightener, SOD anti- oxidants
	UVzymes™	UV filter / absorber

Oriental tradition applications and medicinal status :

Tonic foods, mechanical blood bleeding stanching aid, skin blemishes, wrinkles and lightening topical

Ethnobotany:
Tsuriganedake is used as a dressing to staunch the flow on blood from deep wounds. It is used in the form of a tea for the treatment of flu, colds , asthma, and bronchitis and for general debility. It is used in many food delicacies, which are particularly consumed in the Autumn and Winter.

Cosmetically, Tsuriganedake is used in the Far East for the treatment and repair of signs of skin aging

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Applications and dosage recommendations:

Investigating the traditional use of this fungus, it has now become apparent that the anti-aging action is due to the presence of cyclic adenosine monophosphate (c-AMP) which is involved as a secondary messenger for the metabolic process in the inner cells. This is reported to prevent cellular changes and defer the appearance of early signs of skin aging.

Tsiriganedake is recommended for incorporation in after-sun preparations, facial lotions, and hair care products, creams and lotions for rough and irritated skin and moisturising products

Usage levels: 5 - 10 %

Applications code:

SPECIES	Fomes fometarius Syn: Fomes fometarius
PARTS USED	Mycelium
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 30.00 kg Tsuriganedake (fresh)

Specification Parameter Analysis	Specification Range	Methods
Physical Form	Liquid	Visual
Colour	Clear , Light yellow	Visual
Odour	Characteristic, faint spicy-cinnamon	Oil Factory
Specific Gravity(20deg.C)	1.025 - 1.055	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.350 - 1.450	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.0 - 7.0	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle)		
Water	45 - 65%	-
1 , 3 - Butylene Glycol	30 - 55%	
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:
Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

NOT FOR DRUG USE

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JAPANESE MUSHROOM EXTRACTS

CAMPO RESEARCH PRODUCT PD#0001/A

JAPANESE MEDICINAL MUSHROOM EXTRACTS FOR COSMETICS APPLICATIONS

PRODUCT TECHNICAL DATA SHEET

PRODUCT Name (Campo Research)	CAMPO MATSUTAKE AQUEOUS EXTRACT
Other Trade Names (Campo Research)	Matsutake, Song-Yi, Korean Red Pine mushroom
CTFA TRADE NAME(Proposed)	CAMPO MATSUTAKE AQUEOUS
Existing CTFA/INCI Name	Tricholoma matsutake (S. Ito et Imai) Singer
CAMPO PRODUCT #	pd #0001/A
CAS#	N/A
EINECS#	N/A
EINECS Name:	N/A
Japanese name:	Matsutake
Other names:	Song-Yi (Korea), Korean Red pine mushroom (English)

Literature:

Japanese Chuyaku Daijiten, Vol 1-8, Shoggakkan Co Ltd, and Tokyo, Japan
Arora, David, Mushrooms Demystified (2nd ed.),Ten Speed Press, Berkeley, CA, 1988
Bo, Lui, Fungi Pharmacopoeia, Kinoko Co, PO Box 8426, Oakland, CA Wagner, H. & Proksch, A., Immunostimulatory Drugs of Fungi and Higher Plants, in Economic and Medicinal Plant Research
Academic Press, New York, 1988.
Kaji,J.et al., Bioscience, Biotechnology and Biochemistry, 1993,57,(3), (Mar), 363-366
Iwase, K., Canad. J. of Botany, 1992, 70, (6) (Jun), 1234-1238
Yokoyama, R. et al., Trans of the Mycological Soc. Jap., 1987,28, (3), 331-338
Kim,C.H., J. Korean Forestry Soc., 1986, (64), 33-41
Abe, M., Agri & Biological Chemistry, 1982,46, (7), 1955-1957
Lee, T.S., Wood Science & Technology, Korea, 1986, 11, (6), 37-44
Magaja, Colorado University J Agricultural & Food Chem., 1981,29,1-4
Pyo,M.Y., Korean J Nutrition, 1975, 18, (1), 47-59
Brian, P.W., Trans. of the British Mycological Soc, 1972,58, (3), 359-375

Active substances:	
S-matsutake alcohol	stimulating fragrance
2-octen-1-ol	circulatory stimulant/bacteriostatic
methyl cis-α-methylcinnamate	moisture retainer
α- and β-pinene	stimulating fragrance
cembrenes	stimulating fragrance
polysaccharides	moisturising / caring
essential oils	aromatherapeutical relaxant
organic germanium	skin lightener, SOD anti-oxidants
UVzymes	UV filter / absorber

Ethnobotany:

This edible fungus is a much sought after in Japan due to its unique fragrance, a sweet earthy pine-like mushroom odour. As such it provides a natural flavouring and fragrance to festive season delicacies where it is used as the main ingredient.

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Cosmetically, it is used as a decoction, normally steeped overnight in water, the solution then being used as a facial wash, generally in Autumn, to remove summer sun darkened facial spots and for the tightening of facial wrinkles.

Applications and dosage recommendations:

Matsutake is recommended for incorporation in sensitive facial lotions, moisturising products, sensitive skin care products, hair care preparations and bath and shower products.

Usage levels: 10 - 15 %

Applications code:

SPECIES	Tricholoma matsutake (S. Ito et Imai) Singer Syn: Arillaria matsutake S.Ito et Imai
PARTS USED	Mycelium
RAW MATERIAL - ORIGIN	JAPAN
CONCENTRATION	1.0 kg extract = 120 .00kg Matsutake (dried)

Specification Parameter Analysis	Specification Range	Methods
Physical Form	Liquid	Visual
Colour	Slightly Cloudy White	Visual
Odour	Characteristic, sweet earthy pine/mushroom	Oil Factory
Specific Gravity(20deg.C)	1.090 - 1.150	USP XXIX / Paar, DMA35
Refractive Index(20deg.C)	1.325 - 1.500	USP XXIX / DGF IV C (52)
pH(20°C) (100% Concentrate)	4.5 - 5.5	USP XXIX / DGF H III (92)
Carrier Menstrual (Vehicle) Distilled Water Propylene Glycol	-	-
Water Solubility	Soluble	-
Saponification Value	-	-
Viscosity	-	-
Dry Residue (160deg.C / 2hrs)	1 - 15%	Mettler 16J
Preservation	None	-
Pesticide Content	None	Pflanzaniaschuttal 1989
Total Germs	<100 Cfu/ml - **Non-Pathogenic**	USP XXIX / Ph.Eur2.6.12 (97)
Total Yeast/Mold	<100 Cfu/ml	USP XXIX / Ph.Eur2.6.12 (97)
Heavy Metals(Total)As,Pb,Hg	<0.60 ppm	USP XXIX / Ph.Eur2.6.12 (97)

Comments:
Due to the nature of this extract, sedimentation may occur, but this will have no effect on the efficacy of the extract. This material has not been animal tested for efficiency, bioavailability or therapeutic content

External use only.

NOT FOR DRUG USE
mb/ao/campoPD#0002/1294

They are for EXTERNAL use only and are NOT FOR DRUG USE.
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Japanese Mushrooms

Magojakushi
Ganoderma neo-japanicum

Semitake
Cordyceps sabolifera

Matsutake
Tricholoma matsutake

Mannentake
Ganoderma lucidum

Tsuriganedake
Fomes formetarius

Tsugasaromoshikake
Fomistopsis pinicola

Eburiko
Fomistopsis officinalis

Raigankin
Polyporus mylittae

Kawatake
Coriolus versicolor

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